Grow or go: a theory-building study regarding the survival and growth of micro-small enterprises: action-oriented research conducted at Werbedruck Petzold, Gernsheim, Germany

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GROW OR GO

A theory-building study
regarding the survival and growth
of micro-small enterprises

Action-oriented research conducted at
Werbedruck Petzold, Gernsheim, GERMANY

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Graduate College of Management, Southern Cross University, NSW, Australia

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Firstly, my supervisors, Adjunct Professor Bob Dick and Associate Professor Shankar Sankaran, who provided not only valuable and timely advice, but also fair and professional guidance. I am thankful to them for their assistance.

Thanks also to the staff at the library of the Southern Cross University who provide an excellent online and remote access service. Their support made my task much less onerous.

Special thanks to the work group at Werbedruck Petzold GmbH. Their input gave the entire project a focus on reality, and greatly added to the entire creative and evaluative process.

Next, to my family and friends for their ongoing encouragement. My dad for enabling my education, my mum for never failing to support me in times of doubt, and my friends who know what I am capable of, even when I have forgotten.

Finally, to the most important people in my life – Peter and Ben. You swept the decks clear for me and my thoughts, attended and put up with my every whim, and displayed a great deal of patience. Thank you.
ABSTRACT

In general terms, this research project evolved in response to my desire to find out more about the planning issues faced by micro to small-sized enterprises (MSEs). In particular, how they plan for survival and growth.

As such, the main objective of the action oriented research project is to assess the viability of developing a framework which will be capable of providing structured, useful and relevant guidance to micro to small-sized enterprises (MSEs) in terms of business survival and growth. In a practical sense, it is important that the framework is also flexible enough to deal with the complexity and fluidity of the real life business environment within which MSEs operate.

A review of current growth theory and the current available data and tools aimed at assisting MSE in the area of growth planning is presented in chapter two. This review serves to highlight two important issues which, in turn, guide the research project.

- Firstly, an attempted review of current statistical information regarding MSEs highlighted a serious lack of general planning data for this sector within Europe. (Statistics are only analysed and reported for companies with over 20 employees)

- Secondly, extant literature regarding growth theories for MSEs, fails to provide one perfect solution. There is a general consensus that it is neither possible, nor desirable, to try to develop one single and fixed model to predict company growth.

Chapter two also provides a review of associated disciplines which are closely related to MSE planning ie entrepreneurship, innovation, and complexity. This extended review shows that flexibility and adaptiveness have a great impact on business decisions regarding company survival and growth and further strengthen the case for a flexible solution. Through consideration of these related topics the following three concepts are brought to the fore and are subsequently integrated into the final response to the research questions:
- inherent company leadership,
- the influence of the external environment and the opportunities and threats it presents to a MSE, and
- the internal factors which impact MSE company operations and decisions.

As such, Chapter two highlights the need for a bespoke solution which is both reactive and conditional.

In order to focus the project, several delimitations were introduced.
- Geographically, the research was based upon the prevailing conditions for German and central European MSEs.
- Furthermore, a single case study company was selected as it suited the participative requirements of the project. The company is a micro-sized offset printing house.
- As the project advanced, it became clear that decisions regarding company survival and growth for MSEs varied greatly depending upon the stage of operations in which the company found itself. Thus, a more specific focus on mature MSEs was adopted as the project and research progressed.

By placing these three restrictions on the research project it was possible to conduct meaningful action-oriented research, aimed at generating future action and change beyond the study, as well as identify and address a very specific set of research problems, namely:

Main problem:
How can managers of mature micro to small-sized offset printing plants in German/central Europe plan for survival and grow into the future?

Sub problems:
  a. Can a management decision tool be developed to assist this decision and growth process in the mature company?
  b. How would such a tool be formulated to ensure both effectiveness and acceptance? (what factors should it consider)
The key concepts introduced via the extant literature were then integrated into a soft systems review, supported by action-oriented research, in an effort to develop a flexible framework aimed at addressing the research problems.

Several phases of research serve to support and build upon, or refine, one another to establish a more relevant and meaningful solution. A preliminary research phase comprising a Delphi study and convergent interviews was supported by group feedback sessions conducted with a small work group from the case study company – Werbedruck Petzold. The work group reviewed aspects of the developing framework at various stages throughout the project; each time participants were able to refine concepts and enhance the response to the main research problem.

Chapters three, four and five present this conceptual development and testing/evaluation process. They also highlight the robustness of the data stemming from repetitive cycles and triangulation techniques integrated into the research design.

The ultimate contribution to knowledge which evolved from the action-oriented research is presented in the form of a three-step framework which acknowledges

- the overriding and inherent wishes of the MSE’s owner/manager,
- the opportunities and threats posed by the external environment, and
- the mix of functions each MSE must develop to meet its own specific goals, given its own environmental situation.

It is important to note that the response to the research problem is not a fixed model which can be systematically applied to all MSEs. But is rather a flexible framework which is intended to be actioned by MSEs, given their own situations and goals. The key to the proposed framework is that it must be continually reviewed to reflect the ‘current reality’ of a MSE. It is basically a framework which has been developed via action oriented research techniques and is intended for ongoing case-specific, action, review, and refinement. It represents a shift in growth theory for MSEs as it embraces and promotes contingency, thus better reflecting the reality of MSEs.
Certificate of thesis

I certify that the ideas, research, results, analysis and conclusions reported in this thesis are entirely my effort, except where otherwise acknowledged. I further certify that this work is official and has not been previously submitted for any award, except where otherwise acknowledged.

Signature of candidate        Date

ENDORSEMENT

Signature of supervisor        Date

Associate Professor Shankar Sankaran
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<td>BVDM</td>
<td>Bundesverband Druck und Medien (German association for print and media)</td>
</tr>
<tr>
<td>CATWOE</td>
<td>Acronym for: Customers, Actors, Transformation, Weltanschauung, Ownership, Environmental constraints (part of soft systems methodology)</td>
</tr>
<tr>
<td>DRUPA</td>
<td>Druck und Papier (print and paper trade fair – the world’s most important print industry expos)</td>
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<tr>
<td>FERI</td>
<td>FERI Research GmbH (From Feri Corp.- industrial research consultants, USA)</td>
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<td>Group feedback analysis</td>
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<tr>
<td>HRM / HR</td>
<td>Human resource management / Human resources</td>
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<tr>
<td>IKB</td>
<td>Deutsche Industriebank (German Industrial bank)</td>
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<tr>
<td>MSE(s)</td>
<td>Micro to small-sized enterprise(s)</td>
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<td>MSOP(s)</td>
<td>Micro to small-sized offset printer(s)</td>
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<td>SME(s)</td>
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<td>SSM</td>
<td>Soft systems methodology</td>
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CHAPTER 1
INTRODUCTION

Most companies express a goal to ensure a successful future. This means planning for a successful future. Which means knowing roughly where to go and what it takes to get there.

The project, upon which this thesis is based, aims to understand what it takes to secure a successful future for a micro-small enterprise (MSE) in the printing industry and, at the same time, acknowledge the inadequacies of the present situation and draw from past experience - a method of future thinking which builds upon the past, prescribed by Slaughter, (2002). The result of the study is a three-step framework designed to assist managers of MSEs focus their efforts, consolidate their plans, and strive towards survival and/or success depending upon their wishes.

The focus of the project is micro to small-sized offset printers within the German/central European market. As this segment is quite specific, and very little federally collated data exists for this group, this chapter provides an historical and qualitative review of the issues and overall shortcomings, leading to the undertaking of the research project. A comprehensive literature review is provided in Chapter two and covers the theoretical disciplines which impact the study. These are primarily growth models which acknowledge the synthesis of the work of O'Farrell and Hitchens, (1988); Gibb and Davies, (1990); Curran, (1996); and McMahon, (1999) among others, and cover the related topics of entrepreneurship, innovation, and contingency/complexity.

This provides the basis for the action-oriented research which addresses the research problems outlined in section 1.2 and ultimately leads to a justified and practical response.

1.1 Background to the research - why focus on printing companies?

The printing industry in Germany has been flagging over the past decade, a trend that is characterised by erratic market movements and high company failure rates. In 2002, 306 German printers registered insolvency. This represents an insolvency rate
47% higher than the previous year – the highest level on record. In 2003 insolvency rates increase a further 20% (BVDM 2005). The situation is not positive, and printers clearly require help to plan and indeed, survive.

In 2004 over 10,000 printing presses were operating throughout Germany, of these, approximately 130 presses have offset rollers, this represents approximately 65% of the sectors turnover and capitalisation (IKB 2004). Printing companies can be split by many factors. This doctoral project identifies and ranks printers by size (number of employees) and type of printer (machine-based) and, as such, will focus on the needs of micro to small-sized, offset machine printers (MSOPs). A full review and definition of a MSE/MSOP is provided in sections 1.6 and 2.1. This study defines a MSOP as a privately owned offset printing company employing between 2-50 people, with an annual turnover not in excess of €5 million. The findings and results may well be applicable over a wider scope; however, this is not the focus of the research. The aim of the overall project is to establish a management decision framework specifically designed for MSOPs. The action-oriented research results, and bulk of the industry literature is German-based. However, the management principles drawn upon are globally acknowledged. The project deliberately leaves the door open for further research to be conducted in the future, with the aim of testing the framework in other markets and within other sectors (see Chapter five).

Informal, observational research indicates that to date, MSOPs tend to use unstructured planning techniques. Typically, managers are either family business owners or technical craftspeople who have ‘moved their way up the ranks’. This stands to reason as the printing industry developed from a trade/cottage craft. Most planning is undertaken by unskilled people (unskilled - in terms of management and organisational behaviour knowledge, and tertiary management qualifications). In Germany (and in fact central Europe) it would appear that in most cases ‘professional’ management advice, when it has been engaged, has been provided either by large consulting groups with restricted industry knowledge, bankrupt/failed printers trying their hand at consulting, or large industry suppliers, who may have a vested interest when collecting, analysing, and reporting data. There are several reasons the author chose to undertake this project and close the research gap. The most important of these decision criteria are summarised in Table 1.
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<th>Reasons for conducting the study + desired outcome</th>
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<td>Toughening general economic climate</td>
<td>Print technology (machines, imaging setters) is very expensive, running costs are high, and financial institutions have clamped down on lending. Remaining ‘up to date’ and viable requires more and more financial reserves and company assets - luxuries which privately owned/funded MSOPs may not possess. Desired outcome: FOCUS MANAGEMENT’S BUSINESS AND FINANCIAL SKILLS &amp; DECISION PROCESSES TO DEAL WITH THE ENVIRONMENT</td>
</tr>
<tr>
<td>Lack of trained management</td>
<td>Decision making and planning may become reactionary and ad hoc. Little time is left for planning after the daily ‘fires’ have been extinguished. Very few print managers (managing directors) undergo formal training, especially seminars, to brush up old skills and learn new ones. Desired outcome: PROVIDE A TOOL TO HELP STRUCTURE PLANNING ACTIVITIES &amp; FACILITATE COMPANY SURVIVAL &amp; GROWTH, (given inherent skills and desires)</td>
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<td>Lack of experienced, unbiased and knowledgeable advisors/consultants</td>
<td>External assistance is limited and often expensive. At a federal statistic level the data collected is too broad in scope, and thus not very useful in planning at a micro level. Desired outcome: EMPOWER &amp; INFORM MANAGEMENT TO PLAN EFFICIENTLY</td>
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<td>Low market perception of the print product and the market’s lack of understanding regarding the printing industry</td>
<td>There is generally a low value attached to the skill level required to produce a printed product. Printing is often regarded as the last step in the production process and the contribution printers make may be perceived as being far less important than that of graphic designers, copywriters, photographers etc. who have also taken part in the production process in a more visibly creative way. Desired outcome: INCREASE PROFESSIONALISM &amp; INNOVATION</td>
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<tr>
<td>Threat of cost wars</td>
<td>Cost pressures have already eroded a great deal of the market and have cast a negative shadow on the ethics of printers who would gladly ‘cut a deal’ to survive another month. Larger companies in Europe have set up internet bidding systems whereby printers can ‘bid online’ for certain jobs. Such systems function by allowing companies to advertise a job for tender, and printers then underbid each other until the end of the bidding period – ironically, the lowest bid ‘wins’! Desired outcome: EDUCATE THE INDUSTRY &amp; MARKET AND HOPEFULLY INCREASE THE PRINT PRODUCT’S PERCEIVED WORTH</td>
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An historical perspective
The chronological review, outlined in points a. to c., presents the aspects linking the past, present and future, based upon the capacity for planning during these times and the extent to which it was undertaken by MSOPs.

a. What is wrong with the present situation?
The major stumbling block at present is the market’s low perceived value of the printed product, nurtured by the industry’s own lack of professionalism which has arisen from a ‘need to survive’ mentality. Few people understand and respect the talent involved in printing. In fact, the use of the word ‘talent’ to describe the skills required to print, would potentially surprise many. With low market perception it is naturally not easy for printers to charge high premiums, unless they can justify these additional costs with a premium product or some other form of exclusivity, such as location, delivery, service and similar.

It should be said that there are fine examples of printers who are able to set themselves apart from the norm and operate as successful businesses. However, informal interviews at trade shows such as DRUPA 2004, support BVDM (2005) statistics and indicate that, presently, most feel some form of cost pressure. The difference between a successful printer and one on the verge of bankruptcy appears to be linked to the ability to plan and innovate.

b. Why did this situation arise?
Many factors have led the printing industry to where it is today. The very humble beginnings of printing and bookbinding, the influence of the industrial revolution and machine technology, the affect of electronic communication and virtual imaging may all play a role. The focus of the project is not to explain how the industry developed, but rather to obtain an understanding for the factors which existed in the past and had/have some influence on the present. It is also of interest to consider if they will continue to affect printing in the future. These issues have been dealt with, in part, by a Delphi study, and as such will be covered in more detail in Chapter four, in sections 4.2 – 4.3. At this stage it is perhaps sufficient to note that, in the past, industry image, general product positioning, and market perception were not embraced as serious issues in printing planning and, as such, the industry has developed to the point it is today. From informal interviews, the Delphi study and
group feedback analysis, it would seem that planning itself was not a real issue because, until 10-15 years ago, the economy and market situation for printers in Germany was positive and there were always enough jobs to go around. Planning was simply a matter of getting through the daily workflow.

c. What will it lead to?
The future of printing is not clear, according to internal sources, the impact of the internet and electronic communication has had less of an effect than anticipated ten years ago. Results of the Delphi study suggest various scenarios. The key to a successful future will be focused innovative planning, and addressing the key areas of management (finance/legal, marketing, production/technology, HR). An appreciation for arising technologies and product delivery are also key factors.

1.2 Research problems and research questions

The central theme of the research is outlined in the research problem stated below:

Main problem:
How can managers of mature micro to small-sized offset printing plants (MSOPs) in Germany/Central Europe plan for survival, and grow into the future?

Sub problems:
  a. Can a management decision tool be developed to assist this decision and growth process in the mature company?
  b. How would such a tool be formulated to ensure both effectiveness and acceptance? (what factors should it consider)

These problems are addressed by the study based upon dialectic qualitative inquiry and action-oriented research trials. It is concluded that MSOPs can successfully plan for their company’s survival and growth by addressing three factors
  - their own inherent goals/desires for the company,
  - the external environment (opportunities and threats leading to innovation) and,
  - the key functional areas of their companies, to develop a mix which will facilitate the attainment of the owner’s goals.
Innovation is the major impetus for growth and a three-step framework is presented in Chapter five as the culmination of the research findings, addressing the research problems above.

**Major bodies of theory covered by the research project**

The major body of theory centres on company growth, with secondary attention being given to the related fields of

- entrepreneurship,
- innovation, and
- complexity or contingency issues

The following section provides a brief overview of the main theories that impact upon the conceptual development of the study. As these theories are fully reviewed in Chapter two, at this point, they will only be briefly introduced.

With respect to the parent discipline – MSE growth, the following research papers served to provide not only a synthesis of the accumulated knowledge to date, but also provided a perspective of the recurrent themes throughout the research. Four key papers guide this review and open the discussion to a full analysis of company growth theory. The work of O’Farrell and Hitchens, (1988) provides an overview of growth models separated into four categories ranging from economic and business indicators to stage of growth models and managerial growth strategies. They provide some support for issues which arise at certain life stages, but conclude that overall no one model for determining micro-small company growth exists, nor is likely to be developed.

Gibb and Davies, (1990) introduce an in depth review of growth in terms of

- personality dominated approaches,
- organisational development approaches,
- business management approaches, and
- sector and market lead approaches.

Their review introduces further considerations such as inherent owner/manager characteristics and external, environmental factors which are critically reviewed and
further developed throughout this study, impacting the findings and considerations incorporated into the framework presented in Chapter five.

Both of these papers and various other growth theories are critically reviewed by McMahon, (1999) who succeeds in establishing a benchmark for future studies in this field by linking the various schools of thought and approaches to small company growth with the concept of a complex and contingent reality. Miller’s, (1981) gestalt theory which addresses growth phases or steps through which a company moves, not necessarily sequentially, provides interesting insight into a non-sequential, contingent scenario. The important concept of the ‘real life’ complexity faced by MSEs, and their need to implement adaptive management techniques is further examined in this study and, as such, integrated as a valid consideration within the findings.

While company survival and growth is a major theme throughout the literature review, clearly several other fields have a bearing upon the problem situation. These are addressed under related fields of theory and cover:
- entrepreneurship, as it is taken to be a congruent form of owner/management of MSEs.
- innovation, as this is the stimulus for development, and
- complexity/contingency, as this is the reality of the micro to small business situation.

These concepts are dealt with separately in section 2.4, and are introduced by research conducted by Curran, (1996) which invites consideration of a wider range of issues affecting company growth than those traditionally covered in growth theories reviewed to that point. The validity of these considerations and their application in practice are incorporated into the participative action-oriented research conducted as part of the study. The results and findings are presented in Chapters four and five.

Research questions (addressed in detail in following chapters as part of the research problem)
Based upon initial literature reviews of the parent and related literature, and statement of the overall research problem, it is possible to formulate the following
research questions which will further guide the project and focus research efforts. At this stage the research questions will be simply listed. A comprehensive exploration of the questions below is undertaken in Chapter two. The questions themselves are quite succinct and relate to MSEs in the offset printing sector. This was intended in order to keep the research focused, and ensure purposeful data analysis.

- What are the relevant factors affecting growth in the offset printing industry for MSEs?
- How relevant are they to current management decision processes and actual working situations?
- How can the theory be incorporated into a working framework to assist MSOPs make the right decisions to grow their businesses?
- How can the decision process be succinctly and meaningfully developed via a management decision framework for MSEs in the offset printing sector?

The questions relate quite closely to the research problems and, as such, serve to delimit them. They will not be addressed, individually, in great detail but rather will be addressed as part of the overall research problem, due to the fact that the study is small and qualitative and seeks to build upon theory rather than solve/support an hypothesis.

**Contributions to the field of knowledge**

A complete discussion of the contributions made by the research project to the field of ‘management decision making and planning for company growth’ of MSOPs in Germany/central Europe is contained in Chapter five. The following information provides a brief summary which may assist the reader to better understand, and appreciate, the project prior to commencing a review of the detail.
In general, the research makes several key contributions.

- It applies action-oriented research techniques to a relatively fresh problem situation within the private sector (i.e. survival and growth of MSEs).

- It tests, in practice, the theories behind the assumptions within the final three-step framework.

- It provides a robust, informed and unbiased review of the relevant factors affecting the survival and growth of offset printing companies in context of past, present, and future influences.

- It provides a conceptual framework which is both relevant and flexible.

- It links, for the first time, the inherent nature of the owner (desires and business goals), the opportunities and threats of the environment to stimulate innovations, and the human (and other) factors required to set innovation into action.

1.3 Justification for the research

The research project was undertaken in response to two key factors: firstly, the extremely tough situation in which printers, within Germany/central Europe, find themselves and secondly, the apparent lack of dedicated formal and practical assistance available to them. The following information was taken from an article published by Info Trends Cap Ventures, and summarises quite succinctly the general market situation within Germany and in fact the trend for most of the central European countries. The trend report (IT 2004), states that Germany has the largest population of the countries within the European Union, as well as the highest gross domestic product. It goes onto state that in 2000, Germany saw the highest growth rate since the re-unification boom of the late 1990s. However, in 2001 Germany was heavily impacted by the USA economic slowdown due to its reliance upon export trade. As a result of this and other internal factors affecting the labour force and the consumer price index, overall capacity utilisation in the print industry has been in decline throughout the entire period (IT 2004).
The areas specifically lacking in formal research, and research driven findings, which are of relevance to MSOPs within central Europe (in particular Germany) can be split into three categories:
- Economical and financial
- Theoretical (growth models and management decision tools)
- Practical (tested theories, reviewed and improved through practical application)

In this sense, the major issues which the research attempts to deal with are identified in Table 2.

**Table 2: Major issues addressed by this research project**

<table>
<thead>
<tr>
<th>ISSUE- general</th>
<th>How the general issues affects MSOPs</th>
<th>RESULTING NEEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECONOMIC/FINANCIAL</td>
<td>- higher price competition - less funds/credit available for investment in technology/equipment</td>
<td>Required: A means of financial evaluation and budget planning for growth, reviewing the functional aspects/mix of each company.</td>
</tr>
<tr>
<td>- introduction of Euro and price squeeze</td>
<td>- credit institutions’ restrictions on loans</td>
<td></td>
</tr>
<tr>
<td>THEORETICAL</td>
<td>- lack of management tools specifically for printers - lack of planning and decision guidelines</td>
<td>Required: A simple management decision (or company survival and growth) tool for MSOPs</td>
</tr>
<tr>
<td>- exposure to, and application of, management decision and planning tools and guidelines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRACTICAL</td>
<td>- MSOPs are craftsmen and trade educated, very few have formal management education as the emphasis is on technical know-how and skills, rather than scholarly knowledge</td>
<td>Required: A logical model which applies and functions in practice, and reflects the unique situation each MSOP faces.</td>
</tr>
<tr>
<td>- management skills and know-how to operate successfully and in a somewhat structured manner, given the complex situation on a global level</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The printing industry itself is clearly an area of great importance. Originally stemming from letterpress, the first printed item was the bible printed by Gutenberg, (1440-50).

The printing press symbolised a huge leap forward in the world of communication,
as communication items could be mass-produced as opposed to being individually
hand written. Printers were initially craftspeople and regarded, quite rightly, as
learned and informed. This stands to reason as it was they who first received the
‘news’ for publication, manuscripts for print and so on. While at the printing machine
there was time to read and learn! Today, print machines are so big and so fast, and
print deadlines are so tight that there is little or no time to read the written word.
Printers have evolved into deliverers of communication. Technical skills and know-
how have taken on more importance. Nevertheless the printing industry is still very
viable and represents an important sector of the business world. Reliable and
relevant data for MSOPs is not readily available due to a number of factors, the major
one being that the German bureau of statistics does not analyse data for companies
employing below 20 people. In addition to this the data which does exist for medium
to large printing companies is not split into type of printer i.e. offset, flexo and so on.
Several consultancy firms, educational institutions and private research companies
have compiled reports however, they are based upon the federal statistics and these
are for larger printers which operate very differently to MSOPs i.e. they utilise
economies of scale. Some of the most interesting information can be taken from
German bank ratings of the printing branch. The FERI Branch rating for printing plant
in the second quarter of 2004 was D-. This effectively means that printing plants are
perceived as a bad investment, with high risk attached. This rating is based upon
sector growth rate, competition, debt/capitalisation and work force figures (FERI
2004). The following figures, from the German Bureau of Statistics (SB 2005),
highlight the overall importance of the printing industry to the German economy, and
thus its relevance as a field of research.

- The printing industry is classified as a middle-sized industry with
  approximately 197,000 employees and roughly 12,400 companies.
- 94% of the overall printing companies have fewer than 50 employees.

The contribution of the printing industry to the overall economy is far greater than the
figures would indicate. Due to the fact that it represents the major means of
information dissemination i.e. newspapers, marketing material, political and business
news and advances, certain ‘value’ can also be attached to its overall contribution.
Three other important factors, further to the quantitative data presented, support my choice of this research field. These qualitative matters will now be briefly outlined.

- Several of the world's biggest print machine and other suppliers have their headquarters in Germany. HEIDELBERG being the largest and others include König and Bauer (KBA) and MAN Roland. This positions German printers in a central and unique environment and affords access to quality, first-hand research opportunities.

- The printing industry supports several other major industry sectors such as, forestation and paper milling, ink and colour manufacture, plate production, colour management, measuring, and workflow and so on. In Germany alone the overall printing market generates in the area of 18 million in net turnover. Within Germany there are just over 12,400 printers, 10,562 of them are classified as MSEs (1-20 employees). The offset printing sub sector accounts for around 65% of the overall print market (SB 2005). This is clearly a potentially influential sector, responsible for a variety of communication and social support, and thus valid in terms of review.

- While there exists little formal research into the lack of useful management decision tools for MSOPs, it is an evidenced fact that the rate of bankruptcies is increasing (BVDM 2005). Planning and growth strategies are either failing or not being implemented. Informal, word of mouth research, with printers and print suppliers indicates that little future planning is undertaken and even less consideration is given towards the various options for growth. Survival has come to be the focus of the MSOP. Offset printers undercut each other on quotes just to 'cover their external production costs'. There is often little time left for planning, and even less resources. There appears to be an overall lack of respect for theoretical models and management planning techniques. This is perhaps understandable given the hands-on, technical background most offset print managers possess. There is a need for a framework which will be accepted and applied i.e. practical without being too complex or theoretical.
Based upon the justification provided, this project aims to develop a framework, via action-oriented research, which can be simultaneously researched, developed, evaluated, and applied. By incorporating these steps into one process it is hoped that the research will lead to a useful and applicable tool which is developed as a result of practical efforts, and not in anticipation of them.

In this respect, an appropriate method for the research project, and framework development, must facilitate ongoing input from those involved in the application of the final management decisions. Action-oriented research provides a suitable research frame for such a project aimed at reviewing a complex and real situation. Section 1.4 deals with the method in more detail.

1.4 Methodology

The overall research paradigm is one of action-oriented research. As such, the ultimate success of the project is contingent upon the interaction of stakeholders (the work group) and the trial and review of concepts. This is the reason for choosing to conduct the project within the MSOP Werbedruck Petzold, located in Germany. Employees of the company comprise the interactive work group, and the managing director acts, to some extent, as a co-researcher to ensure the integrity and plausibility of industry-related material.

The adoption of action-oriented research in the corporate world is relatively slow compared to its use in the public sector (e.g. education, healthcare). This fact is surprising given the inherent nature of interactive workflows and project situations. Much planning is based upon economical, financial, and quantitative data as this is considered more accountable and traceable. The emphasis of this project is to operate within current workflows and business scenes, in an endeavour to provide a framework which evolves due to teamwork, and not as a prerequisite for it.

It is the intention that the tool developed as a result of the study will be incorporated into work practices and be developed and changed with these very practices, hence addressing the need for flexibility and responsiveness in planning and company growth. This concept fits perfectly to the principles of action-oriented research, whereby the flexibility and evaluation of decisions is critical to maintain objectivity.
From this platform, the overall project method was established with a major emphasis on integration into the stakeholders’ work patterns, as opposed to generating an additional workload.

The method itself is fully outlined, and justified, in Chapter three. However, by way of introduction it is important to note that the project and an action-oriented research approach lend themselves to a soft systems methodology, based upon ongoing qualitative research. While this qualitative approach was adhered to, and built upon, a certain amount of quantitative data was also required to establish an overall perspective of the offset printing industry and the past and present business climate therein. It is possible to logically split the research needs into two distinct areas in order to:

a. obtain the relevant data to answer the research questions, and
b. conduct meaningful action-oriented research via a soft systems method.

Table 3 outlines the data objectives and their place within the project method and research design.

**Table 3: Information needs aligned to data sources**

<table>
<thead>
<tr>
<th>Information required</th>
<th>Type of data which would provide the info required</th>
<th>Where to obtain it – sources of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>General business information about the printing industry and, more specifically, offset printing in Germany and central Europe</td>
<td>a. Statistical (quantitative) information – secondary</td>
<td>Published research from: a. German and European statistics offices b. Chamber of commerce c. Printing industry d. Print suppliers own research</td>
</tr>
<tr>
<td>The relevance of this information when applied to one case study company (Werbedruck Petzold)</td>
<td>Qualitative information (primary) a. Expert opinions b. Personal feedback</td>
<td>Primary research conducted with a. panel of experts (Delphi study) b. convergent interviews conducted with the case study company work group</td>
</tr>
<tr>
<td>How to turn this data into a workable model and apply and test the concepts and model</td>
<td>Qualitative information (action-oriented primary data)</td>
<td>Primary research conducted with the case study company a. group feedback analysis</td>
</tr>
</tbody>
</table>
The overall method, due to the project’s dependence upon ongoing evaluation and feedback, is primarily driven by qualitative research obtained within a soft systems structure. In following chapters it is argued that, rather than detract from the overall robustness of the project, action-oriented research strengthens it, as ideas are reviewed and amended on a continual basis which allows for problems and limitations to be dealt with and reduced/eliminated over time. Another aspect of the method which addresses the area of research robustness is the dialectic nature of the data collection techniques. Each step in the data collection process doubles back on issues already covered in previous stages. In this way concepts are reviewed and expanded as well as delimited throughout the entire project. This very process highlights the heart of micro business activity. Contingency and complexity prevail and provide the best fit for a business model operating in the open market climate in Germany. Free markets do not allow for the ideological application of concepts. But rather concepts are subject to ‘real life’ interjection throughout the entire planning, testing, and application process. This research project is intended to undergo a similar ‘real world’ testing in order to ensure that it both complements actual workflows and maintains a robust and realistic core.

1.5 Outline of this thesis

Following this brief introductory chapter and project overview, various chapters containing detailed analyses and discussion of the various deciding and driving factors, issues, and outcomes, will be presented. In an effort to convey this information in a clear and meaningful manner, the remainder of the thesis has been structured into four further chapters containing relevant subsections.

This section briefly outlines the overall thesis structure to clarify the presentation of information.

**Chapter one:** Introduction outlining:

- background to the research
- research problem and questions
- justification for the research
- the methodology
- an overview of the thesis
Chapter two: Research issues

This chapter is split into two major sections, one looks at the content literature in relation to the parent discipline (growth theory), and the other reviews related fields of theory which impact upon the thesis topic (entrepreneurship, innovation, and contingency/complexity).

From a theoretical point of view, each section reviews existing literature in order to
- identify gaps in the data available,
- address some of the major issues within existing research, and
- build upon my knowledge base.

The first section reviews various aspects of company growth, with a focus on growth via innovation. To a lesser extent, group dynamics and personnel issues are also briefly reviewed as they bear some consideration during the primary research phases conducted as part of the project. This review serves to highlight the consensus that it is neither possible nor desirable to develop a static growth model for MSEs.

The second major part of Chapter two (section 2.4) presents a review of related disciplines
- entrepreneurship (as the typical micro/small business owner),
- innovation (as the stimulus for growth)
- complexity and contingency (as reflecting reality).

These fields are shown to greatly impact the survival and growth of MSEs, and thus are incorporated into the study for further participative review.

Chapter Three: Methodology

This chapter provides a detailed justification and review of the selected paradigm, method, and research techniques. It explains why action-oriented research is the most relevant paradigm and how the offset printing company Werbedruck Petzold
can be used within action-oriented research parameters to develop the most meaningful research scenario and set a precedent for future action.

The chapter also outlines the rationale and practical sense of soft systems methods in the real world. An emphasis is given to the relevant application of a soft systems method to the field of offset printing, given the current economic and business climate.

Research procedures for the three main stages of research (Delphi study, convergent interviews, and group feedback sessions) are examined in an effort to ensure their robustness and overall integrity, use and integration into the project. Stage one, the Delphi study, is intended mainly as an information gathering exercise to support and co-join theory with practice. The results of the study guide the following stages of research which are based upon individual and group feedback from the work team within Werbedruck Petzold. Convergent interviews and group feedback analysis are the research techniques used. The procedure for each is outlined in Chapter three.

This chapter comes to a conclusion following a review of relevant ethical issues impacting both the study, and the various fields of research from which it draws its impetus. Diagram 1 summarises the relationship between the study method and action-oriented approach.

Diagram 1: The methodological structure of the study and its relation to the research undertaken and outcomes presented.

---

**Theoretical REVIEW**  
Parent disciplines

---

**Practical RESEARCH**  
Offset printing field

---

**OUTCOME/action**  
Framework review /develop

---

**Theoretical REVIEW**  
Parent disciplines

---

**Practical RESEARCH**  
Offset printing field

---

**OUTCOME/action**  
Framework review /develop

---

**Decide paradigm**  
General research problem

---

**Decide method**  
Specific research questions

---

**Decide action plan**  
Project plan and thesis

---
With this logical structure in place it is possible to conduct the research in ever-tightening spirals until finally the apex is reached and the project addresses all research problems and questions, plus acknowledges existing fields of research, and takes into account actual work place scenarios in offset printing. Thus, producing an informed, robust, and relevant piece of research.

**Chapter Four: Analysis of Data**

The findings for the preliminary stage of research are presented in Chapter four. They provide a basis for discussion and evaluation as they highlight various factors which have, do, and will impact the success of MSOPs. Although all data is qualitative, some care has been taken to present certain results quantitatively, for information and communication purposes. For example, results of the Delphi study have been displayed graphically to provide an overall feel for group trends. However, the small number and qualitative, subjective nature of this type of research must be considered when reviewing the quantified results.

Both the convergent interviews and group feedback analysis support the Delphi study (more so the convergent interviews). The main objective of the group feedback analysis is to assist in the testing and refinement of the growth model. The procedures and results of the research are fully outlined and presented towards the end of Chapter four and in Chapter five.

**Chapter Five: Conclusions**

The final chapter provides a concise overview of the overall conclusions and findings, in terms of the original research problems/questions.

Furthermore, it reviews the implications the outcomes present, both in a theoretical and practical sense. Although no big policy changes will result (to be expected as the project is designed for a very focused section of the private business sector), hopefully it will affect the work practices of managers/owners of MSOPs. The author presents her thoughts on these matters and postulates some recommendations for acceptance and application of the management decision/growth framework.
By way of a final word, opportunities for future research in the field, and more dedicated studies are outlined.

Additional/extra information
In addition to the five main chapters, the following sections are included for either ease of reading and reference, or to present additional information:

- List of contents, abbreviations, tables, and diagrams
- Reference list
- Appendices

1.6 Definitions
Definitions adopted by researchers are often not uniform. For this reason, key words and potentially controversial terms are defined below to clarify the author’s position and meaning throughout the thesis. In some cases I have chosen to define some well-known terms to clarify my interpretation, and minimise confusion.

**Action-oriented research:** research designed to provide insight into a topic which can establish a course for action, but must not necessarily result in action taking place. It involves those who will eventually have to take action in the situation (not the researcher) and may be viewed as the initial stages of pure action research. This study employs an action-oriented research paradigm.

**Action research:** research designed to acquire information via participative techniques which require stakeholder involvement, review, action, and evaluation in ongoing cycles.

**Central Europe:** defined for the study as Austria, Benelux, France, Germany, Italy, Spain and Switzerland.

**Company growth:** performance of the company beyond normal market returns. Increasing profit, and expansion of facilities, output, resources, and innovative products.
**Company survival:** the ability of the company to manage its debts and provide adequate funds for the owner/manager to survive comfortably (based upon his/her definition of comfortable)

**Complexity/contingency:** this study limits the definition of complexity and contingency to a simply reflection of the reality faced by MSEs. It implies ever-changing features which must be dealt with in a flexible nature.

**Concept Delphi research:** Delphi research aimed at procuring as many ideas and concepts as possible from a panel of industry experts. The goal is to gain rich information and not to obtain consensus. It can also be seen as a form of high level ‘brainstorming’ to obtain experts’ ideas and opinions. It is a suitable tool for early fact-finding research. This is how it was employed in this study.

**Convergent interviews:** groups of two people are interviewed by separate interviewers and results are compared and contrasted based upon some shared line of questioning. The aim is to provide reinforcement for each interview/source of feedback thus increasing the plausibility of the information provided.

**Co-researcher:** the study utilised the service and input from the managing director of the study company during the convergent interviews to crosscheck feedback and validate responses from another source.

**Delimitations:** aspects which can be controlled by the researcher in terms of setting limits regarding the scope of the study.

**Delphi study (email):** A confidential, research technique which procures the opinions and feedback from a panel of industry experts, over a series of rounds, about a given research topic/topic of interest. In this study the Delphi study was managed via email.

**Entrepreneur:** the study equates the term entrepreneur with that of owner/manager of a micro-small enterprise. This concept is fully defined and explained in Chapter two.
**Flexographic printing:** a letterpress process where printing elements are raised above non-printing elements and coated with a layer of ink, then transferred directly to the substrate (material). Flexo printing is a letterpress technique which uses flexible printing plates, thus its name, to enable special ink feeding for such applications as packaging, labelling and so on.

**Group feedback analysis:** analysis and review of the feedback and ideas provided by a nominated group of stakeholders which are involved within the problem situation, and have ongoing influence on the system’s output. This feedback is sought on an ongoing basis in order to refine and test/evaluate concepts thus improve their validity.

**Growth framework:** a set of flexible guidelines aimed at leading a manager through the various considerations involved in company growth. It is less formal and less universal than a model. The study’s major finding, and contribution to knowledge, is presented as a three-step framework.

**Growth model:** this study takes the term ‘model’ to mean a fixed and prescriptive approach to solving or evaluating some problem/situation. It is also assumed in this study that a model conveys a sense of universally applicable laws or phenomena.

**Innovation:** creative development, stemming from an external stimulus (in this case technology) leading to a saleable product/service.

**Limitations:** limits to the scope of the study, more or less, outside the control of the researcher.

**Micro to small-sized enterprise (offset printer):** a privately owned and managed company with between 2 and 50 employees, and turnover of less than €5 million per year (operating in the offset printing sector).

**Offset printing:** an indirect lithographic printing technology in which the ink is transferred from the printing plate onto a flexible intermediate carrier (the blanket) and then onto the substrate (e.g. material).
**Owner/manager's desires:** the unique, and individual goals an owner/manager holds regarding his/her objectives for his/her company (often personal, and can be continually changing)

**Participative work group:** a group of actively involved stakeholders which have ongoing input into the research process.

**Research problem:** the overall issue which drives the research study. In terms of this study it is identified by gaps in current theory, a lack of formal assistance, and the goal to build theory in the field of MSE survival and growth.

**Research question:** as this study is small and based upon qualitative results, the research questions are addressed within the scope of the overall research problem and bear little relevance to the study as stand alone hypothesis.

**Sheet-fed printing:** a printing process which uses sheets of paper/material as opposed to continual webs on reels.

**Soft Systems methodology:** a methodological approach which affords a logical and robust review of a soft or messy, 'real life' system with the aim of examining it so output and bettering the process it entails. (Chapter three provides more detail and a fuller definition)

**Stakeholders:** those involved in the problem situation which have a bearing upon the system within which the problem exists, and the outcomes it delivers. Key informants and/or actors. This study involves input from six stakeholders and the co-researcher.

**Technology:** this study defines technology as an external environmental influence upon a company presenting both opportunities for innovation and threats of speedy and expensive technological change/redundancy. It can stem from machinery and hardware, or software and work processes. It is defined as something, or some means, of improving, and having impact upon, a print process or outcome.
**Web-fed printing:** in essence continual printing which uses paper rolls with automatic reel changes to prohibit interruption to the printing process. It is a fast printing method, used for high editions for items such as newspapers and magazines.

**Work group:** the term used within the study to refer to the employees of the case company which participated in the study.

1.7 Delimitations of scope and key assumptions

The general field of growth theory is far too varied to address in one thesis. For this reason, certain limits have been placed upon the scope of the research undertaken. These boundaries have been set in terms of disciplinary, and industry limits. The following discussion may also be viewed as a review of the delimitations associated with the overall research problem, as it addresses the areas of industry, location, and field of research.

Main problem (restated):
How can managers of existing micro to small-sized offset printer houses in Germany/Central Europe plan for survival and grow into the future?

a. The size delimitations refer to those which help fine-tune the applicable field of micro to small business theory. In this case, the focus will be on company survival and growth of MSEs.

b. Industry limits allow the author to narrow the field of application to a very specific segment of the overall printing industry. This is necessary to ensure correct data collection and ultimate usage. It is also justified as the field of printing varies greatly, depending upon the type and size of printer and the markets they serve. The investment decision, customers, financial structure and workflow issues (to name a few) are all unique to the type of printer. The following rough comparison provides an overview of this rationale. NB: The comparison is intended to highlight some of the differences, and is not intended to be a complete and citable reference.
By providing this thumbnail review, I wish to highlight that each segment has varying levels of investment and is dependant upon (i.e. must plan according to) very different target markets (and their business cycles). The printing industry, as such, can actually be split into separate sub sections for evaluation purposes – this is the path I have selected by focusing upon offset printing.

A further reason for delimiting the scope of the industry is that it provides a logical link with the action-oriented research undertaken. The data from convergent interviews and group feedback analysis is derived from a work group, working within the offset printing industry sector. Their feedback and evaluations are thus relevant within the context of the offset printing field (the largest print sub set). Although possible and plausible, I do not intend to make assumption in this thesis regarding the applicability of the findings to other fields of printing. This, as mentioned previously, is an option for future research and is dealt with in Chapter five.

Further delimitations are placed upon the research, and findings, in terms of the location and work group.

c. Location of research: the research was conducted primarily in the German market, with references/comparisons made to the central European offset print industry. The reasons for this (partly outlined above) are that too many economical, cultural, and environmental variables disturb the qualitative data if too wide a geographic location is studied. This project is aimed at establishing a theory-building framework, based upon real life trials and tests.
I firmly believe that such a framework requires further research to enable it to be suitably developed, and thus applied successfully to all printers, globally. The framework derived as a result of the thesis work, does apply to one MSOP operating within the German/central European market. Further research will establish how, and if, it must be varied to allow for more general application.

d. Work group/unit of analysis: the size of the work group is also intentional as it allows for very focused and intense group feedback and project guidance, without requiring group consensus and statistical support. The nature of Werbedruck Petzold is such that it provides a fine example of a MSOP that has a reputation of consistent management planning and decision making, based upon innovation. The staff is highly trained and skilled, and the company itself has a reputation as one of the best in central Europe. The company is open to taking part in research, and fosters many fresh and interesting views on the offset print sector. It is an excellent study unit for the given project and problem situation in terms of prepress, print and management issues. Post production is not a major part of the case study company, thus will not play a significant role in the overall analysis.

By way of review, the research limits ensure that the research conducted is related to the offset printing industry, is localised to Germany/central Europe, is focused upon management decisions in terms of innovative growth, and finally, has been applied, tested, and reviewed in ‘real’ working conditions. Appreciation of the rationale behind the controllable delimitations, affords a purposeful result. This result is a sound conceptual framework which is supported by robust ‘real world’ testing, evaluation, and refinement.

1.8 Conclusion

Chapter one serves as an overview for the entire thesis. It provides a background to the project by highlighting the lack of targeted, meaningful decision support for managers of MSOPs operating within central European markets, in particular Germany.
Based upon this foundation and the information from Chapter two, the overall research problem and specific research questions have been identified, and will guide the remainder of the thesis. The research paradigm and method were briefly explained and justified, key definitions were presented, the thesis structure was outlined, and delimitations to the project were highlighted.

The structure and logic presented in this introductory chapter enables the project to proceed in a focused manner which is detailed throughout the remainder of the thesis. Each of the ensuing chapters fully examines the various aspects of the project. Chapter two begins by examining the research issues, and is followed by subsequent chapters on the method and research techniques, data analysis and findings, and finally, Chapter five presents a concise conclusion to the overall project, and presentation of a three-step framework to assist managers of MSOPs plan for their firms' survival and growth.
Prefatory note: outline of literature review process undertaken in this chapter

The following point summary, and Diagram 2, outline the overall approach to the literature reviewed in relation to the PhD topic. This short section is intended to facilitate comprehension of Chapter two, in terms of its layout and flow of logic. The literature in general is aimed at supporting qualitative research and, as such, uncovers the research issues which drive the project by simultaneously using the existing wealth of knowledge, and new information gathered from ‘the real world’. In a sense, the literature review evolved with the research project, and vice-versa.

The overall aim of the proceeding literature review is to establish a lack in formal research, thus supporting the research topics, outlined at the end of this chapter, as worthy research issues.

Following identification and clarification of the terms underlying the literature, a critical review of the extant literature will form the bulk of the chapter. Some aspects do require judgement to balance the argument, however, it is not the intention of this chapter to provide any biased or self-espoused comment.

The various sections of this chapter will be discussed in the following sequence, and cover the topics listed below. Diagrams may be used throughout to simplify analytical processes and classifications.

**Section 2.1**

The introduction provides:
- an introduction to the overall topic of micro-small enterprise (MSE) management,
- the definition of a MSE, and
- a summary of the general issues facing micro-small offset printers (MSOPs)
Section 2.2
Review of theory provides a review of literature relating to the parent disciplines (small business growth and company life cycles), plus:
- Acknowledgement of major growth theories to date (related to MSEs)
  - static equilibrium theories
  - stochastic models
  - strategic management perspectives
  - stage of development models
- Synthesised review of relevant growth models
  - Category 1: personality dominated approaches (hierarchy of needs, psychogenic needs theory, locus of control, expectancy theory)
  - Category 2: organisational development approaches (stage of growth)
  - Category 3: business management approaches (business strategy, company structure)
  - Category 4: sector and broader market-led approaches

Section 2.3
Bridge between parent and related fields of theory: widening the perspective.

Section 2.4
Review of theory provides a review of literature focused on related and relevant fields:
- Entrepreneurship (trait and personality theories)
- innovation, and
- contingency and complexity (in terms of business functions i.e. culture, marketing, HR, financial and legal, and production and technology)

This section includes a brief consideration of constraints on growth.

Section 2.5
Conclusions and justification for project (section 2.5)
Diagram 2 depicts the natural expansion of the literature review to encompass the most relevant sources of information. It also highlights the key stages at which relevance of literature to the research topic can be checked to ensure the review remains focused.

**Diagram 2: Simplified analytical classification model: outlining the approach to the literature review undertaken in this study**
2.1 Identifying and defining the research topic

Some initial considerations prior to defining micro and small business

Although big business and multinational organisations continue to play a leading role in terms of national production and employment, small firms also continue to grow in their importance. Small business is an elusive term. There appear to be as many definitions of small business as there are papers about how to explain, analyse, and help them. Defining the term will provide the best starting point for focusing the literature review and research topic.

Both the United States Small Business Administration (SBA 2005) and the Commission of the European Communities set size constraints in terms of employees and turnover, by industry, to define a small business. In general, the SBA defines a small business as one which has either fewer than 500 employees (manufacturing) or fewer than 100 (wholesale/trade). Turnover limits range from US$750,000 in agriculture up to US$28.5 million in general and heavy construction (except dredging). Business, personal service, travel and retail vary from US$4 million to US$6 million. The European definition provided by the Community (CEC 2005) is not split into industry type, however does limit small business to those with less than 50 employees and less than €10 million turnover. By way of contrast, other geographical areas where trade is traditionally bound to different circumstances such as smaller markets, and different cultures and economic situations the definition of small business tends more towards a micro scenario. The Sub regional Office for the Caribbean acknowledges that there is no universal definition for small business and that the best we can hope for is a comparative rule based upon number of employees, volume of output or sales, level of investment and turnover. Furthermore, there are more general considerations as to the type of ownership and business classification. For their own part, the Caribbean define a small business as having less than 25 employees and posting annual sales of less than US$125,000 (SOC 2000). To provide a final comparison, and to drive home the point that a generic definition of small business is far from reality, the Australian Small Business Coalition (SBC 2001) defines small business as being a non-public, independently owned and operated, business with less than 20 employees. Table 4 depicts the spread of the definitions mentioned and also serves as a means to compare them,
in a bid to obtain some form of generally applicable definition relevant to the case at hand.

**Table 4: Various definitions of small business**

<table>
<thead>
<tr>
<th>Origin</th>
<th>Employees</th>
<th>Turnover/sales</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBA (USA: SBA 2005)</td>
<td>&lt;500</td>
<td>US$6 million</td>
<td>Sole proprietor, partnership, corporation, or any other legal form</td>
</tr>
<tr>
<td>- Manufacturing</td>
<td>&lt;100</td>
<td>US$4-6 million</td>
<td></td>
</tr>
<tr>
<td>- Wholesale trade</td>
<td></td>
<td>US$28.5 million</td>
<td></td>
</tr>
<tr>
<td>- Business &amp; retail</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Construction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commission of European Communities (CEC 2005)</td>
<td>&lt;50</td>
<td>€10 million</td>
<td>Autonomous, partner and consolidated enterprises</td>
</tr>
<tr>
<td>Sub regional Office for the Caribbean (SOC 2000)</td>
<td>&lt;25</td>
<td>&lt;US$125,000</td>
<td>Formally classified, privately owned</td>
</tr>
<tr>
<td>Australian Bureau of Statistics (ABS 2005)</td>
<td>&lt;20 full time equivalent employees (FTE)</td>
<td></td>
<td>Not subsidiaries of other companies, not public, not unincorporated cooperatives, not incorporated associations.</td>
</tr>
<tr>
<td>Small Business Coalition (Australia) (SBC 2001)</td>
<td>&lt;20</td>
<td></td>
<td>Independently owned and operated, not publicly traded. Owner personally guarantees business finance and owner has control over operations.</td>
</tr>
</tbody>
</table>

For the purpose of this study, the number of employees and company ownership will be used to guide the definition adopted by the author. Several other considerations also need to be addressed in order to derive a meaningful definition. They are:
Type of industry and environment adopted for the definition of MSE. The printing industry is traditionally craft-based. Although modernisation has seen a move towards large-scale production, there is still a multitude of small, family or sole owned printing plants within Germany and central Europe. Germany and central Europe do not approximate the American business climate as the market is much more localised due to language and cultural heritages. Markets for MSOPs are smaller, tending towards niche, and the array of print products on offer are becoming more and more specialised. Thus, European trends and definitions will prevail in this study as it centres on a case within Germany.

Average ‘small business’ in the print industry
The most recent statistics from the EU relating to printing in Germany reveal that of the 11,912 printing companies, 10,023 (approx. 84%) have less than 20 employees (BVDM 2005). This adequately supports the claim that small businesses are indeed crucial within this industry segment. In this regard, the definition of small business used in this paper will tend towards the micro/smaller company size limits, provided by the EU and Australia, as this better reflects a ‘typical’ small business in the field of offset printing within Germany.

Intended focus of the research problem
The research is focused upon a very narrow section of the market, namely offset printers. Their market, in turn, is very competitive and geographically limited as potential business is often confined to ‘local clients’. Small printers in this respect are not represented by the few large exceptions which survive due to economies of scale. Thus, the American definition of companies with up to 100 employees could be seen as somewhat unrepresentative in this application.

All things considered, and in an effort to draw some conclusions which will guide the remainder of the literature review and research project, the following definitions will be adopted and applied to the prevailing case circumstances.
Definition of small business used in this study:
A small business in Germany/central Europe would have no more than 50 employees, be privately owned by one person or a small partnership, not operate publicly, and have an annual turnover or no more than €5 million.

At this stage it is worth noting that a sub group of companies are now emerging which are defined as micro enterprises. For the first time, in its 2005 paper on ‘the Activities of the European Union for Small and medium-sized enterprises (SME) Envoy report’, (CEC 2005) the Commission for European Communities has recognised the essential role of micro-enterprises by providing precise financial thresholds and introducing specific support schemes to assist the development and growth of this type of firm. It defines a micro enterprise as one with fewer than ten employees and an annual turnover of less than €2 million. To further support this argument, the European Commission in its Observatory Report (EC 2003), emphasises that micro business now represents the ‘norm’ in Europe. The report states that there are 25,3 million non-primary private enterprises in the 28 countries of the European Union. Of these roughly 90% are micro businesses with less than ten employees. These micro enterprises are responsible for employing more than 53% of Europe’s workforce, and providing half of its overall turnover. It also states that the typical European enterprise is a micro business employing three people, and the average company size in Europe is one with five employed people.

This is an important fact to realise, however, due to the almost total lack of data related to this group of companies, the more general definition of small business will be adopted for this study.

In light of these findings, and the physical make up of the topic under consideration (offset printers), it would seem appropriate to formulate the following definition of the type of company which will be the focus of the research project.

Definition of the research topic, micro to small enterprise (MSE) used in this study:
A micro to small-sized enterprise (in Germany/central Europe) employing between 2 and 50 employees, being privately owned and managed by one person or a small group, not operated publicly, and procuring an annual turnover or no more than €5 million.

Section 2.1.1 of the literature review proves that offset printers do indeed fall within the scope of this definition. In addition to this, the following statistical review also serves to identify potential gaps in the existing research results available to this group of companies, as well as highlight the lack of assistance for offset printers. The evidenced gaps, together with the topic definition, will then guide the response to the research problems outlined in section 1.2.

**Justification: statistical details about offset printers in Germany and how this relates to the definition of the research topic.**

By way of introduction to this section, a note must be made about the overall lack of meaningful data for micro to small businesses. The major collators and disseminators of statistical data are the European Statistics Bureau (Eurostat/EUROPA) and the German Bureau of Statistics (Statistische Bundesamt/destatis). In both cases, the major reports are restricted in two ways.

a. Although data is collected from all firms, subsequent analyses are only based upon information from those companies with 20+ employees.

b. The breakdown of industry sector is not sufficient to assist specific segments of the printing industry. Print is parcelled with media and publishing. It is possible to separate print from the other major fields within each category but not further to obtain the different types of print i.e. offset, flexo and so on. More detailed splitting to business size within each type of printing class is also not possible.

Furthermore, the majority of other reliable sources of print-industry related reports such as FERI bank ratings, IKB print media reports and similar rely upon the core stats procured by the German Bureau of Statistics which do not reflect the important MSE market sector.
These factors represent a huge chasm in useful planning information for MSEs, and highlight a lack of formal statistical support, plus the need for attention. Researchers, such as Storey, (1994) and Davidsson, Kirchhoff, Hatemi-J, and Gustavsson, (2002), well-known for their works delving into the area of micro-small business also acknowledge this gap in statistical coverage and adjust their definitional basis of small business accordingly to acknowledge the ‘true state of smallness’.

Having raised this important issue, it is now possible to move onto a review of the ‘relevant’ statistics which help to frame the situation of offset printing within Germany/central Europe in an effort to establish its validity as a research topic before commencing a comprehensive review of the related literature.

At the time of completion of this thesis the latest figures from the Statistische Bundesamt were those released in 2004 based upon information from 1992-2002. The following information is a summary of that data, plus additional branch information collated by the Bundesverband Druck und Medien (BVDM) – the German association for Print and media.

The print industry in Germany is classified as a middle-sized industry employing roughly 197,000 people in roughly 12,400 companies. Of these companies approximately 94% have fewer than 50 employees.

In their print industry report released in April 2004, the German industrial bank, Deutsche Industriebank (IKB 2004) estimated that offset printers represented around 65% of the overall printing industry. Within this estimate roughly 10,000 (98.7%) offset printers were said to be sheet fed and 130 web/roll offset. Furthermore, sheet fed offset printing is typically the type of set up a small company would have as it offers greater flexibility in terms of paper size and format, and higher print quality.

Thus, it can be seen that offset printing is not only an important part of the overall printing sector, but is closely aligned with small sized operations. While this data is specifically based upon German studies, there is a trend towards similar results within Europe as indicated by the euro stats data provided earlier, and more general market intelligence gathered and observed by the researcher at large trade
gatherings such as DRUPA 2004, one of the world’s largest print expos held in Düsseldorf, Germany every four years.

For the purpose of this study, all discussion of micro-small offset printers (MSOPs) will refer to those operating within the German market.

In this sense, the worth of the research project has now been firmly established in that:

- offset printing does indeed fit into a MSE classification, and such firms have notable influence in the overall market, plus

- there is an obvious lack of formal data available to MSOPs for planning purposes.

Further considerations which have led to the selection of this research topic include, but are not limited to:

- the increasing cost pressure on offset printers,
- raising insolvency rates, and
- lack of innovation and differential pricing practices adding further to the cut pricing mentality

To finalise this section defining and justifying the research topic, a brief discussion outlining the supposed, general issues faced by micro-small offset printers will be presented.

2.1.1 General issues facing micro-small offset printers
Prior to commencing formal research, it was necessary to conduct several informal interviews and attend various trade shows and events. These experiences served well to frame the key area of the research project. While focusing upon small offset printers, the feedback polarised itself quite quickly into companies which were surviving due to cost cutting strategies or seemingly continual innovation, and those which were exiting the market due to financial and competitive pressure. In a notable amount of cases the companies were often well established. The message from the market was clear. Things could not proceed in the direction they were headed,
otherwise German offset printing could suffer by potentially being replaced by cheaper (and equally quality oriented) companies from either the Eastern Europe or Asia. This message is supported by several bank forecasts released at the time (ING 2004, FERI ratings June 2004) which rated printing companies in terms of investment risk with a D- (AAA is the highest and E- the lowest). In its brief industry overview, the ING Bank goes as far as to state that the ‘German printing market is facing a lot of difficulties’. Also stating that sector production deceased 3% between 2000 and 2003 (ING 2004, p2).

Clearly, something was missing. Several questions arose:

- Why are offset printers failing?
- When are they failing?
- Do they need help? and
- What can be done to help them?

These questions lead to the development of the research questions. While each question above is worthy of review in its own right, this research project is based upon several presuppositions related to these questions.

1. Micro-small offset printers were failing due to many factors. To determine how, when, where and why they are failing is not within the scope of the research. Instead it is intended that the factors be brought into consideration via some management tool to assist the enterprises identify the trouble areas and react to them early enough, in accordance with their company’s capabilities.

2. The timing of business failure also varies. However, it is also not the intention of this study to determine such issues. Rather a focus will be placed upon existing or mature firms for reasons which will become clear as the review of the literature progresses.

3. The matter of needing help is clearly highlighted by the statistical information and the general market feedback. How to help, will be addressed by this study.
4. What type of help will become clear as the existing literature on MSE life cycles and growth is evaluated. In this way it will become clear when help is required and what form that help should take.

The remainder of this chapter will concentrate upon the review of the literature which forms the core of the study, namely MSEs and their survival and growth. The nominated parent field of research covering the study topic is related to growth (in modern business climates it could be argued – ‘survival’) models and issues at various stages of the company life cycle.

2.2 Review of the parent disciplines – small business growth models and company life cycle

Introduction
The secret of small companies’ survival, success, and growth remains to be uncovered. This is a well-researched and debated field of theory which can be traced back to the earliest attempts at trade. With few exceptions, humans have made it their business to improve their circumstances. Unfortunately or fortunately, in most cases, the major source of this ‘improvement’ is related to material possessions and the main method for acquiring material goods is via trade. Moral judgements aside, good trade is good business, which leads to better trade and better business. It can be argued that this process of improvement or betterment can be summed up as survival, success, and growth. While survival is a necessary prerequisite to existence, and success can be viewed as an arbitrary, and subjective, concept growth is more definable. It appears simple enough, define growth and the factors which facilitate, or deter, it and the code is cracked!

This concept is a simple, yet surprisingly elusive, aspect of small business planning. The difficulties associated with prescribing growth are well recognised. O’Farrell and Hitchens, (1988, p1380) state that at the time of writing their article on alternative theories of small-firm growth there was ‘no adequate explanatory framework within which to analyse the growth of the small owner-managed manufacturing enterprise’. They also highlight the fact that theorists use no standard dimension for growth as the object of analysis. In some cases growth is measured by employment, in others it ranges from profit measures through to turnover and sales. In this sense, growth
itself is often undefined, or as will be more the case in this study will refer more to business survival than rapid growth. Gibb and Davies, (1990) arrive at a similar conclusion following their own review of available literature. They express their disappointment regarding the level of knowledge, and knowledge usage in relation to small business growth. They state,

‘… there is no comprehensive theory of small business which clearly brings together all the relevant parameters into a model and indicates how each part interacts with the other.’ (Gibb and Davies, 1990, p26)

The paragraph goes on to say that, ‘The production of such a theory and explanation in the near future is unlikely’ (ibid).

More recently published works continue to reiterate similar sentiments. An interesting article by Meer, (2005) is based upon the fact that company growth has become such a topical and unattainable goal that companies are now setting ‘CGOs' or Chief Growth Officers into place as part of the senior management team.

As the concept of micro enterprises is relatively fresh in terms of European public policy and formal research, much of the existing information about company growth is targeted at small to medium sized businesses and may not be relevant or applicable to MSEs. To address this issue the latter part of the chapter will introduce a review of some related fields of theory, namely entrepreneurship, innovation, and complexity/contingency. These are aspects which perhaps better typify micro to small operational set ups and management styles, and should serve to balance the review by introducing somewhat wider considerations which are more relevant to MSEs.

The following chronological literature review outlines the major schools of thought on company growth, and the decades of attempts at cracking the code for growth.

Several useful and comprehensive reviews of extant growth theories and factors leading to growth have been reported by various authors such as Almus and Nerlinger, (1999); Curran, (1996); Gibb and Davies, (1990); McMahon, (1998);
O’Gorman, (2001); O’Farrell and Hitchens, (1988); Snuif and Zwart, (1994); Storey, (1994). These reviews provide lists of major growth theories divided into various schools of thought, as determined by each of the authors. They represent quite critical reviews of published research which attempt to explain the dynamics of small business growth. These key works, supported by others, will form the basis of the review to follow.

Several other notable examples of reviewed material exist and serve as a precursor to exploratory, action-oriented research. The outcome is similar to the reviews outlined above but only somewhat narrower in scope. For instance Dodge and Robbins, (1992) refer to the work of Churchill and Lewis, (1983) and the fundamental findings they produced on the problems faced by small firms throughout the various life cycle phases, as they build their own case for the link between life stage issues and growth/survival. Similarly, Choueke and Armstrong, (2000) refer to Alvesson, (1995), and their own prior work, in dealing with corporate culture and growth issues. These matters will be reviewed in the second part of Chapter two (section 2.4) as they are closely related to business growth and can be shown to have impact upon the growth and survival decisions of MSEs.

**Explanation of the approach to the review**

In order to facilitate analysis and review the various theories will be grouped into categories covering the major schools of thought. Two such well-reviewed, synthesised, categorical listings are provided by O’Farrell and Hitchens, (1988) and Gibb and Davies, (1990). These well-cited categorisations will be used as a basis for the list provided in this paper as they provide a structure for the review of growth models in general.

Initially, a review of the earlier work by O’Farrell and Hitchens, (1988) is undertaken and aims to set a general framework and prepare the reader for the more detailed analysis of growth models according to the more recent work of Gibb and Davies, (1990) which has been subsequently critically reviewed by authors such as Snuif and Zwart, (1994); McMahon, (1999); and Barringer et al., (2005). The reason for including, and briefly reviewing, the work by O’Farrell and Hitchens, (ibid) is that it, plus the work by Gibb and Davies, (ibid), provide an impetus to much of the
comparative growth model research which has taken place over the last decades. It also provides a solid statement of the criticisms of stage models. As such, it can be seen as a key to recent work on growth models, and provides a logical point at which to separate a chronological review of growth theories up to that point, from current topical views on small business growth. This is the intended rationale behind the literature review undertaken as part of this project.

Following the review of growth model theory, a review by Curran, (1996) introduces a broader perspective on growth, recognising that growth is an element of the greater issue of small business strategy. Curran's review provides an excellent bridge between the review of growth models as such, and the wider considerations which impact a company's survival and success. Following a review of Curran's findings, the final section of the chapter addresses the related topics of entrepreneurship, innovation, and contingency/complexity.

Review of growth theories
In terms of theories on company growth, O'Farrell and Hitchens, (1988) propose a four-group classification scheme within which the major theories and approaches up to that point could be classified. They imply that it is possible to classify existing growth drivers/models into four categories according to the parameters outlined below. The following review takes into consideration the comments and criticisms made by McMahon, (1999) who provides a clear analysis and evaluation of the above-mentioned categorisation adopted by O'Farrell and Hitchens. The various four types of growth indicators/drivers/models are split according to the details below.

- Static equilibrium theories.
  These theories are based upon economic indicators and require a firm to meet certain indicator levels.

  Examples of these types of growth models/guidelines are economic indicators and production and sales/profit targets.

  The emphasis seems to be on attainment of economies of scale and minimisation of long-run unit costs, little attempt is made to consider the non-economic drivers
of business growth (McMahon, 1999). McMahon goes on to acknowledge that industrial economic theories are useful adjucts to other explanatory frameworks, but are not really adequate as a broad conceptual framework for study, given their rationalistic/mechanistic features'. O'Farrell and Hitchens, (1988) also provide a critical review regarding these type of growth driving strategies, when they note that static equilibrium theories tend to be more suitable for larger scale operations where there is no prescribed limit to company size, and economies of scale can be pursued.

- Stochastic models
These theories, according to O'Farrell and Hitchens, (1988) are also based upon economic factors, however, they also acknowledge that many factors affect growth, and thus no dominant theory exists.

Examples of these types of drivers would include financial, as well as human resource, marketing and production indicators such as the level of employment, sales and order levels.

In essence they take into account wider organisational aspects which would seem more logical especially, in terms of smaller firms who are not necessarily focused on, or geared towards, achieving economies of scale. Indeed McMahon, (1999) gives due note to the worthiness of these type of indicators as they better reflect the holistic method in which owner-managers run their firms. However, he also notes the limited nature of pure numeric indicators to provide full explanations of the growth process in small to medium sized enterprises (SMEs).

- Strategic management perspectives
O'Farrell and Hitchens, (1988, p1373) state models which are classified as possessing a strategic management perspective:
‘…concentrate upon the identification of the owner-manager’s policies and strategies for the conduct and development of the business and their subsequent translation into managerial action that will lead to sustained business development.’
These types of business strategies are developed in accordance with the owner’s wishes, thoughts and desires in light of the opportunities and constraints he/she perceives exist for his/her business. In this way, these strategies will be partially determined by personal characteristics.

Examples of these type of theories related to what drives growth include: Maslow’s well-known hierarchy of needs (1954), entrepreneurial models regarding motivation for achievement such as that proposed by McClelland, (1965). These theories and models will be fully evaluated under the Gibb and Davies, (1990) framework yet to be outlined.

At this stage it is important to note that the models and theories are many and varied. McMahon, (1999) sums up the topical debate regarding these theories when he states that strategic management perspectives on SME growth are, in fact, rich almost to a fault in the explanations they attempt to provide. He goes on to observe that these type of models tend to become so multi-dimensional that they obscure the explanations given. In his view, simplicity and applicability are overlooked in favour of a zealous attempt to provide a comprehensive example of the growth phenomena. He concludes that strategic management explanations tend to include such difficult to measure concepts, and contingent specifications that they are rendered untestable in a practical sense.

At this point it is worth noting that a currently topical field of theory related to these type of models, is centred on the level of motivation displayed by entrepreneurs and owner managers to grow their companies. In terms of small business growth, especially MSEs, research is now showing that owners may not wish to grow beyond a certain point. Curran, (1996) states that growth is not a major priority of the typical owner-manager. The point that not all MSE owner-managers have either the desire or resource capability to grow their business has been identified by several notable researchers (Stanworth and Curran, 1976; O’Farrell and Hitchens, 1988; Davidsson, 1989; Turok, 1991; Glancey, 1998). McMahon, (1999) believes that marginal to comfortable survival is often an overriding strategic objective to growth. McMahon goes on to specify that the reasons for this perspective are varied, ranging from personal lifestyle wishes to a
disinclination to surrender control in order for the business to grow. The works of Davidsson, (1989) and Holmes and Zimmer, (1994), among others, support these views. This is an interesting point and will make an interesting adjunct to the planned study. Potentially, these concepts can be evaluated in an observational sense, during the research project, as the prospective case study company is a mature, owner-managed, micro enterprise.

• Phase or stage of development

O’Farrell and Hitchens, (1988) indicate that these models have their origin in economics, and consist of a series of stages or phases through which a company passes during its life cycle. McMahon, (1999) suggests that these have been the most prevalent form of growth models used by researchers, educators, policymakers and professionals.

The range of stage models available is great, and the nature and number of growth phases also vary. Several notable attempts have been made over the past decade to consolidate and synthesise the array of stage models and their presumptive bases, in order to provide more robust research which has both sound empirical and experimental grounding (Kazanjian and Drazin, 1989 and 1990; Hanks, 1990; Dodge and Robbins, 1992; Scott and Bruce, 1987). In general the concept of a company life cycle and various stages is postulated. The stages usually follow a biological analogy with conception/start up being among the initial stages and cessation or altered state being towards the end. Churchill and Lewis, (1983) provide one of the better-known stage models consisting of the five stages: existence, survival, success, take-off, and resource maturity. An in depth review of stage models will follow under the Gibb and Davies category discussion.

As it is such a debated topic, much discussion has taken place regarding stage models and their worth. O’Farrell and Hitchens, (1988) presents a comprehensive critique of stage models of SME growth/development which acknowledge the following weaknesses:
- Some models are little more than heuristic classifications and tend to address the symptoms of growth rather than revealing the underlying phenomenon. Snuif and Zwart, (1994) also acknowledge that the definition of various stages is also prone to problems and obscurities.

- Underlying theory is wisdom-based and tends to rely upon its own validity instead of establishing rigorous proof.

- Attempt to empirically validate stage models are often based upon small samples and cross-sectional data. McMahon, (1998) argues that longitudinal data would seem appropriate for assessing the growth factors of businesses.

- Stage models tend to assume that, as a rule, all companies go through all phases, more or less sequentially – or fail to do so. There is little recognition of phenomena such as life-style oriented and capped growth businesses as determined by the owner-manager. Regression is also often unaccounted for in most stage of the earlier model.

- There is often a failure to capture important ‘prior to start up’ phases.

- Company size, success and growth is often measured in terms of sales revenues, or number of employees, ignoring aspects such as innovation, product mix, and other measures of attainment.

- Stage models are often internally focused and pay too little attention to external factors in the social, economic and business sector.

Prior to this, similar critical reviews of stage models were presented by Stanworth and Curran, 1976; Perry, 1982; Churchill and Lewis, 1983; and Quinn and Cameron, 1983. Perry, (1982) highlights the need for growth models for small firms to consider the role and influence of the owner/manager in terms of that individual’s need for achievement, perceived locus of control, and energy levels to keep a company active and growing according to his/her wishes and motives. These issues will be discussed further in section 2.4. The critiques postulated by
Stanworth and Curran, (1976) presents similar concerns in terms of ‘realness’ and robustness of extant models. In response, they present their own social action model which is based upon the notion of changing motivations on the part of owner/managers. This concept leads into gestalt theory, or business stages, which will be discussed in more detail in the following review structured according to the Gibb and Davies, (1990) paper. However, at this point it is possible to conclude that O’Farrell and Hitchens, (1998) do summarise the general criticisms of stage models up to that point in time. Work postdating their review does attempt to address many of these concerns and will be discussed in the following section.

Following the work of O’Farrell and Hitchens, (1988), Gibb and Davies, (1990) published an extensive review of the various perspectives taken regarding the growth of small businesses. They specify four general approaches:

- Category 1: personality dominated approaches,
- Category 2: organisational development approaches,
- Category 3: business management approaches, and
- Category 4: sector and broader market led approaches.

Their review was spurred by a lack of cohesion, and in some cases relevance, amongst existing business growth research. According to Snuif and Zwart, (1994) this type of review and attempt at unravelling the various perspectives on growth provides an important first step towards developing an integrated framework for describing and facilitating small business growth. Snuif and Zwart provide an in depth review of Gibb and Davies and provide some interesting considerations of their own when reviewing the existing growth theory literature.

The above-mentioned approaches to growth, afforded by Gibb and Davies, (1990), provide a relevant categorisation for reviewing growth models for MSEs and thus will be used to guide the bulk of the historical literature/theory review.
Category 1: Personality dominated approaches
These theories assume that the growth of small firms can be explained by the personal characteristics of the individual(s) owning and managing the company. Most of these theories have their basis in the field of psychology. Rightly or wrongly, research from this field has been applied to business theory in an attempt to explain company behaviour as a consequence of various individual behaviour.

Davidsson, (1989) identifies four further sub groups within this category, namely

- hierarchy of needs (Maslow, 1954) assumes that humans have a hierarchy of needs ranging from basic physiological needs through safety, and social needs levels and up to the need for esteem and finally self-actualisation. Davidsson, (1989) postulates that having stabilised the business an owner/manager may be motivated to grow the company in order to fulfil higher order needs of esteem and self-actualisation. At this stage little or no empirical research exists to verify this hypothesis.

- Psychogenic needs theory as first postulated by Murray, (1983) is often referred to in related literature from the field of psychology. Much of the personality-related research falls back into the realm of entrepreneurship (McClelland, 1961 and 1965; Brockhaus, 1982; Begley and Boyd, 1987; Davidsson, 1989; Turok, 1991; Holmes and Zimmer, 1994). The need for achievement (nAch) is one of the key topics within this field and relates to the owner-manager’s need to achieve success (or an otherwise defined goal). It relates to the degree of perceived autonomy in aspects such as problem solving, goal setting, and goal attainment (Snuif and Zwart, 1994). In relation to growth theory the concept is the higher the individual’s need for achievement, the higher the degree of company success and growth. Mixed responses to these theories have been reported. Some studies have found a significant positive relationship between firm growth and the nAch (Hornaday and Aboud, 1971; Perry et al., 1988) while others have reported no relationship (Brockhaus, 1982; Begley and Boyd, 1987). The results are mixed and the overall usefulness and reliability of nAch as a predictor of firm growth has been questioned (Hornaday and Aboud, 1971, Snuif and Zwart, 1994). Chell, Haworth, and Brearley, (1991) also provide an assessment of
personality-based approaches and suggest that little progress has been made in isolating which characteristics/traits distinguish the entrepreneur from others in society. They also criticise these approaches for their apparent disregard for the context of the enterprise and its organisational, human resource and market situations.

- Locus of control theory (Rotter, 1966), relates to how strongly individuals perceive their own efforts as being instrumental in reaching their goals. Those who assume the consequence of their actions is dependent upon their own behaviour are said to have an internal locus of control. On the other hand those contributing the consequences of their actions to other causes are said to exhibit an external locus of control. In terms of business growth several works have found some linkage to internal locus of control and success. For example individuals with more internal locus of control tendencies are hypothesised to be able to generate a higher degree of revenue growth (Begley and Boyd, 1987), greater growth willingness is also tested as being true for internal locus of control individuals (Davidsson, 1989). However, an important study linking locus of control and actual firm growth failed to reveal a significant relationship (Perry, 1982; Perry, Meredith and Cunnington, 1988) and thus casts some shadow over this school of thought in relation to small business growth.

- Expectancy theory purports that behaviour is based upon a perceived outcome and subsequently on the relationship between the outcome and the goals of the individual. Snuif and Zwart, (1994) identify research in the field of risk taking as those providing the main contribution to this type of theory. The relationship between an individual's propensity to take risks is compared to his/her success rate. The discussion naturally gravitates towards entrepreneurs, and many studies attempt to measure the risk taking propensity of entrepreneur and business growth (Stanworth and Curran, 1976; Palich and Bagby, 1995; Glancey, 1998; Choueke and Armstrong, 2000; O'Gorman, 2001). Entrepreneurs are generally assumed to be moderate risk takers (Brockhaus, 1982). However, little evidence exists to establish a definite rule for defining what level of risk taking propensity accompanies
growth, and indeed whether or not this is a special attribute of small business owners. Begley and Boyd, (1987) fail to establish a significant relationship between risk taking propensity and revenue growth.

Other research has been conducted into the likelihood and influence of owner/manager’s experience and education to drive growth. Davidsson, (1989) provides evidence that business education and long term experience does relate positively to growth willingness and actual firm growth, based on data obtained in Sweden. Deakins and Freel, (1997) do acknowledge the complexity of the concept of growth and provide evidence that states that entrepreneurial learning is experiential, valuable and positively related to business success. Turok, (1991) on the other hand found little support linking personal characteristics of entrepreneurs such as employment history, education and training, age, and prior work experience to a company’s growth or chance of success.

Thus, in weighing up the evidence, O’Farrell and Hitchens state that ‘research findings linking entrepreneurial personality and growth are highly tentative’ (1988, p1377). A statement which can be easily supported via the conflicting findings related to personality traits and growth, presented throughout the literature. Furthermore, based upon their research findings, Barringer et al., (2005) claim that owner/manager’s personality attributes to only part of the mix of factors which leads to growth in small businesses. Thus, due to a lack of conclusive evidence, and continued debate amongst scholars, care must be taken when attempting to translate personality traits into key success indicators, in isolation from other considerations, which impact small business.

Category 2: Organisational development approaches
Gibb and Davies, (1990) identify four sub categories within organisational development approaches.

- Stage of growth (or life cycle) models is perhaps the most widely reviewed of them and provides a good starting point for discussion in light of the points raised earlier by the work of O’Farrell and Hitchens, (1988).
McMahon, (1998) points out that the concept of an enterprise life cycle has its origins in early economic literature (Marshall, 1890; Penrose, 1952 and 1959, Rostow, 1960). The fundamental works of Edith Penrose in her studies of the Hercules Powder Company (1960), and subsequent theory on the growth of the firm encapsulate many aspects which research is, in fact, proving to be true. However, organic growth and Penrose’s rejection of biological analogies within companies regarding their growth, were influential in terms of life cycle theory. Organic growth is again becoming a topical issue as researchers become frustrated with the lack of a panacea to prescribe the conditions for business growth. Meer, (2005, p13) states that ‘In recent months, organic growth has risen to the top of the corporate agenda. A Marakon survey in April 2004 found that organic growth is the key issue for 59 percent of the senior executives running US, European and Asian companies’ (Meer, 2005). Organic growth is an issue which, by its very nature, suggests contingency and the need for flexibility. This point was made clear by Penrose in her writings when she offered an alternative to economic theories of growth, but at the same time was wise enough not to dismiss them as incorrect or incomplete and acknowledge the shortcomings of drawing purely organic analogies to company growth. In fact, her ultimate response and contribution to learning can be thought of as a door opener on growth theory, in that it highlighted the fact that no one approach was either correct or incorrect, it was simply contingent. This is a vital point for future research and discussion in the field of growth models for MSEs.

Following on from the work of the early economists, Kimberly and Miles, (1980, p ix) mention the cyclical quality of organisations, stating that ‘they are born, grow and decline. Sometimes they reawaken, and sometimes they disappear’. This again invokes a biological metaphor for organisational existence which in itself is the source of much controversy. Adizes, (1979) also develops a life stage model based upon a human development analogy. These rather extreme biological company growth and development theories will now be reviewed in conjunction with the major stage theories presented in the literature to date.
Many reviews of growth-related literature have been produced. McMahon, (1998) provides and exhaustive list of such reviews covering the works of Steinmetz, (1969); Greiner, (1972); Thompson, (1976); Adizes, (1979 and 1989); Kimberley, (1979); Gailbraith, (1982); Perry, (1982); Churchill and Lewis, (1983); Kazanjian, (1988); Kazanjian and Drazin, (1989 and 1990); Dodge and Robbins, (1992); Hanks et al., (1993); and Hanks and Chandler, (1994). These reviews focus specifically on explanations of SME growth, based on life cycle stages. Of these, Hanks et al., (1993) serves as a concise example, whereby they critically evaluate much of the prior research and attempt to ground business life cycle stages in empirical observation. Before presenting their own findings they review ten existing enterprise life cycle models. The selection of models was based upon the rationale that some models served a summary purpose, some models were new and held fresh unsynthesised ideas, one model was set as a baseline, and one model was relevant to the study in that it dealt with hi-tech companies. It would enrich the literature review of this study to briefly note these models and consider the findings of Hanks et al., (1993).

i. Baseline model

- Greiner, 1972: stage model consisting of five distinguishable phases of development i.e. creativity, direction, delegation, coordination, and collaboration. Each of which contains a calm period of growth ending in a management crisis. Each evolutionary period or period of growth is characterised by the dominant management style used to achieve growth. Each revolutionary period or period of change is characterised by the dominant management problem that must be solved before growth can continue.

ii. Summary models developed to achieve some synthesis among competing life cycle models

- Miller and Friesen, 1984: five stage model comprising birth, growth, maturity, revival, and decline. Where each stage is
identified by various complementary variables of environment (situation), strategy, structure and decision making methods and a firm could identify these and act accordingly. It is also important to note the works produced by Miller, (1981 and 1987) regarding gestalts or ‘patterns of strategy and structure’. These gestalts can be seen as configurations representing common organisational structures, common scenarios of strategy making in context and common developmental-transitional sequences (Miller and Friesen, 1984). The gestalts theory was tested empirically, in a longitudinal study of new-tech ventures in the USA, by Kazanjian and Darzin, (1989) and found ‘modest’ support for the hypothesis that some technology-based new ventures tend to progress according to a predicted pattern. They conclude that their study provided only partial support for stage of growth models but did ‘point the way to an interesting possible synthesis of the stage of growth and gestalts perspectives’. (Kazanjian and Darzin, 1989, p1499) This highlights the potential for future research to focus upon certain stages rather than an overall sequential progression through nominated stages.

- Quinn and Cameron, 1983: developmental four stage model which states that changes which occur in organisations follow a predictable pattern and can be characterised by developmental stages. The stages are entrepreneurial, collectivity, formalisation, and elaboration of structure. They are sequential in nature, occur in hierarchical progression (which is not easy to reverse) and involve a broad range of organisational activities and structures. The model prescribes a number of bases describing the changing characteristics of organisations. These bases range from cognitive orientations to organisational structures and environmental relations (Hanks et al., 1993).
Smith, Mitchell and Summer, 1985: stage model consisting of inception, high growth, and maturity followed by optional diversification or decline. The model presupposes regularities in organisational development which can be divided into stages or periods of time.

iii. Current models which had not, at that stage, been synthesised into other summary models

- Adizes, 1989: stage model comprising the biological-like phases of courtship, infancy, go-go, adolescence, prime, and stable. The company is viewed as being similar to a living organism, going through normal struggles and difficulties. This theory states that a company learns to deal with these transitional problems or it develops an ‘abnormal disease’ which deter growth. It is one of the few earlier models which deals with the decline and death stages and suggests moving from stage to stage is achieved through a combination of four activities: producing results, acting entrepreneurially, administering formal rules and procedures, and integrating individuals into the organisation. Companies progress through the life cycle by adopting the correct actions at the right times to solve the prevailing problems before moving onto the next stage.

- Churchill and Lewis, 1983: five stage model previously outlined which comprises the stages of existence, survival, success/disengagement or success/growth, take-off, resource maturity. Each stage is characterised by an index of size, diversity, and complexity and described by five management factors i.e. style, structure, extent of formal systems, strategic goals, and owners involvement in business.

- Flamholtz, 1986: stage model comprising of the following organisational tasks or states: new ventures, expansion, professionalisation, consolidation, diversification, integration,
decline. These tasks are critical in determining whether an organisation will be successful at any particular stage of growth. Problems will arise if an organisation’s internal development is too far ‘out of step’ with its size. The greater the incongruity between these two aspects the greater the probability of ‘growing pains’.

- Scott and Bruce, 1987: five stage growth model comprising inception, survival, growth, expansion, and maturity. As a firm moves from one stage to the next there will be change which will be accompanied by a crisis. The recommendation is for managers to be proactive to minimise the crisis and facilitate fast change to reduce the level of associated disruption.

- Kazanjian, 1988: stage model consisting of conception and development, growth, and stability. This model deals with the problems associated with various life cycle stages and uses the problems, their occurrence and sequential nature to identify growth stages.

iv. Model for high-technology settings

- Gailbraith, 1982: stage model whereby the stage of (product) development and the business idea determine the basic task to be performed. Different tasks require different structures, decision processes, reward systems and people in order to complete them. Each dimension is interconnected. The tasks identified by the authors are: proof of principle or product prototype, model shop, start up and volume production, natural growth, and finally strategic manoeuvring.

Based upon this analysis, Hanks et al., (1993) were able to identify a taxonomy relating to growth models. Through the use of exploratory cluster analysis of cross-sectional data obtained via 133 mailed questionnaires to manufacturing SMEs from hi-tech industries in the USA, they propose a life cycle model comprising four
developmental stages and two disengagement (or arrested development) stages. They describe the various life cycle stages as:

- **Start-up:** where companies are typically young, small and have a mean of 2.2 organisational levels. Little functional specification exists and product development forms the focus of the company.

- **Expansion:** slightly older and larger enterprises with more complex organisational structures and a mean of 3.18 organisational levels. Functional specialisation is developed and marketing or product commercialisation is the focus of company activity.

- **Maturity:** age plays less of a role as firms in this stage can be as old as those undergoing expansion, however, they are on the average larger, typically twice the size of companies in the expansion stage. There is a mean of four organisational levels and centralisation is declining and formalisation is increasing.

- **Diversification:** enterprises are generally medium sized and show an increasing tendency to have divisionalised structures. There is a mean of 5.7 organisational levels and centralisation is low.

Hanks et al., (1993) and indeed other growth theories reviewed (Miller and Friesen, 1984), exclude a stage of decline. The reason, as provided by Hanks et al., (ibid) is that decline can occur at any stage of the business life cycle and is not specifically a stage in itself. This is a logical and valid argument worthy of further research.

Hanks et al., (1993) also include two stable and sustainable disengagement options/possibilities in their model. Where growth is kept at a constant or is constrained due to the wishes of the owner/manager. These two configurations are lifestyle and capped growth. Lifestyle is typified where the owner consciously chooses to keep the company small and sustain his/her given lifestyle. There is a disengagement from growth at the point where enterprise viability is established, usually at a small size. The second of these stages, capped growth, also
acknowledged in the work of Holmes and Zimmer, (1994). The authors relate this concept to Churchill and Lewis', (1983) ‘success-disengagement’ stage whereby the company attains true economic health, has sufficient size and market penetration to ensure economic success and earns average to above-average profits. Excluding environmental changes affecting its market niche, or poor management, the company can remain in this state continually. These points are supported by current researchers such as Glancey, (1998); McMahon, (1998); Almus and Nerlinger, (1999); O’Gorman, (2001); Barringer, Jones and Neubaum, (2005). In essence they all concur with the fact that micro-small enterprise owners have personal agendas which often determine the direction of, and limit to, company growth according to individual wishes for a certain lifestyle standard. These matters are vital considerations in future research regarding growth tools for MSEs.

The previous review of O’Farrell and Hitchens, (1988) provided an overview of the major criticisms of lifecycle models. Stage models do have their obvious limitations. Penrose, (1952) herself noted the futility of purporting enterprise life cycle analogies without robust, empirical backing. In the following statement Penrose sums up the life cycle/growth dilemma very well:

‘The desire to draw biological concepts into the explanation of social affairs is hard to understand since for the most part they add to rather than subtract from the difficulties of understanding social institutions.’ (1952, p 818)

All of the research on stage models which has been reviewed for this study ends in the same way. Without exception, all reports and papers concluded that fitting a life cycle model to a company to determine and guide growth was a complex, if not impossible task. All research recommends further research, and provides lengthy and adequate criticism of the theories to date. On this, theorists can agree. Theorists also agree that prior work is always a stepping stone to learning and developing new ideas which may one day provide the key (or otherwise) to company growth. And so, the work on stage models continues.
Category 3: Business management approaches

The inherent difference between small and large firms is visible in reality, via business strategy, as well as being clearly acknowledged in theory by early economists through to current scholars (Glancey, 1998; McMahon, 1998; Wennekers and Thurik, 1999; Choueke and Armstrong, 2000; O’Gorman, 2001; Beaver, 2003; Frost, 2003; Hutchinson, Quinn and Alexander, 2005). Small firms have different needs, serve different purposes, and are run accordingly.

Business management theories take into account the various types of business strategy and structure used by firms, in particular which aspects therein lead to growth. Examples of such management approaches include: financial ratio analysis, product and market planning, and strategic or operational planning. However, according to Gibb and Davies, (1990) it is not often clear how these practices influence firm growth. They argue that at very best, planning increases strategic awareness, which in turn may lead to better performance and growth (Snuif and Zwart, 1994). The categorisation can be compared to the ‘Strategic management perspective’ identified by O’Farrell and Hitchens, (1988) which, as outlined previously states that small company growth is contingent upon the ability of the owner/manager to adapt the organisation to its external environment. This can be viewed in terms of two separate approaches, i.e. business strategy and company structure.

a. Business strategy

O’Farrell and Hitchens, (1988) define three levels of strategy:
- corporate,
- generic competitive, and
- functional

Corporate or business strategy, as outlined by Gibb and Davies, (1990) pertains to products and customer groups. The product-market expansion grid, as proposed by Igor Ansoff, (1965), highlights three intensive growth strategies and a diversification strategy in terms of the age of products and markets in relation to each other. Managers firstly consider whether it is possible to gain more market share via existing products in existing markets (market penetration strategy). The next step is to determine whether it can find or develop new markets for its existing products.
(market development strategy). The third consideration is if it is possible to develop new products to suit potential needs of its existing market (product development strategy) and finally it may have the option to evaluate the worth of developing new products for new markets (diversification strategy). Diagram 3 depicts Ansoff’s model.

**Diagram 3: Ansoff’s product/market expansion grid**

<table>
<thead>
<tr>
<th>Current Products</th>
<th>New Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Markets</td>
<td>1. Market penetration strategy</td>
</tr>
<tr>
<td>New Markets</td>
<td>2. Market development strategy</td>
</tr>
</tbody>
</table>

Snuif and Zwart, (1994) conclude that small companies, due to their limited resources, are commonly recommended a ‘niche’ corporate strategy. This highlights a need to focus upon a limited number of specialised products thus/or fill the gaps in the market which are less attractive to larger organisations (Perry et al., 1988). In light of this, Perry et al., (ibid) claim that growth seeking small firms should initially pursue market development strategies, and then turn to product development. In response to this, authors such as Cooper, Willard and Woo, (1986) indicate that following a niche strategy does not automatically exclude competition from larger business in fact, it may do just the opposite and attract larger business to an otherwise untapped market. Several other models exist which assist management determine the correct business strategy to undertake in terms of marketing or other business sectors such as HR, production and development and so on. However, it is beyond the scope of this paper to review each specific divisional management tool, but rather to provide an overview of the major groups of models and their strengths and weaknesses.
Generic competitive models/strategy refer to the way a business competes in the marketplace. A well-known example is Porter’s competitive strategy (1980). Porter contends that a company follows one of the following, mutually exclusive strategies: low cost, differentiated, or focused. Other authors such as Hambrick, (1983) argue that these strategies do not necessarily need to be mutually exclusive and, in fact, in viewing them as such, a company may run the risk of losing a competitive advantage to be had by say a focused- differentiation strategy. The evidence confirming small firm growth to be a consequence of corporate and generic competitive strategies is, and remains, unclear.

The final sub group of business strategies to be reviewed by Gibb and Davies, (1990) are identified as functional strategies. These strategies have a much more ‘realistic’ base than either corporate or generic competitive strategies (Snuif and Zwart, 1994). They are focused upon the decisions and evaluations (both internal and external) necessary to ensure a companies survival. All managers make decisions regarding functional aspects of their business such as pricing, promotion, production procedures, sources of finance, personnel and others, these in turn are said to influence growth. This school of thought bears some resemblance to the more proposed gestalts theory of Miller, (1981); Miller and Friesen, (1984); Kazanjian and Drazin, (1989), as it opens a wider organisational and environmental aspect to the discussion of potential factors affecting and facilitating growth. The earlier work of Katz and Kahn, (1978) can also be viewed as a stage model which relates organisational structures to various business stages and external environments.

More function-related studies such as those by Brophy and Shulman, (1993) look into financial factors which stimulate innovation and growth. Hatton and Raymond, (1994) review the concept of small business effectiveness in terms of congruence with key functional operations of the organisation in an attempt to describe key growth factors at various life style stages. The relevance and importance of business functionality and MSE survival and growth does require further attention, and will be discussed further in section 2.4 as part of the complexity and contingency considerations and circumstances faced by MSEs.
The sub group of theory dealing with appropriate strategies for growth is rich, and draws its stimuli from many related fields such as economics, entrepreneurship, innovation, and small business management in general. In light of the intended chapter closure no further, in depth, commentary on functional strategies will be undertaken, suffice to say that the research to date in this field is as inconclusive as that in other, previously discussed categories. Strategies leading to growth provide useful clues and considerations but, as yet, there are no real empirical solutions or keys to what makes a MSE grow.

b. Company structure
Over time various ‘ideal or recommended’ structures have been evaluated in terms of determining which has positive/negative influence on growth and to what extent that growth will evolve. One can argue that these theories have tended to reflect the prevailing environmental and economical climates at the time of their proposal. This concept is not that absurd when one confers with a wider view of the factors affecting growth. The external environment plays a role in determining the survival and success rate of a firm, especially a small company with little to no influence over these matters. These theories (or prescriptions) have ranged from The ‘mechanistic/organic’ structure theory by Burns and Stalker, (1961) which states that more mechanistic structures are appropriate in predictable environments and more organic structures are called for in less predictable environments. Similarly the Pugh and Hickson, (1976) study identifies five primary variables usually shown in an organisational chart (specialisation of functions, standardisation of procedures, formalisation of documentation, centralisation of authority and shape of the authority structure). As a firm grows, the interplay between these structural variables is said to vary accordingly. Hofstede, Neuijen, Ohayv and Sanders, (1990); Hofstede, (1991); Barringer et al., (2005) present interesting works on the role of culture in terms of the small organisation and the national or environmental culture as a shaper of organisational structure and ultimately the chance of success and growth. Work conducted by Choueke and Armstrong, (2000) also sheds some light on the concept of culture. However, these researchers found that it was more a matter of hindsight. They admitted that their study did include mainly ‘successful’ companies that were able to identify aspects of their culture, but could not pin point elements for success. Furthermore, their research, and that of others (Deal and Kennedy, 1983; Alvesson,
1995), indicates that the concept of culture itself is difficult to define because ‘a company’s culture’ is often intangible and implicit i.e. taken for granted. It may be argued from the review to date that MSEs are somewhat advantaged in this respect as the owner/manager is often the one attributed with setting the company’s culture and thus the issue becomes easier to pin point and evaluate – or does it? In any case, this is an important aspect with which future researchers should concern themselves.

Category 4: Sectoral and broader market led approaches
The final category of approaches toward the growth of micro-small companies, as identified by Gibb and Davies, (1990) is centred on industry and location considerations. Environment conditions have, and continue to, received a good deal of attention by researchers (Snuif and Zwart, 1994; Glancey, 1998; Wennekers and Thurik, 1999; Davidsson et al., 2002). Some authors link several variables including location and industrial concerns (Davidsson et al., 2002) as growth determinants. The underlying hypothesis is that in some environments (for smaller firms – locations) it will be easier to achieve growth. Indeed some support for this hypothesis has been found. Each of the studies mentioned above can attest to some positive relationship between location/industry and growth, in that a company which sets itself up in a high growth industry or a growth area will enjoy some level of growth stemming from its surroundings. These considerations are important for new firms and firms on the point of relocation but may prove less useful for mature firms physically ‘stuck’ where they are due to extenuating circumstances (i.e. leases, lack of suitable alternatives). It is never-the-less a valuable point for further consideration and investigation.

The preceding review serves to show the complexity and richness of the field of MSE growth. It also begins to hint at wider issues such as founder characteristics, innovation, contingency and complexity, and other theoretical fields which impact the core subject of growth models. We will now step onto a bridge provided by Curran, (1996) which frames growth models within the wider scope of business strategy and, as such, introduces further considerations.
2.3 The bridge between the parent discipline and related fields

The following section will complete the focused review of the factors influencing MSE growth, in terms of this study. These factors, in turn, help structure the ensuing research conducted with the aim of addressing the research questions outlined in section 1.2. This section reviews growth in terms of small business strategy. By doing so it is possible to open the review beyond the immediate field of reference. In essence, this short section will provide a bridge between the review of the parent discipline (growth theories) and the related, and important areas of theory including entrepreneurship i.e. small firm leadership, innovation, and a brief reference to the concepts of contingency and complexity.

Growth is more than just an element within a model, or a list of factors which must be addressed at certain points throughout the ‘life’ of a company. A broader perspective is required. Curran, (1996) provides a wider perspective in his review of small business growth in terms of general business planning and strategy. His views take into account more than just prescriptive growth models and indicators. In an attempt to define growth methods appropriate to micro-small business, Curran, (ibid) opens his analysis to cover various approaches to business strategies. Before he provides actual suggestions regarding the types of strategies and plans which would be applicable and useful to aiding small firm survival and growth, he summarises some key hindrances to the formulation and adoption of strategies by small business owners. These points raise important issues for future researchers and theorists and can be defined as follow.

- Many small business owners may have neither the time, skills, or inclination to plan, due to management overload, which in turn gravitates towards short time horizons and confined planning conditions.

- Company ownership is often outright (no shareholders) therefore there is no legal requirement or necessity to demonstrate long-term strategy to others.

- On a skill level, many micro-small business owners have typically little formal training in formalised business management techniques. Furthermore, most
formal training is geared towards executives in larger enterprises (Hess, 1987). An important point highlighted in this analysis is that…

‘… many formal business strategy models stress adopting plans and policies to manipulate the environment in which the business operates, but small business owners may feel this unrealistic because they typically face very risky business environments with little power to influence them.’ (Curran, 1996, p 4515.)

Finally, based upon psychological profiles of the small business owner (Chell, Haworth, and Brearly, 1991) they are shown to typically believe in an instinctive flexible management style, not at all congruent with the development of long-term plans.

Following this, Curran, (1996) - supported by the work of Mintzberg, (1994) - distinguishes between deliberate and realised strategies. Deliberate strategies are formalised and aimed at achieving future outcomes. Realised strategies, on the other hand are the actual outcomes, or reality, based upon the mix of aims and actions from the original plan acted out in response to planned and accidental events occurring during the planning period. This type of planning requires emergent strategies which are developed to cope with unexpected events. They can either be outright plans in themselves, or modifications of the original formal plan. Mintzberg, (1994) argues that in the real world few strategies are entirely deliberate or purely emergent. As strict adherence to either could entail lost opportunities. Furthermore Curran, (1996) purports that models and plans which allow for less explicit rationality and increased flexibility, are seemingly much easier to apply to (and for) the small business owner. Such strategies appear to recognise and accommodate a micro-small enterprises lack of control over the environment, plus allow for the psychological attributes of small business owners.

This is a major point for future research. Although the concepts seem logical and forthright, they are often given a cursory note in theory due to their complex nature and difficulty to communicate in a conceptual sense. Perhaps the issue lies less in capturing the principles and more in ‘setting them free’ to better simulate the real world.
Curran, (1996) thus encourages us to open our field of vision, in light of what we have learnt, and attempt to consider reality - rather than simplify it.

Section 2.4 will now briefly consider some of the more relevant aspects of micro-small business in relation to survival, success and growth to provide a wider perspective for answering the research questions outlined in section 1.2. The specific fields of theory which will be briefly acknowledged are listed below. Although they are by no means exhaustive nor universally applicable (after all this is reality), they do serve to introduce wider considerations which should be taken into account by MSEs.

- entrepreneurship,
- innovation, and
- contingency and complexity in terms of MSE management

### 2.4 Relevant, related fields of theory to growth models

Reviewing MSE success and growth in terms of business planning and strategy, introduces many aspects of small business which impact not only success, but also mere survival. A MSE has less influence over external factors but nevertheless must take them into account as the environmental setting is reality. By stark comparison, internal aspects of small business are well known and documented. Perhaps the most relevant of these is the entrepreneurial style in which most small firms are lead. As MSEs often deal with niche markets and provide niche product/services, continual innovation is a necessity and luckily also an attribute of many small firm owners. Hence any attempt at developing a useful management tool for MSEs must recognise the impact of the leader, including his/her attributes, the level of innovation as a means for survival and success, and the overriding relationship between such firms and the environments within which they operate. In this respect, the following fields of theory will be reviewed: entrepreneurship, innovation, and the concept of contingency and complexity in terms of MSE management.

The ensuing review is intended to introduce the relevant issues raised by theorists in these areas, and thus spur further consideration and recognition throughout the analysis and documentation of the findings and recommendations of the study.
Entrepreneurship

As entrepreneurship, and the associated behaviour, is not simple to define, models of small business growth are much less well formulated than stage models (Chell et al., 1991). Much of the literature on entrepreneurship deals with establishing a ‘list’ of attributes paramount to being a successful entrepreneur (Curran, 1996; Llewellyn and Kerry, 2003). Literature on entrepreneurship can be seen as dichotomous. On one hand, relating to conceptual approaches which place importance on the effect of the environment, market opportunity and co-ordination of resources in determining an entrepreneur’s success rate. On the other, relating success to psychological approaches which view entrepreneurial success as a factor of individual personality traits (Deakins and Freel, 1997; Boyd and Begley, 2002; Barringer et al., 2005).

Defining entrepreneurship, in great detail, is not necessary in the context of this study although numerous definitions exist which range from a listed classification of ‘must have’ attributes to rich and comprehensive narratives. Wennekers and Thurik, (1999) provide a list of 13 different roles attributed to entrepreneurs throughout the history of economics which includes one who assumes risk, a supplier of financial capital, an innovator, a decision-maker, an industrial leader, a manager or superintendent, a coordinator of economic resources, the owner of an enterprise, an employer of factors of production, a contractor, an arbitrageur, an allocator of resources, and a person who realises the start up of a new business. Herbert and Link, (1988, p 47) offer the following synthesised definition of an entrepreneur and his/her role

‘The entrepreneur is someone who specialises in taking responsibility for and making judgemental decisions that affect the location, form, and the use of goods, resources, or institutions.’

In terms of this study, understanding management practices of MSEs requires an appreciation of the psychology and perceptions of their owners. These owner/managers often fall into the category of entrepreneurs (Beaver, 2003). Thus, this section rightly introduces the major aspects of entrepreneurship in terms of MSE growth.
Wennekers and Thurik, (1999) define two major roles in which entrepreneurship and economic growth are linked. The first is that entrepreneurs often start-up new ventures or business units within large companies (which is not the focus of the paper). Secondly, they are often responsible for transforming inventions and ideas into economically viable entities i.e. innovation. In terms of risk, Gilmore, Carson and O'Donnell, (2004) suggest that entrepreneurs use managerial competencies and networking to manage ‘risky situations’ which they identified as those pertaining to cash flow, company size, entering new markets or new areas of business and entrusting staff with responsibilities.

However defined, entrepreneurs usually are associated with moderate risk taking, innovation, being providers of capital, and as possessing a need for autonomy and the right to decide their own destinies and usually that of their firms, as well as being networkers (Birley, 1985).

It is Curran, (1996), however, who points out that simply being or emulating an entrepreneur, although the typical style for owner/managers of MSEs, does not equate to a theory for small business strategy and growth. This view stemmed from the work of Stanworth and Curran, (1976) regarding small business growth and the entrepreneur’s latent social identity. Many researchers have identified the phenomenon that few owner/managers and entrepreneurs make financial gain their primary goal (Stanworth and Curran, 1976; Storey, 1994; Deakins and Freel,1997; Glancey, 1998; Beaver, 2003; Gilmore, Carson and O'Donnell, 2004). This is a significant aspect when considering the importance of growth to MSEs, especially in mature companies.

This section concludes with a brief summary of the salient points regarding the research topic and some thoughts provided by Beaver, (2003, p65)

‘There is a range of entrepreneurial and owner/manager identities that result in different management styles and priorities. Such identities will be conditioned by the type of economic activity, the operating environment, interpretations of success criteria, the period of establishment of the firm and whether the key players are first generation or those that have inherited ownership.’
Entrepreneurship, in itself, is not something which can be defined or predicted. Without a doubt, it is a key factor which influences MSE management and policy direction, but is neither straightforward nor prescriptive. Furthermore, it is not always congruent to business growth. In some cases it may even dictate an upper limit to company growth, depending upon the owner’s wishes and lifestyle choices. This is a very important consideration for any future research in the field of MSE growth.

**Innovation**

Creative, imaginative, different, original, proactive, visionary, innovative … that’s all it takes to be successful! Again, very difficult tasks to define, and what’s more produce on an ongoing basis, as is necessary to ensure business survival, success and growth. Innovation can be seen as a prerequisite to micro-small business as it often forms the core product/service/concept upon which the company is grounded.

This section will not even attempt to broach the vast array of literature and knowledge regarding innovation. Innovation and the role it plays in business success is evidenced and generally regarded as positively related. Whether innovation is discrete or inherent in organisational learning as proposed by Deakins et al., (1997) it can be viewed as a desirable attribute leading to the development of growth opportunities. As such, it is possible to delimit the emphasis placed upon innovation as a necessary and ongoing ‘must’ for MSE growth. It is, after all, unrealistic to expect continual innovation and creativity, or is it?

Jovanovic and MacDonald, (1994) suggests that innovation stems from scientific discovery or invention. Innovation is, in their view, the competitive and successful business’ response to invention. Innovation is thus the impetus and key to growth. Audretsch, (1995) provides empirical support for the fact that innovation is a vehicle for market entry and paves the way for product differentiation. He also notes that the cost of innovation is a matter for consideration, especially valid for MSEs with limited funds. O’Donnell et al., (2002) evidenced that small firms used innovation as a method to avoid price competition. Gehrke and Grupp, (1994) and Gerlach and Wagner, (1997) provide support for the use of innovative techniques to secure market advantages in high technology settings, based upon data collated within Germany. It can be seen that the vital role of innovation in the entry, growth and
survival of MSEs is multifaceted. There are many benefits to be had and several traps to be aware of in terms of funding and resource outlay required to support the innovation process.

The Innovator’s Solution: Creating and sustaining successful growth (Christensen and Raynor, 2003) shows that most companies fail, most of the time, at innovation and are thus unable to sustain growth. The authors reject the usual explanations for failure such as bad management, risk aversion, and the idea that innovation is unpredictable, and opt for an alternative view. Although their research and findings relate to larger companies, it is possible to draw some truth and guidance from their approach. They recommend ‘testing’ the value of innovation in terms of the following scenarios

- Does the innovation meet the needs of people who have previously not had the money, equipment or skill to do/obtain the product/service and thus have gone without it or paid someone else to do it for them. In addition, are the alternatives inconvenient?

- Can the innovation be copied and under priced and still be accepted by the market? Can the innovator match this competition and still generate profit?

- Will the innovation disrupt the industry without favouring an existing competitor, thus disadvantaging the entrant?

While the final point is more likely a concern for larger firms (i.e. generating disruptive innovation), the former two are quite relevant to smaller firms. In fact, all points can be scaled down to a local, micro level and applied to MSEs when assessing innovative ideas at a micro level. Christensen and Raynor, (2003) define three core ingredients for generating successful innovation:

- Resources (e.g. people, equipment, technology, finance)
- Processes (e.g. internal management and admin)
- Values (company standards and culture)

Consideration of innovation in these terms, radically alters its position from that of a creative adjunct, to that of a holistic and multidimensional business consideration.
which can arise from various sources. This perhaps, best sums up the role innovation could play in determining a MSE’s success and growth as it best aligns with the nature of small firm leadership. It also highlights the integral role played by the functional divisions of a company in providing stimulus for innovation and thus growth potential. A worthwhile consideration for future theory on MSE growth is the role of innovation in providing potential growth opportunities and how that innovation should both reflect and draw from the functional aspects of small business in a continual fashion. As well as the internal environment, the external environment has a particular relevance in terms of innovation and development in high tech industries (Eisenhardt and Schoonhoven, 1990). These considerations are pertinent to the offset printing sector as it is driven to a large extent by the inventions in printing and communication. The following diagram depicts this concept.

Diagram 4: The Innovation stimuli continuum

![Diagram 4: The Innovation stimuli continuum](image-url)
Innovation can thus be viewed as an integral part of a healthy MSE. According to the review of small firm leadership/entrepreneurship in the previous section, it is possible to conclude that the extent of innovation to procure growth possibilities is determined, and driven, by the company’s owner – plus, other factors such as resources, processes, and values driving innovation.

Although it may seem at this stage that a concise review of growth models has developed into a ‘free for all’ in terms of small business theory, this is not the case. It is pertinent at this point to summarise a few of the key findings and results from the literature review in order to provide some clues to the overall cognitive direction of this chapter and research project. Growth models themselves (in their various forms) are not wide enough in scope to explain, let alone predict, factors for MSE growth. They do however, provide an excellent starting point in terms of structuring an approach to analyse and guide the phenomena of MSE growth. The review of growth model theory clearly highlights the integral role of the MSE owner/manager, thus a review of entrepreneurship will provide a typical profile of small business management and should be considered in any realistic and worthwhile discussion of MSE survival and growth. Similarly, innovation can be seen as the most inherent form of growth stimuli for MSEs as it forms part of the entrepreneur’s classical psychological profile. Innovation itself is less an accomplishment than a way of life for MSEs. Thus, any future research dealing with the growth of MSEs should place emphasis upon the role of innovation (stemming from various sources) as an internal driver in developing growth opportunities.

The final variable to be reviewed in terms of MSE performance is variability itself. Complexity, contingency and the unexpected i.e. reality. This will be reviewed in terms of the functional operating units within MSEs.

**Contingency and complexity**

The functional aspects drawn into the light by Christensen and Raynor, (2003) open a venerable Pandora’s box of considerations. However, these considerations do fortunately, possess some logical structure. This structure can be taken from the actual functional units of a MSE which typically fall into the following broad categories:
Internal company functions:

i. Organisational and administration (culture)
ii. Marketing
iii. Human Resource
iv. Financial and Legal
v. Production and technology

Naturally, depending upon the company, its market, and product/service mix these functions will have different importance, as well as vary in depth and level of complexity. A similar classification of small business is provided by Huang and Brown, (1999). They review business problems in terms of five function-based areas which were previously highlighted by Walsh, (1988). These functional areas consist human resource, accounting and finance, marketing, internal management, and external management. They found the areas of marketing, human resource, and general management to be most problematic in small businesses.

Several other pertinent research projects have attempted to link functional aspects of small businesses with growth and they will now be reviewed in terms of the five functional groups listed previously.

i. **Organisation and administration** aspects are to an extent driven by the owner/manager in MSEs. Organisational culture is often thought of as an extension of the entrepreneur’s personality (Choueke and Armstrong, 2000; Barringer et al., 2005). Culture itself is a term which attracts many and varied definitions. The purpose of this section of the review is not to define and analyse culture, but to acknowledge the role it plays in impacting the success of a small company.

Alvesson, (1995) argues that culture deals with company norms of behaviour and the way it operates. This holistic view has implications for the strong influence of the owner/manager in the case of MSEs, implying a link between the culture within a smaller firm, its owner/manger’s personality and views, and the way these are unified and translated into a potential avenue for growth. The evidence is slim, as acknowledged by Choueke and Armstrong, (2000). However, it can be easily conceived that a company with an open, innovative, competitive culture (and success
focused leader) would view growth differently from a company where the owner was more interested in modest, but constant returns against the trade off of more free time for less risk (Boyd and Begley, 2002). This evaluation must take place prior to applying growth imperatives if indeed those imperatives are to suit the enterprise in question, and thus stand a chance of being adopted and realised. Carrying out such an evaluation would surely lead to less surprise when a MSE firm ceases to grow despite possessing all of the prescribed attributes for growth previously outlined by prior research projects. This is a worthwhile consideration for future research.

ii. Marketing is a functional area which can provide growth stimuli and promote growth imperatives. This function provides the link to market feedback and product delivery, plus a range of functions in between. Huang and Brown, (1999) identify promotion and market research as the most prevalent issues for small business owners. Market research is often restricted due to limited resources ( and Robbins, 1992) as is promotion and the selection of suitable and affordable media (Huang and Brown, ibid). No further comment will be made regarding the role of marketing and company growth, as it is a worthwhile field of study in its own right and is beyond the immediate scope of this chapter. Suffice to say, that the marketing function provides a mechanism for innovation, both as a stimulus and a method of delivery, and is a tool for driving growth via product/service push and pull strategies. It is a vital aspect of the management decision mix driving the survival and success of MSEs.

iii. Human Resource: a recent study by Rutherford, Buller and McMullen, (2003) attempted to examine the manner in which HR problems vary over the organisational lifecycle and how this affects company growth in small to medium sized firms. In a study of 2,903 small to medium sized American firms. They used company age, size and growth as contextual variables to address the hypothesis that firms do tend towards a lifecycle, and that hiring problems will be more prevalent during the birth stage, while retention will be most prevalent at maturity. They reported only moderate support for a lifecycle theory, and failed to provide support for the remainder of their hypothesis. However, the work did offer some subjective support for the findings of Baron, Hannan and Burton, (1999) which suggested that HRM problems and activities are largely a function of the 'mental blueprints' held by founders and the gender mix of employees during the first year of operation.
The relevance of these findings for MSEs which typically have very few personnel, remains to be established. Rutherford et al., (2003) did find that companies with moderate to low growth reported retention issues and companies with the highest growth demonstrated challenges with employee development. Baird and Meshoulam, (1988) present a model for selecting and guiding appropriate human resource practices throughout various life cycle stages. The earlier stages are supported by recruitment and training and the later by training, motivation and retention practices. Furthermore, they suggest that human resource stages must pass through all stages. If they miss a stage, they will be ineffective and it will be necessary to revisit a previous stage as the learning process is cumulative. Barringer et al., (2005), Boyd and Begley, (2000), and Nemiroff and Ford, (1976) also find support for the use of HRM practices such as training, employee development, task fulfilment, and financial incentives to facilitate growth. They find these issues significant and relevant for existing/mature rapid-growth small firms. This situation could be said to typify the current and notoriously problematic group of offset printers.

**iv. Financial and legal** aspects, and the issues they raise, have been related to the growth of small firms both in terms of the results obtained, and the level of input required.

a. In terms of legal structure Davidsson et al., (2002) propose that small firms are typically funded privately as this ensures autonomy for the owner/manager. Research findings from both Davidsson et al., (ibid), Davidsson, (1991 and 1989), and Almus and Nerlinger, (1999) imply that a limited liability legal form is paramount for MSE owners as it frees them from some types of business-related liability. Davidsson et al., (2002) go onto to argue that as legal form is such an important factor (it alters the risk attitude and scope of the owner when a limited liability is formed), it is likely that a change in legal form will also be a factor in firm growth. This point was confirmed via their research. Furthermore, Almus and Nerlinger, (1999) found that partnerships with other firms (a change in business governance) correlated with greater growth. This raises an interesting issue regarding MSE inter-company relationships and their effect on a company’s growth potential.
b. The most important aspect of finance in terms of MSE growth is the availability of funds to support growth and the realisation and introduction of innovation. Brophy and Shulman, (1993) offer a model of financial factors which they believe stimulates innovation and leads to organisational growth, development and profitability. Their models comprises two endogenous/internal variables (valuation and financing) and six exogenous/external variables (regulatory environment, cost reduction, tax rates, timing of cash payments, availability of capital, and agency costs). They note that many of the variables in their model have interactive effects which influence the investment opportunity and financing decision jointly. This signifies that financing can be said to play a ‘gate keeping’ role in terms of investment; a view contrary to the textbook approach which prescribes investment decisions be made prior to financing decisions. Their key evaluation tool is the internal rate of return (IRR).

A project/innovation is considered viable if it provides an acceptable return to the business, given the risk level involved. This can be reviewed in several ways, one of which is to establish the net present value of the project at a risk-adjusted rate of return (established using the capital assets pricing model)

Although they conclude their research by stating that no precise relationship between financial factors and innovation has been demonstrated to date, Brophy and Shulman, (1993) do offer an alternative view to the role of financing and investment which could in fact prove better suited to micro-small business as innovations should be fairly evaluated in a financial sense to facilitate the best investment choices.

Similarly, Fama, (1977) provided insight into the role of budgeting under uncertainty and highlighted the value of using risk-adjusted discount rates. This concept would also seem to apply to the uncertain nature of MSE financial decisions, where the owners’ capital is at stake and the owner/manager bears all the risk associated with innovation. Any growth model for such enterprises must consider the internal financing and investment decisions of its innovations, and actions for either survival or growth.

v. Production and technology

Technology has been identified by many researchers as a source for innovation and growth. Kay, (2005, p104) acknowledges that ‘both the market and technological bases can provide platforms for growth’. Penrose, (1959) recognises the valuable role of technology and human resources in defining pools of resources from which
the company can draw impetus. Penrose believed that while the economy will provide profitable opportunities for expansion, it is up to the firm to establish an adequate technological ‘base’ to realise these opportunities (Penrose, 1999). She sums up the interconnected role of technology and the other functions listed above, in the following passage taken from her well-known case study of the Hercules Powder Company.

‘Growth is governed by a creative and dynamic interaction between a firm’s productive resources and its market opportunities. Available resources limit expansion; unused resources (including technology and entrepreneurial) stimulate and largely determine the direction of expansion.’ (Penrose, 1960, p1)

This completes the review of the functional factors contributing to growth. As highlighted by the brief review provided, these internal functions should be seriously considered when reviewing growth and growth stimulating opportunities. In terms of MSEs they should be considered in conjunction with owner/manager’s overriding desires regarding company growth, and the existing external or environmental situation. The following diagram depicts the three-dimensional analysis brought to the fore by the preceding review of literature.

**Diagram 5: The three dimensions impacting MSEs growth potential**

Diagram 5 attempts to simplify the complexity of the situation faced by MSEs. It is based upon the work of current theorists and links business practice and reality in a logical, yet contingent flow, suggesting interdependency and continuation.
Section 2.4 has dealt with issues related to company growth. It has presented a review of theories associated with the growth of micro-small enterprises. In the interests of presenting a fair and balanced review it is necessary to present a short overview of the identifiable constraints on growth. In this way, Chapter two will have presented the major theories behind models and drivers of growth, including critique from its field of researchers, plus have acknowledged the prevalent related topics in terms of how they influence growth opportunities and how they constrain them.

2.5 Factors constraining MSE growth and life cycle considerations

One of the major constraints on growth is financial, particularly the availability of external funding. Other restraints on growth include human resources, as finding the right people for the right jobs and motivating them to stay is not always easy (Curran, 1996). And, finally discovering and holding markets for the firm’s goods and services is an ongoing challenge for MSEs operating in niche environments with keen competition. Authors such as Storey, (1994); Almus and Nerlinger, (1999); and Davidsson et al., (2002) address the link between the age, size and growth of small firms and establish that larger, mature firms have smaller growth rates and logically, small, young, innovative (and non-innovative) firms have higher growth rates.

The concept of company lifecycle provides an excellent vehicle through which to handle this discussion as it logically breaks an enterprises situation into ‘typical’ scenarios which facilitate better evaluation in terms of issues and growth problem identification. Identifying individual ‘stage of life’ problems and ‘stage of life’ growth issues could prove more useful and realistic than developing overall, generic stage models. Dodge and Robbins, (1992) provide such an evaluation and identify issues related to each particular stage or phase through which a small company passes. They identified four key phases and the following problems hindering growth were identified at each stage. The analysis was based upon case reports on 364 small businesses in the USA.

<table>
<thead>
<tr>
<th>STAGE</th>
<th>General problem area</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Formation</td>
<td>marketing, management, finance</td>
</tr>
<tr>
<td>- Early growth</td>
<td>management, finance</td>
</tr>
<tr>
<td>- Later growth</td>
<td>marketing</td>
</tr>
<tr>
<td>- Stability</td>
<td>management, personnel</td>
</tr>
</tbody>
</table>
Although by no means conclusive, this study does serve to highlight that the owner/managers of MSEs do have to contend with different problems in the various stages of the organisation's life cycle. The authors also conclude that external, environmental problems are more important early in the life cycle, with internal problems becoming more critical as the business grows and develops. These results are consistent with the findings of Churchill and Lewis, (1983) and Kazanjian, (1988).

While somewhat simpler to recognise and quantify (due to the sequential passage of time and numerical measures), life stage problems are not always discrete, but instead 'somewhat fluid, with problems overlapping in adjacent stages (Normann, 1977, p 46). One may question which 'life stage' is most valid because attempting to develop one model for all firms across all life stages has proven rather difficult. Evans, (1987a and 1987b) reports that firm growth decreases with firm age when firm size is held constant for young firms. This concurs with Jovanovic’s, (1982) findings that firm growth decreases with firm age. An indicator that mature firms face inherent growth problems as markets stabilise. Several other authors also allude to the more delicate difficulties faced by this group in terms of maintaining business survival and possibly establishing growth - if desired! (Miller and Friesen, 1984; Kazanjian and Drazin, 1989 and 1990).

A summary of the key problems faced by a mature MSE is provided in Table 5. In terms of this study it highlights the need for focused assistance to this group of 'challenged' MSOPs.
Table 5: Key problems faced by mature, micro to small-sized firms

<table>
<thead>
<tr>
<th>Author</th>
<th>Indicator of maturity</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kazanjian and Drazin, (1989 &amp; 1990)</td>
<td>Growth rate slows to match that of the overall market</td>
<td>Maintaining growth momentum &amp; market position</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Owner/manager load</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Market and product saturation</td>
</tr>
<tr>
<td>Miller and Friesen, (1984)</td>
<td>Sales levels stabilize, level of innovation falls, and a more bureaucratic organisational structure is established</td>
<td>Formal functionality of the organisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Centralised power which may lead to lost opportunities due to overload or trait-related aspects of the owner/manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conservative and less innovative decision making</td>
</tr>
</tbody>
</table>

NB: within this article the authors provide a comprehensive summary of other works on stage identification – although useful in terms of stage classification, this is beyond the immediate scope of this paper and thus the review will be limited to the two theories provided which do summarise most of the extant theory to that point.

All things considered, and a majority of considerations were introduced in this chapter, …MSE survival and growth can be definitely viewed as contingent and complex.

In their book ‘Dealing with Complexity’, Robert Flood and Ewart Carson, (1988) attempt to define a method for dealing with real and messy situations. They present a structured approach on how to review, study and analyse them in some logical and robust form. Thus, it would seem appropriate to give the final word, concluding this section to them. The following statement also provides a logical link to the remainder of the study and the approach taken regarding the methodology and analysis. Put quite simply, it sums up the general research topic i.e. reality.

‘In societal matters, however, structure is replaced by messiness, that is sets of beliefs, values (and so on) that may or may not overlap. Thus, there are
different viewpoints on situations relevant to particular sets of beliefs, values (and so on).’ (Flood and Carson, 1988, p 272)

2.6 Conclusion

The beginning of the chapter began by establishing a definition of micro-small business which is most relevant to the research study at hand. It highlighted the fact that a typical offset printing company in Germany should be best defined as a MSE. The information went on to provide support for the importance of such companies in the general economy and thus establish the worth of the overall focus on MSEs. Based upon this definition, its plausible application to offset printing, and the vital role played by such firms in the German and central European (indeed world) economy, it can be confidently stated that the elected subject of the research study (namely, micro-small offset printing) is justified.

Sections 2.2, 2.3 and 2.4 of the chapter provide a complete and comprehensive review of not only the core consideration i.e. growth theories but also the vital aspects of related fields of research (entrepreneurship, innovation, and contingency in terms of company functions, environment and life cycle) which will help frame the research problem. The state of research, in all areas of MSE growth theory, and the prevailing sentiment toward this field of research, is best summed up by O’Farrell and Hitchens, (1988, p1380)

‘We are still seeking a theory which will simultaneously explain the infrequency of the phenomenon and account for the major processes underlying growth.’

Nevertheless, this common acknowledgement does inspire one to keep on searching, testing and evaluating. The process of defining MSE growth can be viewed as being similar to the phenomenon of growth. It is multifaceted, contingent and complex, flexible, and intangible. Perhaps this is the very key to understanding and managing it. In terms of structuring an approach for further research, it is necessary to establish the ‘best and worst’ of existing theory and trial it beyond its existing boarders. This research project attempts just that. Before jumping too far ahead, it is important to summarise the comparative evaluation undertaken to date,
and thus develop a base upon which to build not only valid research questions, but also a valid, robust, realistic and adoptable outcome.

Based upon the works reviewed in sections 2.2-2.5, the most salient issues raised in the field of growth and growth related issues, which apply specifically to MSOPs in Germany, are summarised below.

- Offset printing in Germany is indeed best classified as a MSE. These companies play a vital role in the German and European economy and thus, represent a very valid topic for research. It is also clear that a gap exists in the level of formal research available to these firms as national statistics are based upon firms with 20+ employees.

- No one complete life cycle model exists for MSEs, and much debate continues as to how to define a company life cycle.

- MSE owner/managers (or entrepreneurs) have various personality traits which can influence their company, including the desire to cap growth and opt for a freer lifestyle, than a continually growing company.

- Innovation represents one of the major tools of MSEs to both enter a market and sustain growth.

- External and internal factors influence the performance of a MSE. The relevance of internal business functions and the environment within which it operates is a given which must be adapted to, and in turn, can be used to obtain advantages in terms of location and legislation, by these companies.

- Mature companies face a different, and often more challenging, set of issues, in terms of sustaining company growth, than new start ups. These firms are also typical of offset printers, as the industry is old and many small firms are second or third generation, stemming from the craft/trade and family tradition of printing. As such, this group of companies can be targeted for assistance.
Recognition of these aspects raises the following considerations for future research into the growth phenomenon experienced by MSOPs.

- A framework which is focused rather than general may be of more use in terms of acceptance and effectiveness. NB: a tool was recently developed by students at the Print Academy in Stuttgart. The tool is a quick rating test (Rating-Schnelltest, HDM, 2004) and is designed to allow small-mid sized printing plants to rate their financial worth. It is based upon the Standard & Poor’s risk rating scheme and allows each company to establish its own rating. This is useful as a benchmark indicator when seeking capital/funding or as an adjunct to business reports. It does not offer any indication about the general health of the company or its growth potential and options.

- Any framework must consider the role of the owner/manager in terms of business management style and company culture they generate. These considerations should take place up front as there may in fact be an underlying personal wish not to grow – rendering any attempts at generating growth redundant from the outset.

- Innovation should be seen as a must. It should be integrated into all aspects of a MSE to ensure optimal opportunities. There should also be a decrease of the emphasis on innovation as genius. Small innovations are also worthwhile.

- A framework which acknowledges the role of the key business functions should serve to ensure its acceptance due to the tangibility and reality of these functions. Similarly, the external environment is often considered a given for MSEs. However, the effect of the environment should underlie and guide the functioning of a MSE, instead of being held somewhere to the side as an additional but unfortunately unmovable necessity.

- A framework focused on a specific type of MSE would be useful as the issues and challenges faced by a company vary with time and operational circumstances. In this case, a mature company seems a good choice, given
the tough situation in which these firms find themselves within the offset printing sector at present and the lack of planning support available to them.

The existing research on growth models provides a well theorised and sound base upon which to attempt to build a useful management decision framework for MSOPs in the mature phase of their life cycles.

In essence the preceding review helped identify a gap, establish what type of gap exists, and how it could be filled to some extent. Hence, it is possible to define the research questions. They will focus the remaining research and ultimately receive answers from the findings.

**Main problem:**
How can managers of mature micro to small-sized offset printing plants (MSOPs) in Germany/Central Europe plan for survival and grow into the future?

**Sub problems:**
- a. Can a management decision tool be developed to assist this decision and growth process in the mature company?
- b. How would such a tool be formulated to ensure both effectiveness and acceptance? (what factors should it consider?)

Inspired by Flood, (1999) and Flood and Carson’s, (1988) concept of a complex/contingent reality, Chapter three will outline the methodological approach to the research study, and provide the justification for the approach undertaken in light of the research questions. As we are dealing with reality it is logical to adopt a real-life approach to the qualitative research underpinning the study. Action-oriented research looking into soft systems provides a suitable methodological vehicle. The next chapter is devoted to outlining the rationale behind this approach, and setting the scene for the layout and planning of the study. Chapters four and five present the research itself, as well as all relevant findings and recommendations.
3.1 Introduction

Chapter three is designed to provide a clear description and justification of the methodology. Diagram 6 depicts the problem situation and summarises the overall approach to the study. Each aspect within the diagram will be reviewed, in turn, to provide a complete picture of the unified approach.

Diagram 6: The problem situation and relevant approach to study

- Problem situation
- Messy - Soft System (Section 3.2)
- Literature Review
- Consultancy project
- Triangulation of results & information
- Action-oriented research
- Qualitative action-oriented research
  - Convergent interviews
  - Group feedback analysis

Topic: MSE survival & growth

RESULTS
Chapter two helped establish the fact that the topic of the study (MSOP) is a complex unit, and, furthermore, the survival and growth of these types of firms is an equally complex topic, fuelled by continued research and debate. It is fair, therefore it describes the situation as messy and complex. In essence, reality. This is not meant in a negative tone, but rather represents a realistic appraisal of the status quo. By defining the situation as such, it is possible to identify the best approach to take in answering the research questions.

Section 3.2 of this chapter will discuss the aspects of the situation under study i.e. a messy and complex, real world situation which can be defined as a soft system. This section provides justification for the use of soft systems analysis. (The first section of the Diagram 6.)

Section 3.3 will provide the rationale for selecting an action-oriented research approach to the research problems identified within this soft system. The qualitative, action-oriented research technique employed in the study is group feedback analysis. It is conducted with a small study group taken from employees of a ‘typical’ MSOP located in central Germany. Justification for the use of action-oriented research, and the techniques employed, will also be provided. (The second section of Diagram 6)

Finally, in section 3.4, the major ethical considerations will be reviewed and it will be shown how the research is triangulated to ensure robust results in this qualitative field of study. (The final section of Diagram 6).

Structuring Chapter three in this manner will allow the reader to not only understand, appreciate, and follow the logic behind the chosen paradigm and method, but also facilitate the preparation of similar studies, based upon this one, which will further test the findings of this project. In this sense, Chapter three serves two functions:

- to provide explanation and justification for the overall approach, method, and research techniques adopted, and

- to provide a benchmark for simulating the research scenario in future studies. (In line with the action-oriented research objective)
The chapter will draw to a conclusion before leading into Chapter four which analyses the research and presents the research findings in relation to the research questions developed in Chapter two.

3.2 Justification of the paradigm and methodology

a. Research Design – a qualitative approach

The underlying paradigm of this study is one of critical realism. Based upon this precept, the style of inquiry will tend towards interpretive. The study is based upon qualitative data analysis and draws the bulk of its qualitative information from a business unit operating in the field of offset print in central Germany. In attempting to develop a model for this ‘real world’ unit it is necessary to understand the inputs and outputs, and utilise some form of mechanism to thoughtfully bring these together in a meaningful manner. The relevance and benefits of conducting qualitative data analysis are plenty, and include:

- it provides a richness of information often lost in quantitative techniques,
- it is iterative, ongoing and cyclical, (Leedy, 1974) representing a ‘truer’ state of affairs,
- it fits with the nature of the subject i.e. humans. Humans can communicate, and communication is the basis of qualitative data techniques,
- it doesn’t require that we model reality, but rather allows reality to evolve and explain situations, thus
- it ensures theory evolves with enquiry and not as a result of it, and is therefore more focused on the situation at hand (Leedy, 1974).

Rules guiding qualitative research are evolving as scholars in this field attempt to compensate for the criticism that qualitative research is not empirical and more often than not, cannot be tested in an empirical sense.

‘In quantitative analysis, numbers and what they stand for are the material of analysis. By contrast, qualitative analysis deals in words and is guided by fewer universal rules and standardized procedures than statistical analysis.’ (National Science Foundation, updated 28th Jan 2005, p 3)
This view is shared by Miles and Huberman, (1994) who acknowledge that there are few agreed-on cannons for qualitative data analysis, in the sense of ground rules and benchmarks upon which to draw conclusions and verify their sturdiness.

It would seem then that the very source of richness, and the benefits and scope conveyed by qualitative data, also represent the major source of criticism. The table below summarises the major criticisms and responses to those criticisms as highlighted by the authorities in the field or qualitative data design. These considerations are then viewed in terms of the research project described in this paper.

**Table 6: Criticisms of qualitative analysis and how they are dealt with in the study**

<table>
<thead>
<tr>
<th>Criticism</th>
<th>Response</th>
<th>How the criticism is addressed in this study</th>
</tr>
</thead>
<tbody>
<tr>
<td>No universal criteria for assessing qualitative data</td>
<td>Adopt a recognised method which accommodates and appreciates the richness of qualitative data</td>
<td>Use a soft systems approach as advocated by Checkland (1999) – see following section</td>
</tr>
<tr>
<td>Results are not robust, but rather specific and potentially subjective</td>
<td>Introduce some form of data cross-referencing by way of triangulation</td>
<td>Triangulating study results with - previous case study, Delphi study and convergent interviews conducted as part of a consultancy project - relevant literature regarding MSE survival and growth - Action-oriented research (group feedback analysis)</td>
</tr>
</tbody>
</table>

Thus, it can be seen that there are methods to overcome these criticisms. They lie in careful and selective project planning and implementation (Altrichter et al., 2002; Coughlan and Coghlan, 2002; Baptiste, 2001). They begin with

- developing a logical and appropriate research design,
- choosing an appropriate method of analysis,
- ensuring the use of a mechanism which allows for the ‘complexity of reality’, and ultimately,
- triangulating research findings to provide support and back up in terms of research.
In planning the overall research design for this study, I went through several layers to establish a coherent and robust approach to the project. Several key points from authors writing on the topics of research design and qualitative data analysis (Leedy, 1974; Miles and Huberman, 1994; Myers, 1997; Baptiste, 2001; Creswell, 2003) were reviewed. With regard to the issue raised and the given research topic the following research plan was developed. The entire project takes place in a qualitative scenario.

1. The situation faced by MSOPs will be outlined, using a soft systems method
2. Within this methodology, action-oriented research techniques (convergent interviewing and group feedback analysis) will be employed to obtain data aimed at shedding light upon the research questions.
3. To address the issues of data reliability and robustness, the results from the action-oriented research will be triangulated with:
   i. feedback from a previous consultancy project conducted with the company (the major source of data will be a brief case study of the company, a Delphi study, and convergent interviews), and
   ii. relevant literature on the topic of survival and growth of MSEs.
4. The results and findings will then be presented in terms of recommendations for a management framework to assist MSEs:
   i. assess their position, plus
   ii. question their willingness and potential for growth.

The overall research design for the project can be summarised as follows:

**Cycle 1:** Consultancy (Delphi study, case study, and convergent interviews)
- **AIMS:**
  a. to frame the research topic/problem and transform the fuzzy, real world into a plausible system
  b. to provide background information about the problem situation
  c. to help guide the research topic and questions

**Cycle 2:** Action-oriented research (group feedback analysis)
- **AIMS:**
  a. to look into the results of cycle 1 and fine tune them
b. to learn and provide action stimulus for ongoing action research

c. to develop and evaluate a suitable framework for assisting mature, MSOPs survive and grow.

The following section outlines the use of soft systems methodology as applied in this study. It also explains why it is an appropriate method under the circumstances, and applies its precepts to the research project/questions.

**b. How and why the study method was chosen (criteria)**

The decision regarding which methodology to implement is essential, in the sense of determining data collection and analysis methods. Thus, it is relevant, and wise, to establish a criteria upon which the methodology selection can be based. This criteria should also add to the rigour of the final decision as it provides a solid platform from which to argue, and seek and explain, disconfirming ideals. In order to establish such a criteria, a statement of ‘project needs’ must be developed. This requires an understanding for, and appreciation of, the project’s inputs and outcomes. Diagram 7 depicts this planning process.

**Diagram 7: Methodology selection process**

1. **EVALUATION**
   of project’s expected inputs and desired outcomes

2. **STATEMENT**
   of project needs

3. **CRITERIA**
   of methodological requirements

4. **DECISION**
   about which methodology to follow

5. **ACTION PLAN** for project
   - research, analysis & reporting
This process will now be reviewed using the specific example of developing a tool for growth for Werbedruck Petzold. Each step will be briefly explained and related to the key issues of the given project to establish the decision-making criteria.

1. EVALUATION: Expected project inputs:
   - secondary research sources (national statistics and existing industry surveys and stats)
   - primary research sources (Delphi mail - panel of experts based on a global group of print industry suppliers and contributors, plus group feedback analysis. The group will be small (6-8) people consisting of the employees of Werbedruck Petzold printers)
   - convergent interviews
   - co-researcher (managing director of Werbedruck Petzold)
   - a concept/ideal of how growth and planning should take place
   - action-oriented feedback via group feedback analysis

Desired project outcomes:
   - an understanding of the global and local situation in the print/production industry, i.e. why the market is undergoing such a negative period and what needs to be potentially addressed to alter this trend.
   - improved decision making processes and team involvement at Werbedruck Petzold
   - a growth framework/management tool to assist printers develop in the correct way. It is hoped that the framework, developed through trial and evaluation at Werbedruck Petzold, will be relevant for all MSOPs.

2. STATEMENT: of needs (taken from the evaluation of inputs and outcomes) which the methodology must meet in order for it to be deemed appropriate to the given project.
The project requires a methodology that can accommodate:

1. intensive but, nevertheless, limited participation from a small number of stakeholders/informants.
2. varied information sources at both macro and micro levels
3. ongoing input from a co-researcher and group feedback
4. a somewhat complex and changing industry situation
5. a conceptual model which must be tested, reviewed and altered to produce a final model

3. CRITERIA: which must be met by the appropriate methodology. This information is best conveyed by means of a short table:

**Table 7: Criteria for selecting an appropriate research methodology**

<table>
<thead>
<tr>
<th>Identified project needs</th>
<th>Criteria for an appropriate methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited, but intensive participation</td>
<td>Scope to deal with limited participation</td>
</tr>
<tr>
<td>Various sources of information</td>
<td>Scope to deal with different, and possibly conflicting, information</td>
</tr>
<tr>
<td>Ongoing input</td>
<td>Scope to deal with flexibility without compromising rigour</td>
</tr>
<tr>
<td>Complex situation/system</td>
<td>Scope to deal with unclear management decision paths and ‘fuzzy’ research guidelines</td>
</tr>
<tr>
<td>Conceptual and eventually real model</td>
<td>Scope to allow development (testing and altering) of ideals and transformation of these into a working model</td>
</tr>
</tbody>
</table>

4. DECISION: Given the project criteria outlined in Table 7, it is possible to decide upon SSM as a useful and logical methodology. A background to this method, highlighting the advantages and disadvantages, will provide sound justification for the adoption of SSM to the action-oriented and participative project.

5. ACTION PLAN: the details of the project are outlined towards the end of the chapter under section 3.3 outlining the research procedures.
c. Soft systems methodology – a background to the method and project-related advantages and disadvantages

To best understand soft systems methodology (SSM) it serves to acknowledge its origins. ‘SSM resulted from a 30 year action research program at Lancaster University involving Peter Checkland and colleagues.’ (Lancaster University, Management School, accessed 23 Oct. 2003). Over time, it became clear that the business world was not clearly defined (or a hard system) where problems could be solved with systems engineered methods (von Bertalanffy, 1952; Vickers, 1956; Brown-Syed, 2000; Checkland, 1999; Flood, 1999; Dick, 2000a; Jackson, 2003; Sankaran and Tay, 2003). And, as such, soft systems ideals replaced hard, the real-world business environment was defined as ‘complex’, and the focus moved from engineering solutions to developing a systematic process which makes sense of this ‘messy, real life’ situation, and attempts to better it.

This philosophical standpoint is brought to the fore with the following excerpts from early works by soft systems thinkers. The short section to follow emphasises the key changes in the thinking process related to business units, and their behaviour, and serves to highlight the relevance of soft systems methods in real life business situations.

Vickers, (1956, p 9) states that ‘men in crowds may behave like raindrops, but raindrops never behave like men’

Vickers introduces us to a theory of the hierarchy of systems, each more ordered and complex than the previous, each displaying properties which cannot be reduced to those of previous levels. His thoughts reflect those of von Bertalanffy, (1952) who held that

- organisms and organisations should be viewed as open systems,
- one should look to life sciences, rather than physics, for paradigms and thus refers to organic, rather than mechanistic, growth,
- the world can be seen as a number of hierarchical systems of increasing complexity,
- there could be certain ‘emergent’ properties at certain levels of increasing complexity, and
- an underlying emphasis on humans/individuals is vital.
Vickers encapsulates the importance of viewing open, living systems as dynamic and functional when he states that ‘We have been accustomed to think of things as existing, apart from what they do. It seems that this is a bad habit.’ (1956, p7)

Systems theory has many practical uses, especially during periods of growth and change, as it is based upon applied learning and evolving information (McKinney, 2002). McKinney, (ibid) notes the value of SSM in information and technology-driven environments (such as offset printing) by highlighting the following applications and uses:

- it provides a language and perspective to understand and describe adaptive situations,

- it is well-suited to finding the hidden order at any level and structure in large, complex systems,

- it provides a robust language and method for analysing new structures which evolve out of technological change (supported by the work of Senge, 1990), and

- it is often based upon non-linear combinations of values, and is thus better able to model information economics and adaptive change than reductionism.

McKinney, (2002) also points out several valid and robust applications for SSM

- It may be a good problem-structuring tool to ‘front-end other approaches.
- It may serve as an excellent triangulation tool to support or amplify another method.
- Or (as is the case in this study) it may represent a good-fit research tool for a qualitative, activity-based, interpretive, participative, systems-based situation.

Acknowledging a soft system exists, is acknowledging reality. It denotes a preference for richness of detail and input, as opposed to reductionism. It doesn’t translate to the abandonment of modelling, but rather is a ‘systematic process of enquiry which also happens to make use of models.’ (Checkland, 1999, p 25)
The remainder of the discussion about SSM will refer, for the most part, to the various works and theories of Peter Checkland and those on conducting SSM and action research developed by Bob Dick. Prior to establishing the soft systems approach for this project it is valid to briefly discuss the general advantages and disadvantages (or major criticisms) of applying a soft systems method. In this way, the reader is provided with a balanced rationale and justification for the adoption of the soft systems approach in this study.

**Table 8: General and applied advantages of using SSM**

<table>
<thead>
<tr>
<th>General advantage of using SSM</th>
<th>How this advantage translates to the research project</th>
</tr>
</thead>
<tbody>
<tr>
<td>It allows for varying levels of participation without necessarily calling for a high level.</td>
<td>Can be focused on a small participative group from a the case study company – Werbedruck Petzold (Yin, 2003).</td>
</tr>
<tr>
<td>It assumes a less structured and flexible business environment and decision framework.</td>
<td>Allows for the flexibility required to access data from a MSE with over stretched resources.</td>
</tr>
<tr>
<td>It encourages reality via modelling and testing ideals.</td>
<td>As the ultimate goal is a framework, the modelling process is integrated throughout the entire project and evolves  learning develops.</td>
</tr>
<tr>
<td>It requires a solid understanding of the underlying situation in order to propose root definitions.</td>
<td>Allows for correct and focused setting of the research problems.</td>
</tr>
<tr>
<td>It allows for several data collection/analysis techniques, thus increasing rigour via triangulation.</td>
<td>Will benefit from the input of data from a pervious consultancy project undertaken in the lead up to the research program.</td>
</tr>
<tr>
<td>It sets out to be neither a ‘theory generation’ tool, nor a ‘theory testing’ tool. Learning is the valid outcome (Rose, 1992).</td>
<td>The goal of the ensuing framework is to provide a guide, and not a panacea, based upon observed and recorded findings. It is essentially action-oriented.</td>
</tr>
<tr>
<td>It is tolerant of cross-cultural issues as they can be dealt with within steps 5 and 6 of Checkland’s model i.e. comparing conceptual and real world models (5) and thinking about possible improvements &amp; desirable changes (6) (see appendix for Checkland’s model overview).</td>
<td>Ensures all views and options are addressed and thus better reflects the richness of the actual situation.</td>
</tr>
</tbody>
</table>
**Drawbacks and criticisms**

SSM is often criticised for affording a lack of rigour in an empirical sense. However, if one is clear about the situation (i.e. messy, real life) and has established that richness of information, as opposed to numerical representation, is the desired input then this argument warrants less attention. Validation of qualitative data is not impossible, however it does represent the need for consequent planning and implementation. A drawback with Checkland’s seven-step SSM method, other than the (intended) complexity, is that it may be thought of as more conceptual than action-based (Sankaran, Tay and Cheah, 2003). This represents a potential issue to the action researcher who must ultimately justify the choice of an action-oriented research paradigm; but perhaps less of an issue to the action practitioner with a fairly structured, desired outcome and relatively straightforward action path to achieve this outcome (this is the case at hand). To overcome these concerns, a more action-oriented approach has been developed by Bob Dick, (2003b). It has been argued that Dick’s dialectical model of SSM is more action-driven and perhaps easier to adopt when applying soft systems thinking (Sankaran, Tay and Cheah, 2003). Dick includes mechanisms to ensure ongoing review and evaluation, plus a deepening of understanding as information reveals more relevant information and so on. To add to these assertions about weaknesses in Checkland’s model, Checkland himself (1999) felt the need to further developed his original theory to better apply to practical situations and better address the issues which may arise during the modelling process (i.e. when attempting to link root definitions with conceptual models).

Table 9 indicates how these criticisms will be dealt with during the study.

**Table 9: Major criticisms of SSM and how they will be addressed in the study**

<table>
<thead>
<tr>
<th>Criticisms of SSM</th>
<th>How these criticisms will be addressed in the study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigour</td>
<td>A triangulation in terms of analysis will be incorporated to address the issue of the rigour of the research findings. This will consist of:</td>
</tr>
<tr>
<td></td>
<td>1. Details from a previous consultancy project (done in the lead up to the PhD)</td>
</tr>
<tr>
<td></td>
<td>- Delphi &amp; case study, &amp; convergent interviews</td>
</tr>
<tr>
<td>Criticism of SSM</td>
<td>How these criticisms will be addressed in the study</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2. Action-oriented research project comprising group feedback results (it can also be argued that action research itself is cyclical in nature and thus generates internal rigour due to this task/outcome/evaluation repetition)</td>
<td>3. Cross referencing with relevant literature in the field of MSE survival and growth</td>
</tr>
<tr>
<td>Participation and representation or the critical systems approach that free and open debate do not exist, thus rendering futile any attempt to resolve plurality of ideas via exchange, under the soft systems approach.</td>
<td>The Action-oriented research techniques adopted were convergent interviews and group feedback analysis. The following steps were taken to ensure equal participation and idea generation: - participant selection - session preparation &amp; content - conflict management plans should a conflict have arisen - repetition and back-tracking over ideas</td>
</tr>
<tr>
<td>Model plausibility and validity</td>
<td>The adoption of a well-tested soft systems approach (Checkland, 1999 with considerations from Dick, 2003c) and the careful application of it, in light of the action-oriented research situation, ensures optimal model relevance. The aspect of Weltanschauung, or multiple views, also encourages model applicability and validity as it ensures more than one perspective is taken into account.</td>
</tr>
</tbody>
</table>
Based upon these advantages, and the surmountable drawbacks, the main reasons for selecting SSM as an appropriate methodology can now be listed as:

- The scope of the method to handle the ‘real world’, especially in a time of change such as growth.

- The obvious complement between SSM and an action-oriented research which is the desired research approach given the case at hand. Both SSM and action research adapt quite well to a review of systems which are developed, acted upon, and reviewed in an ongoing cyclical process to attain the final outcome.

- The emphasis on action via learning/understanding.

- The treatment of modelling fitted well to the desired outcome (a growth framework) of the project.

- The possibility to ensure rigour via triangulation, varying data sources, and the incorporation of a co-researcher.

**Application of SSM to the research project**

The following section will now construct the research project applying a soft systems methodology, in light of the action-oriented research techniques to be adopted within. The general framework recommended by Peter Checkland will serve to guide the development of the method. Care will be taken to avoid applying the method too mechanically as this is not how it was intended by Checkland. The aim of Checkland’s SSM is to facilitate the fact that solutions do not emerge from one decision or action, but rather over time, thus giving action and refinement a better chance of success. With this consideration in mind it is pertinent to acknowledge further considerations for tailoring Checkland’s approach to action research via the four dialects proposed by Dick, (2003c). These concepts will be addressed as and when appropriate to balance Checkland’s approach and ensure the method remains both valid and action-based.
The steps to be undertaken, as comprised in Checkland’s seven-step model, are:

1. Defining the problem situation in ‘unstructured’ terms

2. Expressing the problem situation

3. Providing ‘root definitions’ of relevant systems

4. Making and testing conceptual models

5. Comparing conceptual models with reality

6. Thinking about feasible/desirable changes

7. Taking action to improve the problem situation.

These steps, or aspects of the project, will now be discussed and evolved in turn to provide the structure behind the study and demonstrate the solid methodological base upon which the project is founded.

**Stage 1: Defining the problem situation in unstructured terms**

Potentially, the first three steps listed above could be classified as fact finding, in terms of the problem situation. They are all related to finding out more about the problem situation (internal and external). In an action-oriented research sense they equate with Dick’s first dialect which requires researchers to immerse themselves in the problem and experience the situation as fully as possible. It involves ‘getting a picture’ of the situation. This is achieved via the use of rich pictures and root definitions which incorporate aspects from within the problem situation and external to it (and from various perspectives) in an effort to fully appreciate the issue at hand.

This section will present the information according to Checkland’s model, in three separate stages. However, it is important to note that this report represents a transcription of ideas which occurred in reality, in a less than orderly fashion, and over a longer period of time.
In unstructured terms, the problem evolved from the following issues and circumstances:

**Printing industry**
- The printing industry globally is undergoing massive changes.
- New, highly competitive markets for printing are opening up in the Middle East, Asia, and Eastern Europe.
- European printers are facing price wars and fuelling them with low pricing/sales tactics.
- Offset printing represents a large portion of the printing market and of this, micro to small-sized companies are suffering a great deal.
- There is a lack of recognition for, and support of, micro-small offset printers: statistics are not relevant, well trained/educated management is not ‘typical’, external consultants are either not interested or provide standard, pre-programmed solutions.
- Existing or mature firms within the micro-small offset printing sector are often forgotten and unfortunately disappear from the market rather rapidly, without other options than to declare insolvency.

**Support for the survival and growth of MSEs**
- Extant literature on theories for survival and growth is inconclusive.
- No one model provides either the key to success or a description of how to attain it.
- Many related fields of theory impact the success, or otherwise, of micro-small enterprises.
- Reality is unclear and difficult, if not impossible, to model.
- Typically micro-small business owners are not always driven by the need or desire to grow their companies and increase profits, thus further complicating the issue of small firm growth.
In other words, there are a lot of issues which can be related to the survival and growth of MSOPs. In general terms it can be said that:

**PRINTING:** Micro-small offset printers in Germany/central Europe are facing continual and increasing pressure from internal and external forces. These pressures are coming from many key factors, some of which can be influenced more than others.

**SUPPORT:** There is very little, useful help available.

Leading to the need for relevant, useful, easy-to-use, real life model/tool for micro-small offset printers to assist with survival and to highlight options for growth.

**Stage 2: Expressing the problem situation**

It is perhaps simplest to depict the problem situation diagrammatically, as it is so multifaceted. In this way it is simpler to identify the area enclosing the key problem, which in turn, allows for its expression.

A sketch of the problem situation, or the rich picture of the situation at hand, is presented in Diagram 8. It attempts to show the factors affecting the topic of research and the potential solutions. This picture summarises both the validity of the study as well as its aim, and provides an excellent conceptual starting point for further development.
Diagram 8: The problem situation and options for a solution (rich picture)
Stage 3: Root definitions

According to Checkland, (1999) this stage requires the expression of the notional systems which are relevant to the problem, and is the ‘crux in the methodology’ (p 223). Further to this Dick, (2003c) suggests that the researcher developing the root definition must consider

- How well do the root definitions capture the important part of what I am experiencing?
- How well is the reality represented in the root definitions I am writing?

CATWOE is a useful tool used in SSM to assist in the establishment of satisfactory root definitions. The facts below were developed in a different order, however, are presented in the following order according to the mnemonic, for ease of reference. The CATWOE analysis for this study is outlined below.

C (customers): the customer within and without the system is the ‘Client’. Clients can be advertising/marketing/communication agencies, creatives and designers, suppliers to the printing industry, and business clients or end users. Anyone who requires an image set or printed product.

A (actors): these are the agents who carry out, or cause, the main activities of the system. In the research project the key actors are management/supervision, prepress and print operators. Minor actors in the case of MSOPs are post production and support staff (sales and admin.). In the case of MSOPs, with limited personnel, the tasks of the minor actors are often undertaken by the major actors.

Dick, (2003c) rightly recommends the consideration of actors and stakeholders in action research. This is a valid point as it ensures that all those involved in the research study have relevance to the problem situation and can provide useful and valuable feedback about the system. To this end, the study will include management, prepress, and printing personnel as they reflect the key aspects of the system and can best comment upon the problem situation.
**T (transformation):** the means by which defined inputs are transformed into defined outputs. The printing process is well reviewed by Kipphan, (2001) in his comprehensive *Handbook of print media: technologies and production methods.* He summarises the printing process as beginning from an information source which comes via a client, agency, or association into the print process (prepress, print, post production) and onto the disseminator of information to the end user of that information. This is a general and unbiased view of printing, plus it takes into account both the pre and post printing aspects which play a vital role in the print process as providers and users of the product. A diagram depicting Kipphan’s model of the printing transformation is shown in Appendix 1, on page 216. It applies to the research study very well.

**W (weltanschauung):** a worldview or an outlook, framework, or image which makes the root definition meaningful. The system can be said to have various aims depending upon the view taken. The following four outlooks summarise the feelings of the key actors and the end users in relation to the printing system.

a. Management’s view: the company must return enough profit to support a lifestyle as decided by the owner/manager. The goal may vary from existence which supports a ‘good life’, through to ongoing growth fuelling expansion, wealth and power – and anything in between.

b. Prepress’s view: to be in control of a process to produce standard, quality printing plates with minimum wastage and work in conjunction with printers to meet client’s needs.

c. Printer’s view: to print quality work in line with predetermined specifications to match or better a client’s original sample/expectation on time.

d. Client’s view: to obtain the best result for a fair price, plus to be reassured that the service and support is sufficient and flexible enough to accommodate unforeseen occurrences. A partnership at a good price.
Another outlook is relevant to the situation, and that is the view of the consultant or agent assigned to assist the MSOP (in this case, my view). The root definition must consider the aspects of the problem situation which can be addressed and to what level they can, and should, be addressed if the final tool is to have a ‘real’ chance of being accepted in practice. In this sense, the external influences on MSEs must be viewed as existent, a constant driver and influence behind the business’s performance. Similarly, the mind set of the owner is paramount as it will drive all further decisions regarding the firm and to what level growth is desired and achieved. Finally, the internal organisational factors play a key role as they provide the impetus for growth via the potential for introducing innovation.

**O (ownership):** the agent controlling the system. In the research study, the one person who controls the system is the owner/manager who ultimately provides and secures the funds, has the power to hire, fire and train personnel, and makes all of the financial/investment decisions regarding production practices and technological development which drives product development. This may not be the case for all MSEs, however, Chapter two did highlight the ‘typical’ desire for control expressed by most MSE owners.

**E (environmental constraints):** the rate of technological development is a given and drives the company’s planning and decisions. The state of the economy also plays a role as budgets are typically cut in the field of marketing when budgetary constraints are set, this has a direct effect on the printing industry in terms of incoming print jobs and overall demand decreases. One final environmental ‘given’ is the opening up of new markets from the ‘East’ (Asia, Middle East, and Eastern Europe). These markets are affecting the overall industry situation, particularly in Europe and need to be acknowledged in business planning. Although this is more of an issue for larger firms operating across markets with global clients, MSEs focused more upon local niches are also influenced to some degree. It is not uncommon for larger printers to contract out jobs to other small printers, and increased competition for larger printers, can translate to less jobs all round. These matters represent the major environmental concerns related to the project.
In terms of defining the system, it can be argued that an appropriate root definition should:

- usefully and relevantly explains the problem, in terms of the problem situation outlined in the previous stages, and
- afford a relevant and accurate response to the problem situation

Thus, the root definition provided in this section stems from the expression of the problem situation in the previous stage. The rich picture of the problem situation is multifaceted and, as such, so is the root definition of the problem situation. This is not an issue in terms of the research project and overall research design and paradigm, as the real life situation has several key influential factors which require attention.

As it is difficult, and perhaps even contrary to good research – in this case, to over generalise the root definition, I have opted to provide a definition which specifically addresses all of the relevant aspects affecting the situation in a sequential manner. This approach logically follows on from stage 2 and leads into the subsequent stages dealing with framework development. It also provides some constraints in order to keep the research focused.

The root definitions of the human activities supporting the problem situation are:

a) A MSE printing and distributing marketing and communication material.

b) A MSOP which is beyond the start-up and initial growth phases, and is facing increasing cost competition and capital cost pressure, in a high-tech environment (external)

c) A MSOP facing various ongoing issues from various functional areas within the firm (internal)

   i. HR (training, retention, and motivation)
   ii. Finance (tightening bank control, less access to capital, increasing cost of capital, increasing cost of investment, increasing cost of goods)
   iii. Marketing (niching/segmentation, competition from ‘the East’, lack of good market research support/stats)
iv. Legal (capital/private restrictions and pressure placed on small business owners, cost and consequence of innovation and intellectual property)

v. Production (alternative methods, technology)

vi. Organisational/admin (culture, systems)

Stage 4: Making and testing conceptual models

This stage links the answers uncovered during the exploration of the problem, with the initial attempts at modelling the system. Elements of direct action, evaluation and change now come to the fore. This conglomeration is referred to by Dick, (2003c) as the second dialect in action research which links the essence (root definitions) to the ideas (conceptual models).

Based upon the root definition or ‘what the system is’, the conceptual models outlined represent an account of the activities which the system must do in order to be the system named by the definition. Thus, the conceptual models proposed represent the ideal way to achieve the transformation of inputs and outputs, in terms of the researcher’s weltanschauung/perspective.

Conceptual model for Communication

In general terms a printing plant is a provider of communication material. It would thus be interesting to explore the applicability and relevance of a communication systems flow and how this could be applied to the case at hand.

Diagram 9: The communication process (Schram, 1955)
This model does sum up the communication process both within the printing plant and that facilitated by it. It also raises further queries and ideas based upon the root definition which should be acknowledged in any conceptual models of the system:

- if the key focus is communication, is this wide enough? Does it offer enough scope for the role of innovation (so vital to MSE survival)? Has the reach of the model already been surpassed (i.e. does it accurately reflect the internal and external environment)?

- What issues face a mature MSOP in central Europe and how do they affect the system that is the company? What can be done about them, what impact do they have, and are they changeable?

- What is the impact of technology given that it has both external and internal sources and ramifications?

- What role do the other factors affecting a MSOP have on the company/system?

Diagram 10 is based upon the basic communication model shown in Diagram 9. It attempts to address some of the issues mentioned above in an effort to develop a correct conceptual model of the system for further investigation during the action research study.
Diagram 10: A conceptual model of the printing system, based upon a general communications model.

There are evidently clear departures from the traditional communication model in terms of information decoding and the level and variety of potential noise. A framework which acknowledges these factors would ultimately be more appropriate in depicting the system outlined in the root definition and thus, better guide the research study in light of the research questions developed in Chapter two. One key point for further review is the occurrence of cost/financial issues as a source of noise which arises at the end of the communication process. This is a key factor which places increasing cost pressure on MSOPs increasing their inability to establish fair prices up front and keep costs in check throughout the printing process. It should be addressed as part of an internal company review.

This evaluation of conceptual models which simulate the printing system leads us onto the next stage of actual comparison and model refinement. In action research
terms, this is represented by a comparison and evaluation of ideals (conceptual models) and reality, to initiate some form of change or alteration. The process is cyclical in that it keeps reflecting upon previous stages, ideals, and comparisons to fine-tune or revise the working model. It is evolving with the learning process as is the intention of robust action-oriented research.

Stage 5: Comparing conceptual models with reality
The previous stage provided a conceptual model which was applied to the study situation. Its validity, in terms of representing reality was questioned in two areas. The key element for review is the role noise plays in the system, and ultimately in leading to the development of the research problems which guide the study. Furthermore, a reference was made to a change which may need to be made if the model is to reflect reality. This change is related to the costing and quotation process undertaken by MSOPs and the clients’ reaction upon job completion. In terms of an action plan to address this issue it is suffice to incorporate this key point into the final management framework as an internal consideration. The scope of the study requires no further implementation, as this is the impetus the management framework is intended to provide.

Based upon the communication systems theory (in general, and as applied to offset printing) it is clear that the issues facing the firm (as raised by the root definition) require much more attention and emphasis in any model which attempts to design a better system and useful working model for MSE survival and growth.

Referring to the rich picture of the system and problem situation, it is possible to develop a conceptual model based upon the issues it faces, and in light of its key factors. This stage is very important as it provides the link between the conceptual systems model and the development of the desired management framework which is the focus of this study. The logic behind this concept, and a summary of its evolution is provided in Table 10. This should clarify the methodological process undertaken to arrive at the overall study goal. It also serves to summarise the issues discussed to date regarding the adoption of SSM. In essence, it shows how SSM is utilised (in line with action research techniques) to build a picture of the soft system under examination, and how this is used to guide the action-oriented research project.
Table 10: The logic behind the overall research design used to arrive at the research study focus.

<table>
<thead>
<tr>
<th>STEP</th>
<th>What</th>
<th>How</th>
<th>Source of info</th>
<th>Next step</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identify the method</td>
<td>Method overview according to Checkland (1999) and Dick (2003c)</td>
<td>theory</td>
<td>Identify problem</td>
</tr>
<tr>
<td>2</td>
<td>Identify &amp; express the problem</td>
<td>Review the system and all issues</td>
<td>Consultancy Lit review Informal interviews/observation</td>
<td>State system inputs</td>
</tr>
<tr>
<td>3</td>
<td>Establish root definitions</td>
<td>List what makes the system what it is, and what that means</td>
<td>Convergent interviews Lit review</td>
<td>Begin conceptualising systems models</td>
</tr>
<tr>
<td>4</td>
<td>Conceptual modelling</td>
<td>Develop a system approach to highlight areas for attention and improvement. N.B. the communication system highlights the need for an alternative, wider view.</td>
<td>Researcher Group feedback</td>
<td>Comparison &amp; review</td>
</tr>
<tr>
<td>5</td>
<td>Comparison of problems &amp; models</td>
<td>Develop a company-based framework focused on issues to be addressed</td>
<td>Group feedback</td>
<td>Concept building and testing for real world application</td>
</tr>
<tr>
<td>6</td>
<td>Final framework development</td>
<td>Cyclical testing, evaluation, and improvement of model (beyond this PhD)</td>
<td>Group feedback</td>
<td>Further research</td>
</tr>
</tbody>
</table>

Steps 4-6 are important as they represent the transfer of theory to reality. The result of stage 5 is that it highlights a need to alter the thinking behind the conceptual model to move it away from the system itself and more towards the issues facing the system in order to allow the project to flow smoothly and adequately address the research problems. The reason behind this decision is that I realised that the printing process is not at fault in terms of providing communication, it is the issues affecting the system and flow of communication which require attention. Thus, the aspects highlighted as NOISE will receive the remainder of attention and the following
conceptual model has been developed to reflect this revelation. This model will be analysed, tested and developed further in the group feedback sessions of the study. The findings will be provided in Chapter four.

Diagram 11: A conceptual model of the factors affecting the survival and growth of a MSOP
Notes to Diagram 11:

a. The centre of the model is the organisational culture. It is important to establish the culture (in terms of owner’s attitudes towards growth) to determine if a growth directive even applies. These issues were covered in Chapter two in the section on entrepreneurship.

b. Technology is the driving force, and represents the most critical factor, influenced by the environment, as well as having influence upon the internal functioning of the company. Thus it surrounds the company, and impacts it.

c. External factors must be considered as they place unchangeable restraints, or offer opportunities, to MSEs which are traditionally less influential than larger multinational organisations.

d. Internal issues are all relevant. Research (presented in Chapter two) has shown that mature MSEs face issues in the field of HR, marketing, and management. These issues should receive initial consideration by mature firms searching for growth options. The research also highlighted a dichotomy between technology and HR. On one hand technology drives innovation and expansion, and on the other prepress and printing machines do not run themselves (yet). Prepress in particular is very labour intensive, and getting the right people for the job is a major consideration. How the model addresses this issue will be discussed in the results outlined in Chapter four.

Stage 6: Thinking about feasible/desirable changes
The consideration of changes is undertaken in the group feedback sessions conducted as part of the action-oriented research study aimed at evaluating the conceptual model developed by the researcher. A full description of this process and outcome is provided in the following section as well as Chapter four.

In the case of this study, the link between conceptual modelling and comparison of models can be best described in Diagram 12.
Diagram 12: How a conceptual model leads to a focus on reality

Conceptual modelling about the communication system

Reference to problem definition & communication system models highlights the importance of NOISE

The development of a further conceptual model based upon the company and the factors affecting its ability to deliver communication

Highlighted a need to focus on NOISE aspects

New approach required

Issues-based conceptual model to draw attention to areas to be addressed by group feedback

Stage 7: Taking action to improve the problem situation

As this study is focused upon providing impetus for future action and improvement, it is beyond the scope of the study to evidence specific actions which improved the problem situation. However, the study does present an excellent opportunity for further empirical investigation as it offers a tangible framework for evaluation and measurement. This framework represents the first step in improving the problem situation and was developed according to sound and robust action-oriented techniques to ensure its focus on reality.

This completes the review and justification of SSM with reference to action-oriented research. Section 3.2 covered not only the theoretical aspects of SSM, including the advantages and disadvantages, but also applied it rigorously to the study project. A successful project outcome begins with a solid statement of needs and desired outputs, and has the internal flexibility to be evaluated and reviewed as needed. Both soft systems methodology and action-oriented research techniques facilitate these requirements. The final decision to implement a SSM is not only logical in a business sense, it is also justifiable in an academic sense. A soft systems methodology, in general, represents a rigorous, relevant, and functional method to
assist in the development of a useful growth framework for MSOPs within Germany, and potentially elsewhere, as well as in other industries.

3.3 Research procedures

As mentioned, the research will concern itself, in general, with growth theories and corporate planning tools. The field of application will centre around MSOPs which are currently facing difficult economic times, rapidly improving technology, and ever increasing demands to raise quality standards and simultaneously deliver a ‘cheap’ end product. The situation is very changeable, and management planning is traditionally reactionary and technology-driven. That is to say that management and corporate policy/growth decisions are undertaken, for the most part, to keep up with new technological advances in printing and print products. For example, new screen technology and imaging techniques require new imaging machines, workflow systems, software for calibration, and so on. Thus, a decision must be made to either invest in the necessary upgrade, or fail to meet market needs and new standards. There may be no real choice and no time to consider alternatives. Any valid planning and growth framework will need to address the issues of flexibility, emergence, and constant review in order to capture the flux of the situation. To establish such a framework requires rigorous research taken from a diverse sample (not necessarily big), which can be reviewed and acted upon throughout the course of the research period in order to refine actions and test and trial possible model components. To meet such research requirements, a flexible, participative, action-based approach is required. It is intended that the research itself will guide the development of the desired growth framework. As such, the research objective will be met through emergent data which will be continuously acted upon and reviewed in order to refine the model over time. The research question is not a clear one which can be placed under experimental conditions and tested. The research objective is to find out what should comprise a growth framework and how and when to evaluate and update it. The process will not be static, but rather evolving and action-based. Assumptions will be acted upon, evaluated, reviewed and acted upon in an ongoing, spiral-like process. This research responsiveness and flexibility is inherent in an action research approach (Lewin’s cited by Smith, updated 14 July 2002).
Although action research is most often linked with public systems (healthcare) and teaching, its approach to participation, and action (based upon inquiry), followed by review and further action, can readily be applied to private practice. Action-oriented research indicates a further refinement as it involves (action) research aimed at providing an understanding of a situation, and setting the scene for further action to improve the situation (Dash, 1999; Maguire, 2002). An appraisal of the drawbacks of action research will be reviewed first. These points are summarised and collated based upon concepts expressed by several experts on action research. Thus, the information presented over the following pages represents a summary of the main ideas and comments proposed by the following theorists: Argyris and Schon, 1989; Carson, Connors et al., 1989; Burns, 1997; Chambers, 1997; Ramsey, 2000; Berardi, 2002; Fricke and Totterdill, 2004. Furthermore, several works by Dick, (2004, 2003b and 2003c, and 1999) served to guide the project’s continual reference to action-based processes and evaluations. Finally, Hilburt-Davis and Dyer, (2003); Levin, (2003); Sankaran and Tay, (2003); Thompson and Perry, (2004); and Coughlan and Brannick, (2005) provided insight into the application of action-oriented research to the private sector and indeed how to apply the results of an action-oriented research project conducted in one work place to other situations. The newness of these pieces indicate the growing trend to apply action research techniques to the business world and highlight some valid points for ongoing research, following this study.

The major disadvantage of using an action research approach is:

- the relative ‘newness’ of action research paradigms in private business theory and research. It can be said to be more difficult to conduct and justify in terms of thesis work (Dick, 1993). This indicates that one must be cautious to ensure rigour.

A further, project-related, disadvantage is:

- the cross-cultural nature of the project (participants will be drawn from Canada, Germany, Switzerland, Finland, Israel and England)

The cross-cultural issues must be dealt with carefully, especially at the data collection and analysis stages. Aspects such as cultural nuances and vested interests will need to be considered. It is hoped that the assistance of a German co-researcher will help even out my cultural biases.
The issue of providing a rigorous (and useful, in terms of outcome) study is a matter for more in depth consideration, at this point. Several methods exist for overcoming this drawback, of which perseverance and good research design create the basis. Having established an appropriate paradigm, it is now a matter of fine-tuning research design and methodology to obtain rigour. The following ‘rigour enhancers’ have been taken from recommendations made in a paper by Bob Dick, (2003b).

- **Triangulation (different methods of data collection)**
  In this case the researcher has used several sources of data, and three major data collection techniques (email Delphi (process described in Farmer, updated 2000), convergent interviewing (process described by Dick, 1998), and Group feedback analysis (process prescribed by Dick, 1997b) to cross analyse assumptions and findings during each action phase. The use of triangulation, in the form of multiple sources of information will increase the confidence in data and findings and allow for cross-referencing.

- **Different sources of data**
  The three major sources of qualitative data mentioned are also supported by quantitative secondary data as a means of cross analysing and searching for disagreement/fit between existing statistical and theoretical data, and the primary qualitative data to be collected.

- **Different informants**
  The inclusion of a diverse and global panel of experts (comprising the Delphi study) and a diversified representative group for action-based group work, adds further rigour to the widespread application of the research findings.

- **Different researchers**
  The study incorporates a co-researcher for parts of the data collection and analysis. The co-researcher is from a different cultural background and field of expertise to the researcher, which will hopefully bring to light any disagreements and bias stemming from my multicultural background (the researcher is an Australian, of English and Italian heritage).
Different/overlapping information through different questions)
The use of a convergent interviewing technique allows for overlapping questions during the probe question phase. It also provides a chance to delve into areas of disagreement or conflict.

At this stage, these precautions should satisfactorily overcome any research validity criticisms. In any event, methodological literature is evidenced to further defend the use of an action-oriented research approach. And, the methodology is continually reviewed to seek avenues for improvement and increased rigour. Having addressed the challenges, the paper now turns to a review of the advantages of action research in relation to the project detailed, and in doing so, provides conclusive evidence that action-oriented research is an appropriate choice of paradigms.

In reviewing the advantages of an action research approach, one need simply refer to the situation to which the research applies and the research requirements. The following table provides the key requirements of the given research topic and aligns them with the primary aims of action research, as outlined primarily by Dick, (1999).

Table 11: Alignment of research requirements to action-oriented research techniques

<table>
<thead>
<tr>
<th>Thesis research requirements</th>
<th>Action-oriented research primary aims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide a vehicle for uncovering industry sentiment (i.e. the feelings and reasons behind the statistics of bankrupt printers in Germany/central Europe)</td>
<td>BE EMERGENT</td>
</tr>
<tr>
<td>Remain open to the input of a varied group of participants/informants</td>
<td>BE PARTICIPATIVE</td>
</tr>
<tr>
<td>Reflect the flux and conditions of the real business climate on an ongoing basis</td>
<td>BE REALISTIC &amp; FLEXIBLE</td>
</tr>
<tr>
<td>Allow for stages of reflection and planning followed by action and testing, then evaluation and further refining/action</td>
<td>BRING ACTION VIA UNDERSTANDING</td>
</tr>
</tbody>
</table>
Thesis research requirements | Action-oriented research primary aims
--- | ---
Allow for a final framework which evolves over time and can continue to be reviewed as an emerging model which is truly reflective of modern management | BE PRACTICAL (Carson, Connors, Smits & Ripley 1989)
Provide the stimulus for future action, based upon a rigorous action-oriented research design | BE ACTION-ORIENTED

The closeness of fit between the research requirements and an action-oriented research paradigm is evident - fully justifying the choice of paradigm in this research situation. The most salient point is that of research guiding the outcome via participative input which is reviewed, and acted upon, in an ongoing process. In this case, both research requirements and overall objectives call for an action-oriented research approach which delivers ‘deliberate, solution-oriented investigation that is group or personally owned and conducted.’ (Johnson, 2000). Action-oriented research more than sufficiently meets the research goals of achieving an action stimulant via research, plus it is flexible and reflects the real world situation of flux faced by MSOPs in Germany (central Europe) at present. It is an added benefit that action-oriented research also provides an interesting and communicative approach which reflects my style of leadership and consultation.

Having outlined the pros and cons of action research, it remains to be noted that action research represents a somewhat more challenging approach in terms of research design and reporting for academic purposes. However, these issues can be simply overcome via the various techniques previously outlined. A change plan for offset printers (model for growth) is desperately required. It has been shown that the situation is changing continuously and good planning is lacking. Furthermore, prescriptive models fail to capture the real situation, and lack flexibility; additionally those who possess the most knowledge and impact outcomes the most, are often overlooked. This section has proven that action-oriented research fits the project research requirements sufficiently that it would hold fast against most criticisms relating to its appropriateness and rigour. The following sections now turn to a discussion of the data collection process.
Data collection techniques

Before commencing a review of data collection techniques it is important to consider the project's formulation to date. The main focus of the project is to develop a useful management decision framework which will assist mature MSOPs grow their businesses in the short to medium term. In order to make this tool as meaningful as possible, an action-oriented research approach has been adopted. Accordingly, a soft systems methodology provides an appropriate method for framing the project and planning the ensuing steps of data collection, analysis and reporting.

Based upon this theoretical framework, it is now possible to establish the 'specifics' of the project. To ensure optimal research results, in terms of information integrity and rigour, plus provide the scope to adapt to current industry and business conditions, it will be necessary adopt data collection and analysis technique(s) which can be applied effectively in an action-oriented research scenario. In this sense, it is necessary that the methods used for data collection meet both academic and practical requirements. This section will discuss the appropriateness, to the given project, of using a combination of several data collection techniques, namely: a Delphi study, convergent interviews and group feedback analysis. The discussion will be guided by the following research and practical-related issues:

a) research issues: ensure rigour,
   (to understand) optimise participation levels, and
   obtain quality data and 'true' interpretation.

b) practical issues: improve understanding of the main issues faced by,
   (to act) printers,
   provide scope to develop, test and alter concepts for company growth, and
   allow for implementation and change

This rationale guides the entire research project, helps maintain focus, and simultaneously allows for continual reconsideration and improvement as needed. It represents a cyclical process in the true sense of action research.
Having established the ground rules for adopting an action-oriented research approach, and justifying its use in terms of the study project, it is now pertinent to provide a summary of the various aspects of the research procedures used. Diagram 13 depicts the research techniques employed, correlated to the objectives of the project in an action-oriented research sense.

**Diagram 13: Project objectives related to selected research techniques**

START

1. UNDERSTANDING

2. BRIDGE

3. ACTING for CHANGE

WHAT issues affect & will affect a printing company's performance

GROUP ENTRY

HOW will we address these issues?

Delphi study -> Convergent interviews -> Group feedback analysis

MANAGEMENT DECISION FRAMEWORK

FINISH

Ongoing review and research

The specific aspects of the research tools used in the study are summarised in Table 12 and, will be expanded, as necessary, to complete the review of methodology undertaken within this chapter. The details of the Delphi study and convergent interviews are provided in Appendices 2 and 3. As they formed part of the consultancy project conducted by the researcher in the lead-up to this study, they will not be included in full detail in the main body of the thesis. The following section relates specifically to the constructs of the group feedback sessions.
Table 12: Review of research procedures comprising the action-oriented research study

<table>
<thead>
<tr>
<th>Aspect of action-oriented research procedures to be reviewed</th>
<th>Project specific details</th>
</tr>
</thead>
</table>
| a. Unit of analysis                                         | A small participation group of key employees from Werbedruck Petzold – an offset printing company employing 11 full-time staff with an ave. annual turnover of approx. €2.3 million (see case study in the appendix for a fuller description of the study company)  
The group was selected as it was considered to be representative of the key actors indicted as part of the root definition i.e. management, prepress and print. More detail about the rationale for selection is provided after this table under ‘Unit of Analysis’. |
| b. Data collection instruments                               | The action-oriented research portion of the PhD comprised two sections and took in the findings of a preliminary consultancy project which stimulated the study and provided useful background.  
Thus, the results are based upon findings from a Delphi study and convergent interviews as well as group feedback sessions.  
This is fully outlined under point ‘Data collection instruments’. |
| c. Administration of instruments                            | As the study was relatively small, and the overall objective of the data collection was to provide qualitative and participate feedback regarding a soft system, the level of administration was not high. This matter will be developed under ‘Administration of instruments’, covering issues of rigour in terms of the study’s data collection and analysis will also be reviewed. |
| d. Limitations                                              | Several limitations do exist with a qualitative project, based upon one case. However, these are reviewed in terms of the study’s objectives and discussed under point ‘Limitations’. |
### Aspect of action-oriented research procedures to be reviewed

#### e. Special considerations

**NB: use of consultancy to obtain triangulated data (see appendix)**

- Case study

**The use of three sources of data to triangulate results is the most salient point of this study. This matter will be acknowledged under the point ‘Special aspects of this study’. All supporting documentation (related to the case study company, and the Delphi study and convergent interviews) is provided in the appendix.**

#### f. Assumptions

**The overriding assumption throughout the study was that results would not be empirically true or testable, but rather provide a theory for further research, testing, and consideration. The point ‘Assumptions’ discusses this issue in more detail.**

#### g. Ethical issues

**The major ethical issues related to data collection and use were covered according to university requirements. All participants provided release forms and all secondary data sources are fully referenced.**

**The ethical issues of the overall research project will be discussed towards the end of the chapter under section 3.4**

### a. Unit of analysis

**The company**

The brief case study provided in the appendix offers a background to the study unit or company from which the participants (work group) were selected. It is suffice to say that the company (Werbedruck Petzold) is a typical MSOP, located in central Germany between Frankfurt and Heidelberg. It is owner managed, by a somewhat ‘typical’ entrepreneur and can be said to be in the mature stage in terms of company life span.
The participants
The group used in both the convergent interviews and the group feedback session comprised employees from Werbedruck Petzold. The company employs 11 people in the areas of admin and sales, prepress, print, and post production.

As the study is very small and is aimed at providing initial feedback to further develop existing theory, a qualitative, action-oriented approach was selected. The action group is thus small, yet still broad enough to provide representation for the situation outlined in the first few stages of the problem definition according to SSM. In order to obtain a representative sample, relevant to the research topic, and obtain information that fills in the gaps in the researchers knowledge, certain key employees were selected. The chosen employees came from the fields of prepress and print and are most relevant as they have:

- Over ten years experience in the printing industry,
- At least six years working history with the company,
- the required level of training to provide useful feedback,
- the strongest influence on the key issues addressed by the model (technology and automated workflows), and
- the necessary level of involvement in day-to-day activities.

Those working within other areas of the company are either not directly from the printing industry or have no conceptual understanding of the factors which affect the companies success, and thus are not well suited to provide feedback in this case.

The desire for group homogeneity and controllable numbers also contributed to the final selection of interviewees.
Thus, the reference group comprised 6 employees from the fields of prepress and print, and production/management. The specific breakdown is as follows:

- two prepress (one typesetter, one technical/software)
- two printers (one full time, one freelancer who also works for other companies)
- two management staff (one from production, one from prepress)

b. Data collection instruments

Data for the study was taken from three sources. This approach was taken in order to provide further validation (via triangulation) for the findings obtained by the research project (or convergent interviews). It is now relevant to provide a brief overview of this data triangulation technique in order to provide the background for the data collection instruments selected. The following table summarises the type of research used, and what purpose each research technique and cycle fulfilled.

Table 13: Summary of research technique and purpose

<table>
<thead>
<tr>
<th>Type of research</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Delphi study – phase 1</td>
<td>International, online brain pooling</td>
</tr>
<tr>
<td></td>
<td>To obtain information regarding:</td>
</tr>
<tr>
<td></td>
<td>- factors likely to affect the future success of printers,</td>
</tr>
<tr>
<td></td>
<td>- how important these factors are in relation to each other</td>
</tr>
<tr>
<td></td>
<td>- the best method to address them</td>
</tr>
<tr>
<td></td>
<td>The Delphi study was not aimed at achieving (or forcing) consensus,</td>
</tr>
<tr>
<td></td>
<td>but rather at obtaining a full and informed list of</td>
</tr>
<tr>
<td></td>
<td>alternatives which could serve to support and enrich my limited</td>
</tr>
<tr>
<td></td>
<td>knowledge in the field of printing. It also served to initiate</td>
</tr>
<tr>
<td></td>
<td>definition of the problem situation.</td>
</tr>
<tr>
<td>ii. Convergent interviews</td>
<td>Feedback regarding the findings of the Delphi study at an</td>
</tr>
<tr>
<td>– phase 2</td>
<td>individual, face-to-face level.</td>
</tr>
<tr>
<td></td>
<td>This served to support, alter, or expand the results from the</td>
</tr>
<tr>
<td></td>
<td>Delphi study, plus initiate/facilitate my entry into the</td>
</tr>
<tr>
<td></td>
<td>organisation within which the project would be conducted. It</td>
</tr>
<tr>
<td></td>
<td>further defined the problem situation and began the conceptual</td>
</tr>
<tr>
<td></td>
<td>modelling process.</td>
</tr>
<tr>
<td>iii. Group Feedback Analysis</td>
<td>Ongoing action-oriented research findings and trials to test</td>
</tr>
<tr>
<td>- phase 3</td>
<td>conceptual models and develop a ‘real world’ framework via</td>
</tr>
<tr>
<td></td>
<td>participative feedback, application, and trial.</td>
</tr>
</tbody>
</table>
Both the Delphi study and convergent interviews are outlined in Appendices 2 and 3. They formed part of the initial phases of research which helped establish the research problem and situation. As such, they are not within the scope of this study and will not be included, in full detail, in the main body of the document.

The group feedback sessions were intended to evaluate, test and alter the conceptual models until some form of reality-based framework for MSE survival and growth could be established. This is the aim of the study. Future research could be done to apply the model and test its worth, or applicability, in describing and assisting MSEs survive and grow. However, this is beyond the scope of this project.

Details of the group feedback sessions are listed in Table 14. The table contains the actual planning of the sessions in terms of timing, what topics were to be discussed and what I was required to do (principles taken from Heller, 1969; and Dick, 1997b). By describing the sessions in such detail it is possible to ensure a standard approach to each session and afford future researchers a base from which to match their own group feedback sessions when attempting to reproduce/support the findings. Care must be taken however, that structure does not defeat the purpose of qualitative data collection techniques. This ethical point will be discussed under point ‘g’. Plus, it must always be remembered that results will (and should) vary as the unit of analysis (group) varies – after all, this is ultimately what qualitative research is all about.

**Table 14: Group feedback analysis planning schedule**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Content</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>2min</td>
<td>Intro</td>
<td>- purpose of the session</td>
<td>Discussion</td>
</tr>
<tr>
<td></td>
<td>- confidentiality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 mins</td>
<td>Definition of goals and constraints</td>
<td>- what we hope to achieve</td>
<td>Discussion</td>
</tr>
<tr>
<td></td>
<td>- what could be some barriers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15mins</td>
<td>Develop questions</td>
<td>- each group member makes 2-3 questions to get info we need (to be able to be answered on a seven point scale)</td>
<td>- cards</td>
</tr>
<tr>
<td></td>
<td>(see Dick 1997a, p 4 for sample questions when asking the group to review and provide feedback about the conceptual model)</td>
<td>- examples of question beginning (how well…to what extent….how much…..)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- place cards face down in a pile/box</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Topic</td>
<td>Content</td>
<td>Required</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>15mins</td>
<td>Collate questions</td>
<td>- get group to collate and group their own questions                                                                                                                                                   - group questions which obtain the same information (information and not wording-based collation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- write up questions (one question which summarises grouped questions is sufficient)</td>
<td>- write up questions and add scales to the end (if a yes/no question then change the question to 'to what extent')</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- leave space on the left for measure of average and spread</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- at the end of the questions add a few 'catch all' questions which call for info not already covered and can be answered in a few sentences</td>
</tr>
<tr>
<td>15mins</td>
<td>Answer questions</td>
<td>- group members answer questions separately                                                                                                                                                                                                     - small cards marked with the question &amp; level of agreement</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- question is read out by researcher and each group member answers with question (top left corner) response (top right corner)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- collect cards face down/in box (including my responses)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- rank cards for each question, starting at one and going to 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- work out the median and interquartile range</td>
</tr>
<tr>
<td>20-30mins</td>
<td>Prepare for the discussion</td>
<td>- discuss the responses based on the level of group consensus (confidential)                                                                                                                                                 - discuss and establish feedback (give thinking time between questions)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- either a consensus is reached or alternative views are identified.</td>
</tr>
<tr>
<td>tba</td>
<td>The report</td>
<td>- group will be asked if the researcher is allowed to report upon and publish results in conjunction with the PhD project                                                                                                                                                  - tba</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- further response                                                                                                                                                                                                                       - researcher will request another session to review feedback as applied to research and model</td>
<td></td>
</tr>
</tbody>
</table>

**c. Administration of instruments**

The group feedback sessions were conducted on site at Werbedruck Petzold as this was the most convenient and acceptable location. The issue with getting the group together was that the company has no ‘back up’ personnel due to its size, thus ‘time
out’ also means ‘down time’ in terms of production. In order to address this matter, and ensure optimal participation, sessions were conducted over the lunch period when most employees had a chance to take a break.

The administration of the session was facilitated initially by the researcher and eventually run by the group itself in the interests of open communication. The sessions were conducted in line with the method advised by Dick, (1997b) (see Table 14) and functioned well throughout. On only one occasion was there conflict and that arose from a misinterpretation of an aspect of the conceptual model. In this instance I intervened to clarify the intended meaning, the model was also reviewed and clarified based upon this feedback.

d. Limitations
Section 1.7 outlined the limitation of the entire research project. Similarly, the beginning of this chapter provided the major critique on SSM and action research in terms of the project.

In terms of the group sessions the limitations came from internal time pressure. Physically getting the group together was somewhat of an issue and did require some flexibility in terms of session planning. However, in general the sessions were conducted within the allocated time frame. I assume that in a real world, business setting, with real company issues, time would be ‘made’ for such group meetings. It could be the case that the research project could perhaps be perceived as a somewhat ‘artificial’ data collection purpose when viewed from the participant’s perspective. This was not an important issue nor did it limit this study. However, it may represent a real limit on similar studies undertaken in MSEs with restricted human resources and should be given due attention in future studies.

e. Special aspects of the study
The study can be considered special in that it draws much of its initial findings from a Delphi study and convergent interviews which were conducted as part of a consultancy project leading up to the research project. To view them as separate units is not correct as the former lead to the latter. In essence, the Delphi study and convergent interviews established the problem situation and helped guide the focus
of the literature review that eventually highlighted the research questions. The time frame linking these activities was quite tight, thus rendering the units somewhat conglomerate and interdependent. The bulk of this section, and Chapter four, deals with the group feedback sessions, however, all results are included within this paper (see appendix) as they are all relevant to the outcome and response to the research problems.

Furthermore, the use of a specific triangulation technique, which is incorporated into the research design, is instrumental in increasing the rigour of an otherwise, small qualitative study.

f. Assumptions
The goal was not to obtain empirically proven results regarding a fixed and testable hypothesis, but rather to further develop the field of theory with specific and applied, real-world feedback and review. Thus, the assumption behind the study was that action-oriented research techniques would uncover considerations and provide depth of data on a rather specific topic. This lead to the selection of SSM and action-oriented research techniques. The results of this study, invite further study. That was the intention, and it was achieved.

g. Ethical considerations
The general ethical considerations are covered in section 3.4. However, in relation to the group feedback sessions I faced a decision between session structure and session feedback. The balance between providing enough structure to ensure the process could be followed and/or repeated, and being careful not to stifle feedback was not always simple. Ultimately I opted to develop an overall structure for the sessions, but allow freedom within each session for open and varied feedback. Also, as the group size was small and used to ‘working together’ this issue was manageable. The small group size was an important fact for obtaining free and open feedback, with adequate time to handle conflict if it arose. This is an important aspect for other researchers to note, and is in fact an aspect of group feedback (Heller, 1969; Dick, 1997b). A more in-depth review of the ethical issues of the entire research project (including the initial research phases) will now be undertaken.
### 3.4 Ethical considerations

When dealing with human subjects, as in qualitative research, there are always ethical considerations. This section will review the ethical considerations related to the study in terms of the following aspects:

- **Humans (participants and providers of information)**
- **Research design (correct use of method and design to address research problems)**
- **Document make-up and structure (referencing, evidence of correct measures undertaken in line with the requirements from the Australian Research Council)**

- Human subjects provide rich and valuable information regarding many aspects of the world. In terms of this qualitative, participative study, human feedback provided a major source of descriptive data. The entire project comprises three elements where human input was required (Delphi study, convergent interviews, and group feedback sessions). During each of these phases the following measures were taken to ensure an ethical process was undertaken:
  - Questionnaires/session plans were neutral or free from bias
  - Participants were duly informed prior to commencement and asked to provide acknowledgement of the process, and release of the results for academic purposes
  - Confidentiality of feedback is ensured as all results are filed centrally in a secure location.

- The objective of the entire research project is to take theory one-step further than where it is, regarding the survival and growth of MSOPs. Very little formal, empirical research exists for this group (in fact, it has been evidenced that MSEs in general are not well supported by numerical data provided at a national/state level). This study is also not
intended to provide quantitative, empirical results. It is aimed at reviewing current theories on MSE survival and growth, and qualitatively applying new theories stemming from existing work to the field of offset printing. The method undertaken, and the research techniques applied, match this objective in terms of providing the desired tools for project planning/analysis to address the research problems. In the given case, the research design and method selected provide a suitable methodological standpoint from which to conduct the research.

- All references throughout this document have been reviewed, verified, and integrated as they express the views that are attributed to them. The document is free of plagiarism and false claims as outlined in the Australian Research Council’s guidelines.

### 3.5 Conclusion

In concluding Chapter three it is important to review the logical and relevant link between qualitative research, soft systems and action-oriented techniques.

The entire research project is aimed at extending the current field of knowledge and theory in the field of MSE survival and growth (with the use of a specific and ‘typical’ case company working in the offset print sector). The intention of the study is not to provide empirical support for an existing or newly hypothesised theory, but rather to begin to unearth a previously ignored or poorly researched topic via quantitative, action-oriented techniques. The type of information required is rich and detailed as it should open up all possibilities to allow for further more specific, and empirically based research to take place. It represents a qualitative research design task, and application of action-oriented research techniques to issues within the corporate, private sector.

Sections 3.2 outlined precisely why adopting a soft systems method to help define the problem situation and outline the issues is suitable in the given situation. It then applied this method, to the case at hand, to exemplify the fit between problem situation and method.
Following (and throughout) this conceptual development, the relevance of action-oriented research techniques becomes clear. Not only do these techniques accommodate the theoretical and practical revelations that emerge from messy or soft systems, but they also nurture their development. This is precisely why action-oriented research fits the data collection, analysis, and application requirements of this study.

Ethical issues when dealing with human subjects are evident, however, can be managed when dealt with prudence, as outlined in section 3.4.

Thus Chapter three, outlining the research design, method and techniques provides a summary of these concepts, justification for their adoption, and evidence of their use throughout the project to lead to the ultimate research objectives. This chapter has been formulated in such a way as to provide a clear path for readers and/or future researchers to follow, and emulate if desired. Chapter four and the appendix provide the findings for the initial and subsequent action-oriented research phases.
4.1 Introduction

Chapter four is split into two main sections, the first (section 4.2) briefly outlines the findings from the initial research phase which was conducted as a consultancy project in the lead up to the research study. The second (section 4.3) provides details from the research components of the consultancy project comprised a Delphi study (with an international panel of experts) and convergent interviews (with the study group at Werbedruck Petzold). The project was aimed at providing the necessary background to formulate the problem situation and guide the development of the research problems. It is a vital precursor to the study and, as such, will be included in the main part of this chapter to help frame the ensuing research and aid the reader in the comprehension of the overall outcome (presented in Chapter five).

Following section 4.2, which serves to set the scene for the analysis of data, the data collected from the action-oriented research project will be presented. This data will be analysed within the soft systems framework outlined in the previous chapter. To allow for ease of reading, summary tables, lists, and matrices will be used throughout the chapter, as recommended by Miles and Huberman (1994), to present the qualitative findings.

The underlying assumption and research objective i.e. to extend current theory in terms of MSE survival and growth, should not be forgotten. The smallness of the study is compensated for by the extensive literature review and case study details of the target company (presented in Appendix 4). The aim of this study is to develop a theory which can be tested in future studies. The main reasons for limiting the study to this extent are:
- the ‘newness’ of the research topic (MSOPs) in terms of how much useful research already exists (low) for comparison/testing purposes
- the application of action-oriented research to a private sector/business issue (action research has a strong background in the public sector), and
- the physical and financial resources available to conduct a broad-sweeping study do not presently exist.
The research questions developed at the end of Chapter two are not so much ‘hypothesis to be accepted or rejected’ in empirical terms, but rather contemplations aimed at pushing the barriers of knowledge and advancing learning beyond its current limit, in preparation for further empirical research. This conceptual planning complements the philosophy behind action-oriented research.

Before presenting the results of the initial research phase (Delphi and convergent interviews) and the analysis of the research study, one other point must be clarified. Chapter four will concern itself with establishing the rationale behind the study (section 4.2) and conducting the analysis of the data obtained via the group feedback sessions (section 4.3). The findings of the study and their meaning and implication will be dealt with in Chapter five, by way of conclusion to the overall project. Diagram 14 sums up the layout of Chapter four, and how it relates to all chapters in the overall study report/thesis.

Diagram 14: Planning and contents of Chapter four in relation to the overall document

Flow of Information and learning (action-oriented research)
4.2 Background to research

This section presents the two components of the initial research conducted in preparation for the PhD study namely, a Delphi study and convergent interviews. A brief case history of the study company is presented in Appendix 4 to further support the data presented in this chapter, and the results discussed in the following chapter.

I have elected to provide a summary of the initial research phase and its findings to ensure a coherent picture of the action-oriented group feedback data analysis is possible. It also serves as a cycle in the data review - a desirable aspect in action research terms, as it provides rigour via repetition of feedback/discussion and results.

Delphi study and convergent interviews

These two research techniques are both well suited to action research conducted within a soft system, and as such were selected as suitable tools for acquiring data to help frame the problem situation and research questions. Each study will now be outlined as a mini project. The conclusions to be drawn, guide the group feedback sessions and will be expanded upon in section 4.3 and Chapter 5.

4.2.1 Delphi study

In order to develop a management decision model which best guides the decision maker, it is imperative that the model acknowledges the key elements affecting the decision. In the case at hand, if a company is to decide how to grow/survive, one must understand what issues it has to deal with and how to deal with them. The Delphi study assists in the identification of 'what' issues exist (Gordon, 1994). The remaining data collection techniques address 'how' to deal with the issues which affect a company's growth, plus provide support for the findings of the Delphi study by establishing cycles which review the findings of the Delphi study.

i. Aim and rationale

Initially, I possessed the managerial skills, and adequate knowledge of organisational behaviour to develop a growth framework/management decision tool in general; however, I lacked the in-depth industry knowledge necessary to forecast the factors which will affect printers, their decisions, and their future success. Thus, expert opinions were sought to efficiently address
this knowledge requirement and hopefully better guide the PhD project in further research and action phases. As such the panel was structured to reflect and gather a broad range of ideas. Eleven panel members were selected to give a wide variety of responses based on their:

- business background and experience,

- vast experience within the print industry, and

- nationality/cultural background.

The results generated were analysed and used in a ‘Concept Delphi sense’, the aim is similar to Policy Delphi (Turoff, 1970; Lang, 2004) in that it aims to generate as many as possible different views and possibilities for consideration. However, unlike Policy Delphi it does not seek confrontation and non-conforming ideas, nor does it seek consensus like more traditional Delphi techniques. The aim of Concept Delphi is to pool the collective knowledge of a group of experts from a variety of fields to provide a fuller set of possibilities and wider range of knowledge in a given topic area. In this way the research findings can be used as support for, and in addition to, other research techniques. It is a formative technique which is aimed at broadening the decision criteria and filling in knowledge gaps in preliminary research phases. In this way I hope to enrich my knowledge and opinions, and take all considerations into account throughout the entire study as well as when developing the management decision framework.

**ii. The study background:**

Eleven industry leaders from around the world were invited to participate in a Delphi study about the future of the offset printing industry. The group of experts covered six nationalities and contained Board Directors, CEO's, Managing Directors and other industry leaders of print houses, technology providers, print industry suppliers and the media. (Refer to Appendix 2 for the list of panel members, their areas of expertise and reasons for including them
The study began early 2004 and ran over a period of approximately two months to allow ample time for response and analysis.

The entire study consisted of two rounds of questions. Contact was via email and remained anonymous at all times. The questionnaires were structured in a cumulative sense i.e. they began with general questions and, based upon the feedback, became more specific during the second round. This allowed not only for information to present itself in a logical manner, but also for the panel to develop and review their own feedback in the subsequent round, thus reflecting back upon previous thoughts.

iii. How does a Delphi study meet the academic (understanding) and practical (acting) requirements of the project?

The Delphi study serves two main purposes:

- it provides an understanding of the underlying themes forming the basis of a growth model/tool, and
- it provides a varied and comprehensive insight into the future of printing - a global industry serving continually globalising companies and company groups.

In this case, the Delphi study was quite controlled and was aimed more at forecasting and obtaining information to clarify an issue, rather than providing a trigger for action. However, as recommended by Dick, (2000b) the results from the study have been combined with other data collection techniques to guide project actions/reviews.

iv. Overcoming the shortcomings of conducting a Delphi study

The typical problems associated with Delphi studies, in terms of rigour and participation levels, as outlined by Linstone, (2002), have been addressed in the study in the following ways:

- Participation was secured by ensuring that
  - All participants were fully aware of the objectives and requirements of the study and agreed to participate of their own free will.
  - Panellists were approached via a personal reference as the co-researcher (Peter Petzold) has many contacts throughout the industry
and was instrumental in securing most panel members’ support. This aspect of networking was quite useful and can be capitalised upon when a case study company is being incorporated into the research study.

- The researcher made efforts to meet, or contact, each panel member personally to review the project and its value. This personal contact served to keep participants involved in the study as a ‘positive’ feeling of obligation was developed as such, participants had given their word personally. This was a special case in this study as the field is so select, and the industry sector so closely linked.

Rigour is addressed in several ways.

- Firstly, a Delphi study represents a cyclical process (in-line with action research) which utilises both agreement and disagreement to obtain a better understanding of the issues, thus providing cross-referencing.
- The potential for cultural bias or industry ‘tunnel-vision’ is hopefully minimised by taking an international group of experts from the printing industry and associated fields.
- Lastly, this data collection technique is used in conjunction with two other techniques to allow for increased involvement of a co-researcher (during interviews) and other research triangulation factors such as different sources of data, overlapping questions, plus the inclusion of information from various informants as discussed in Chapter three.

v. Study specifics

The study comprised two round of questions. Questions were sent to the panel members via email and responses were also provided via email. The results of the first round of ‘fact finding’ guided the second round of questions. Together the results served to guide the convergent interviews and ultimately the literature review to establish the research questions, and the group feedback sessions aimed at addressing them.

Table 15 outlines the two-round Concept Delphi procedure that was followed:
A summary of each round’s questions and findings is now presented as it provides a link to the further development of the study.

ROUND 1

**QUESTION 1:**

In your opinion, what have been the major influences on the success of printing companies in the past? (Try to list these from most to least important, and feel free to explain any of your responses.)

**QUESTION 2:**

a) What factors do you feel will influence the future of printing companies? (Try again to list these from most to least important)

b) Please explain your answers above. (e.g. Do you see any new/futuristic factors arising, will any existing factors become irrelevant, why?)

**Findings – round 1**

A detailed analysis of the findings of the Delphi study is provided in Appendix 2. The following review provides a brief summary of the salient points which impact this study. Table 16 lists the collated responses from question 1, round 1.
### Table 16: Complete table of compiled responses from round 1, question 1 (past factors that have affected the future success of printers) – grouped by relevant area for management decision (49 responses)

<table>
<thead>
<tr>
<th>Financial &amp; purchasing</th>
<th>Human resource</th>
<th>Legal &amp; external (economical &amp; misc.)</th>
<th>Marketing</th>
<th>Organisational &amp; managerial</th>
<th>Production &amp; technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price erosion &amp; competition (pricing policies) x4</td>
<td>Hard work x1</td>
<td>Alternatives to traditional printing (internet, desktop publishing) x1</td>
<td>Identification of niche markets x3</td>
<td>Improving management practices x1</td>
<td>Technology &amp; equipment selection (specialisation) x3</td>
</tr>
<tr>
<td>Reducing internal costs (cost effective production) x1</td>
<td>Well trained staff x1</td>
<td>Competition - Diversification of other industries into printing x1</td>
<td>Market research &amp; customer/target’s needs identification x3</td>
<td>Focus and specialisation x2</td>
<td>Electronic data transfer (standardisation, integration and workflow automation) x8</td>
</tr>
<tr>
<td>New business opportunities (new markets, publishers) x3</td>
<td>Understanding &amp; expanding the value proposal (full service, projects not jobs) x5</td>
<td></td>
<td>Retaining good price/quality ratio x2</td>
<td>New &amp; expanding technologies -Digital printing (print on demand) -direct imaging technology x4</td>
<td></td>
</tr>
<tr>
<td>New mode for prepress, marketing etc. (internet) x1</td>
<td></td>
<td></td>
<td></td>
<td>Increased pressure on deadlines and quality expectations x3</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL responses 5 (10%)</strong></td>
<td><strong>TOTAL responses 2 (4%)</strong></td>
<td><strong>TOTAL responses 6 (12.5%)</strong></td>
<td><strong>TOTAL responses 11 (22.5%)</strong></td>
<td><strong>TOTAL responses 5 (10%)</strong></td>
<td><strong>TOTAL responses 20 (41%)</strong></td>
</tr>
</tbody>
</table>
Table 16 shows the full feedback to question one asking panel members for their thoughts on the most important factors which have affected printers in the past. The table was a simple compilation of responses grouped into functional areas. The responses fell naturally into the functional areas brought to the fore in the literature review highlighted in Chapter two, and further developed in Chapter three via the modelling process. They include:

- finance (and purchasing)
- human resource
- legal (and external/environmental)
- marketing
- organisational (and management)
- production (and technology)

According to the panel’s feedback, the major success factors in the past have arisen from production/technology, marketing, legal/external, and management areas.

Similarly, Diagram 15 summarises the feedback to question two in round one of the Delphi study where panel members were asked comment on the future. Responses have once again been split into the key functional areas outlined above.

**Diagram 15: Panel’s responses for question 2, split into relevant management decision areas**
Once again, the panel highlighted technology as a key factor driving the future success of offset printing plants. Marketing issues were also highlighted, as well as general company operations issues (both internal and external).

The key area highlighted as a determining factor in the past, namely technology, remains important with slightly over 40% of responses referring to the importance of selecting and utilising technology in the future. As far as technology is concerned, the panel felt that adopting new technologies in prepress and print would lead to a company being able to establish a competitive advantage and specialist offering. This message was perhaps the overall key finding of the Delphi study. Technology was cited as both an internal driver and an external influence in terms of a company’s success. At the time of the study ‘workflow’ was a key issue in the industry and as such, several responses mentioned this factor. As it is not a quantitative study, little direct noteworthiness should be given to the specifics of the responses. The idea is to establish a pattern of responses and technology in general seems to have been highlighted as a factor which guided past success and will continue to guide future success.

Marketing also remains a key determinant. However, qualitatively reviewing the responses one can note an overall shift from general market segmentation to very specific market niching. The recommendation from several of the panellists to specialise on very specific market niches and offer an overall service to these niches was reported.

Managerial and financial issues remained valid, as with any business, however, a notable qualitative aspect of the feedback was noted in the external group of factors. Several panellists noted the influence of new markets and replacement media which must also be considered when planning for the success of a printing plant. This may also be a typical response to future-focused questioning as the greater the level of uncertainty, the more externalised the influencing factors become. (Slaughter, 2002).

The general feedback highlighted the need to stay closely linked to technology and the opportunities or threats it may afford, and focus very specifically on market niches to provide a full service solution.
This concept, and the feedback obtained from the information-seeking Delphi study, were again reviewed during convergent interviews with the stakeholders acting within the problem situation. This served several purposes:

- to introduce the stakeholder to the issue and research project
- to review and evaluate the findings of the Delphi study (cycle 1)
- to reveal new opinions from an alternative viewpoint i.e. the various stakeholders’ established in Chapter three.

ROUND 2
As a consequence of the responses to round one, panel members were further probed about their opinions in terms of the functional groupings attributed to them following analysis of round 1 responses. For each functional group, two ‘typical’ responses were provided. These were identified as ‘functional factors’ affecting the future success of an offset printer. Panellists were asked to rank these factors in terms of importance and provide detail about how to achieve/resolve/address them. Round 2 consisted of two questions which have been transcribed hereafter.

Question 1.
Please rank the following factors in terms of their importance in determining the future success of a small to medium-sized, offset printing company. There are 12 factors to be ranked using the numbers 1 through to 12.
The factors have been grouped into six areas of management for ease of analysis. Please rank each factor in the column headed RANKING. 1 = ‘most important’ through to 12 = ‘least important’.

<table>
<thead>
<tr>
<th>Area of management</th>
<th>Factor</th>
<th>Ranking (numbers 1-12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational</td>
<td>a. Focused and effective management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Retaining good price/quality ratio</td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td>c. Highly targeted marketing (niche marketing)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Understanding and expanding the value proposal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(providing a more fully integrated service as opposed to just providing a printed article. This involves providing design, prepress, print, letter shop etc. in an attempt to handle jobs more as projects than print tasks.)</td>
<td></td>
</tr>
<tr>
<td>Human resource</td>
<td>e. In-house skill and know how</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f. Well trained and motivated staff</td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td>g. Pricing policies (to deal with price erosion due to increasing price competition)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>h. Reduction of internal costs</td>
<td></td>
</tr>
<tr>
<td>External/Legal and economical</td>
<td>i. Impact of alternatives to traditional offset printing (desk top publishing, internet etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>j. Opening and expansion of new markets (new potential client groups e.g. publishers)</td>
<td></td>
</tr>
<tr>
<td>Production and technological</td>
<td>k. Workflow standardisation and integration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>l. New technology/printing equipment</td>
<td></td>
</tr>
</tbody>
</table>

**Question 2.**

In the table overleaf please explain how you would make decisions about each of the ranked items listed in Question 1 (i.e. what management decision tools you would use in each case?).

An example might be: To determine a ‘niche market’ I would conduct market research based on lifestyle demographics. The management decision tool would be: Market research based on lifestyle demographics.
NB: Your feedback to this question, especially regarding the production and technology factors, will be very useful.

<table>
<thead>
<tr>
<th>Ranked factors (from question 1)</th>
<th>Suitable management decision tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
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<tr>
<td>5</td>
<td></td>
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<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
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<td>9</td>
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<td>10</td>
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<tr>
<td>11</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**Findings from round 2**

Table 17 summarises the rankings for each of the 11 panellists, in response to question 1, round 2.
### Table 17: Factor rankings for each panel member – colour grouped by area of speciality

(Headings for columns 3-13 are codes for panel members)

<table>
<thead>
<tr>
<th>Area of management</th>
<th>Factor</th>
<th>PP</th>
<th>RK</th>
<th>MA</th>
<th>F</th>
<th>S</th>
<th>HK</th>
<th>AM</th>
<th>HR</th>
<th>KK</th>
<th>RH</th>
<th>KW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational a.</td>
<td></td>
<td>5</td>
<td>1</td>
<td>13</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td>9</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Marketing c.</td>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>10</td>
<td>1</td>
<td>12</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Human resource e.</td>
<td></td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>11</td>
<td>11</td>
<td>7</td>
<td>11</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>f.</td>
<td></td>
<td>3</td>
<td>4</td>
<td>11</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Financial g.</td>
<td></td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>h.</td>
<td></td>
<td>11</td>
<td>10</td>
<td>4</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>External/Legal and economical i.</td>
<td></td>
<td>12</td>
<td>11</td>
<td>19</td>
<td>12</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>9</td>
<td>12</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>j.</td>
<td></td>
<td>7</td>
<td>12</td>
<td>5</td>
<td>10</td>
<td>11</td>
<td>11</td>
<td>5</td>
<td>10</td>
<td>6</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Production and technological k.</td>
<td></td>
<td>9</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>11</td>
<td>3</td>
<td>10</td>
<td>8</td>
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<tr>
<td>l.</td>
<td></td>
<td>6</td>
<td>8</td>
<td>12</td>
<td>5</td>
<td>12</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>7</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

The average and median values for each factor were calculated to develop a group result which displays the factors, related to each other, on a scale from most to least important. This scale will be used to guide the level of importance afforded to the various management areas in the final management decision tool.
Table 18: Average and median values taken from ranked responses. NB: low median values signify high importance of factor.

<table>
<thead>
<tr>
<th>Area of management</th>
<th>FACTOR</th>
<th>AVERAGE (rounded to 1 dec. plc.)</th>
<th>MEDIAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational</td>
<td>A</td>
<td>3.2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>5.9</td>
<td>5</td>
</tr>
<tr>
<td>Marketing</td>
<td>C</td>
<td>4.5</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>4.0</td>
<td>3</td>
</tr>
<tr>
<td>Human resource</td>
<td>E</td>
<td>6.5</td>
<td>6</td>
</tr>
<tr>
<td>Financial</td>
<td>F</td>
<td>7.0</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>7.1</td>
<td>9</td>
</tr>
<tr>
<td>External/Legal and economical</td>
<td>H</td>
<td>6.5</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>9.8</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>J</td>
<td>9.0</td>
<td>10</td>
</tr>
<tr>
<td>Production and technological</td>
<td>K</td>
<td>5.7</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>8.7</td>
<td>8</td>
</tr>
</tbody>
</table>

Due to the spread and small number of respondents, the median value will be used to attain a ‘truer’ indication/group response value for each factor. Low medians signify high importance. Diagram 16 shows the median values for each factor, based upon the group’s responses. As these values provide a better means to evaluate opinions and the ‘importance’ of each factor, based on the responses of 11 panel members, the average values will not be used for further evaluation.

The median values serve to establish the overall group’s ranking of important factors and less important factors. As with all average and median functions there is a trend towards centrality and away from the extremes. However, in this case, due to the small sample size, the centrifugal effect was minimal and values ranged from 2 to 11 (out of a possible 1-12 range). The noteworthy factor results are discussed on the following page, and will be used to guide further group action research, and ultimately the final management decision/growth model.
Relatively important factors are:

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>FACTOR CODE</th>
<th>MEDIAN VALUE</th>
<th>MNGT AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Focused and effective mngt.</td>
<td>a</td>
<td>2</td>
<td>Organisational</td>
</tr>
<tr>
<td>-Understanding/expanding the value proposal</td>
<td>d</td>
<td>3</td>
<td>Marketing</td>
</tr>
<tr>
<td>-Highly targeted marketing (niche marketing)</td>
<td>c</td>
<td>4</td>
<td>Marketing</td>
</tr>
</tbody>
</table>

Items which were considered to be relatively unimportant are:

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>FACTOR CODE</th>
<th>MEDIAN VALUE</th>
<th>MNGT AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Pricing policies</td>
<td>g</td>
<td>9</td>
<td>Financial</td>
</tr>
<tr>
<td>-Opening and expansion of new markets</td>
<td>j</td>
<td>10</td>
<td>External/legal</td>
</tr>
<tr>
<td>-Impact of alternatives to printing</td>
<td>i</td>
<td>11</td>
<td>External/legal</td>
</tr>
</tbody>
</table>

The rudimentary scale in Diagram 16 attempts to depict the median values of the 12 factors in terms of their importance to the future of MSOPs. Each factor is identified by an alphabetical code, explained in Table 18.

Diagram 16: Scale showing the importance of each factor (shown in red) in determining the success of micro to small-sized printing companies

In conclusion, ORGANISATIONAL and MARKETING issues were considered relevant for further attention and EXTERNAL/LEGAL issues were considered less relevant. Further research will focus on these outcomes and attempt to ascertain their validity with reference to inclusion in the final management decision model.

Coupled with the results from round one, technological, marketing and organisational
issues were highlighted by the panel as the most important factors impacting future success of offset printers.

Question 2 responses are presented in Appendix 2 as they bear no real relevance to the study at this point.

**vi. Considerations**

The lack of attention given to human resources could be explained by the organisational position held by panel members. They all operate at board/owner level and naturally have a different perspective on company operations, to say employees.

The other important point to consider is the smallness of the Delphi feedback and its aim to uncover ideas and not obtain conformity of opinion. Obviously a small, qualitative Delphi study has issues in terms of general applicability. Many scathing criticisms of Delphi studies have been reported, the most well known is that of Sackman, (1975) who condemned Delphi studies as being guessing games devoid of rigour, possessing little value in terms of forecasting the future. However, given that this was not the aim of this study, we can focus more on the outcome and weigh the responses with other sources of data to obtain the ‘richest’ picture possible – the ultimate aim of qualitative analysis.

**4.2.2 Convergent Interviews**

The interviews comprised the main stakeholders (key employees) of Werbedruck Petzold, the company with which the ideals of the model will be developed, trailed and tested. The company is small, and the group for both interviews and ongoing group feedback consisted of six people/company employees.

**i. Aim and rational**

The focus of the interviews was to obtain participants’ views on the findings of the Delphi study. This was a relatively 'safe' topic to begin discussions and provided much scope for conversation and researcher-participant evaluation.
The rationale for using a convergent interviewing technique is:

- it provides an excellent method to introduce the research topic to the stakeholders in an open and participative manner,
- it provides a review of feedback from the Delphi study (cycle for evaluation)
- it allows stakeholders to express their views and have them incorporated into the action-oriented research and modelling processes (Rao and Perry, 2003), and
- it facilitates the introduction of a co-researcher (the managing director of Werbedruck Petzold, a native German well-versed in the issues facing MSOPs). This aspect introduces another form of rigour, in that feedback is reviewed from an alternative research perspective, and then compared to that collected by the main researcher.

ii. The background

Each interview was concise, yet informative, providing a research phase preceding the group feedback analysis which formed the research data for the PhD study.

The process comprised aspects from both formal and informal interviewing. The questions themselves were open and interviewee-driven. However, the overall interview structure focused upon similar themes, and each interview was designed to follow a similar flow.

Several planning aspects were critical to the success of the interviews.

a. Participants

The group comprised employees from the case company (Werbedruck Petzold). The company employs 11 people (full time) in the areas of admin and sales, prepress, print, and post production. The people in the interviews were identified as key stakeholders in the problem situation and were chosen due to the following factors. They possess:

- Over ten years experience in the printing industry,
- At least six years working history with the company,
- the required level of training to provide useful feedback,
- the strongest influence on the key issues addressed by the model (i.e. technology and automated workflows), and
- the necessary level of involvement in day-to-day activities.

The desire for group homogeneity and controllable numbers also contributed to the final selection of interviewees. Thus, the reference group comprised six employees from the fields of prepress and print, and production/management. See Chapter three and the CATWOE analysis for a fuller description of the group.

b. Desired atmosphere
It was important to establish an open atmosphere that also addressed the following potential issues.
  - trust: interviewees must trust the interviewers and feel comfortable providing feedback.
  - confidentiality: a safe, and unthreatening basis for the interviews must be established.
  - worthwhile: both interviewees and interviewers should feel their feedback is both valuable and important to the project’s outcome and future research projects.
  - timely: it is highly important to take into account the amount of work each interviewee has. His/her workload is already heavy and the interviews should not be seen as added sources of stress.

c. Timing of the activity
Werbedruck Petzold is a small company in the middle of testing, finalising, and releasing a new product to the market. As such, it is almost impossible to get everyone together for an extended period. Employees have elected to take no lunch breaks, and already work 14+ hours per day. In essence, there is no desire to participate in interviews outside of already extended work hours, and no time to do it within working hours. In this case the co-researcher recommended approaching each interviewee individually to find out when the best time would be to meet with them. This flexible approach provided the
best results and helped to begin to establish a feeling of trust, support, and optimism.

d. Topic(s) to be covered (session plan)
Table 19 outlines the general interview structure and approximate time allocation. Obviously each interview undertook its own path depending upon the interviewee and their feedback. The table was intended as a guide to ensure similar/comparable data was collected, thus making it simpler to compare and analyse at later stages. Each interview took about 60 minutes.

Table 19: Convergent interview guide

<table>
<thead>
<tr>
<th>Topic</th>
<th>Time</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction (to PhD, concept, and model)</td>
<td>1-2 mins</td>
<td>Researcher and co-researcher</td>
</tr>
<tr>
<td>Expectations of interview and requirements from interviewee i.e. role of interview in model development.</td>
<td>Included in above timing</td>
<td>Researcher and co-researcher</td>
</tr>
<tr>
<td>Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Review and feedback of Delphi study</td>
<td>5 -10 mins</td>
<td>Interviewer &amp; interviewee</td>
</tr>
<tr>
<td>b. Implications for future of printing industry (own thoughts)</td>
<td>up to 40 mins</td>
<td>Interviewee</td>
</tr>
<tr>
<td>c. Relevance of model (own thoughts)</td>
<td>up to 15 mins</td>
<td>Interviewee</td>
</tr>
<tr>
<td>d. Planning the way forward (group feedback sessions)</td>
<td>5 -10 mins</td>
<td>Interviewer &amp; interviewee</td>
</tr>
<tr>
<td>Thanks and conclusion – what to expect next, set standards for level of involvement</td>
<td>1 - 2 mins</td>
<td>Researcher</td>
</tr>
</tbody>
</table>

e. Inclusion of the co-researcher
The co-researcher is also the Managing Director of the case company, and took part in the Delphi study. His involvement in the interviews was less important in the initial sections which reviewed the Delphi study, but more relevant towards the middle and end of each interview where new ideas were
postulated. The decision to include him in the research collation was based upon three main factors

i. His ability to better review contextual feedback from the second section of the interviews, which will enhance analysis of this section.

ii. The cross-referencing nature of converging feedback/findings from two different interviews.

iii. The potential to breach any gaps or misunderstandings during the interviews (conducted in German).

f. Taping the session
Due to the small number of participants, the specific focus of each interview, and the involvement of a co-researcher, interviews were not taped. It was also felt that taping the interviews might intimidate some interviewees and formalise the whole process, thus restrict open conversation. This is not the aim of convergent interviews. Although not specifically desired, I took some notes. This was primarily due to the fact that the interviews were conducted in German (a language other than my native tongue). This was explained to all interviewees and did not pose any problems, or affect the results/feedback.

iii. How do convergent interviews meet the academic (understanding) and practical (acting) requirements of the project?
Convergent interviews were selected as the most appropriate way for the researcher to obtain entry to, and acceptance by, the group. This method also provided the scope for the researcher to assess relationships and uncover any potential or underlying issues which may hinder ongoing data collection. Thus, the focus of the interviews was more technical than practical or academic. A bridge between understanding 'what' issues a printing company will have to deal with in the future, and 'how' to make the right decisions to ensure a company’s future growth.

iv. Overcoming the shortcomings of conducting convergent interviews
As the interviews were used to obtain:

- group acceptance of the researcher,
- project understanding and ownership of the research topic by the group, and

- further support for the Delphi findings (improving rigour of Delphi study), the aspects of rigour, participation, and research quality must also be addressed. In terms of reviewing the results from the Delphi study, the benefit is naturally that it crosschecks the data from an alternative source, hence enhancing rigour of the initial research study. Rigour of convergent interviews themselves is obtained, as suggested by Dick, (2003a), by probe questions, which are developed from the information, divulged in previous interviews. This technique was used to uncover deeper feelings regarding the feedback from the Delphi study.

Group acceptance of the researcher and project understanding/ownership were matters guided by me during the interview process. Neither of these items presented problems during the participative research stages. A full description of the planning is contained within Appendix 3.

v. Study specifics

**Interview structure and flow**

The group included six employees, both male and female, who represented the key areas of an offset printing company. The smaller than average number of interviews reflected the small company size and small number of representative key stakeholders identified. This aspect, however is offset by the group’s flexibility and speedy reaction to conflict and change, as was witnessed in the group feedback sessions to be reviewed in the following section.

Two interviewers, the co-researcher and myself conducted the sessions. The results from each pair of interviews were compared and feedback was sorted for further questioning.

Each pair was selected and formed for the participants’ knowledge and practical involvement in a key area of offset printing, plus the complement to their partner. The major areas being: pre press, printing, and overall supervision/print management.
Although convergent interviews are designed to be open and free flowing, some structure was introduced to ensure a basis for comparison of responses. Each interview was split into three areas which all called for subjective responses.

- each interview began with a review of the goals and objectives as well as provision of an overview of future expectations from the work group and researcher.

- the next aspect of the interview was to obtain feedback from each interviewee on the findings of the Delphi study, as well as provide their own thoughts on the future of offset printing.

- Finally, each interviewee was asked to outline their decision process when faced with selecting a path of action for their MSOP which was either successful or in trouble.

Every interview lasted approximately one hour and was conducted during the quieter lunch time period, around the mid week days (i.e. not Friday or Monday as these days are too 'hectic' with normal production, and employees cannot find time to participate in interviews). The interviews were conducted on site at Werbedruck Petzold, in a separate meeting room.

Interviews were not recorded, however hand notes were taken. Some points could then be clarified when the comparison of interviews took place, as the co-researcher is German. It was also considered valuable to record the group’s feedback as the ongoing group feedback sessions were to be conducted with the same reference group.

**Presentation of feedback from interviews**

The findings and feedback from the interviews will be presented according to the separate sections of the interview i.e. introduction, Delphi study review, and interviewee own opinions. The final section will present the researchers review of the convergent interview process and its perceived worth to the overall project.
Part 1 - Introduction
This section was well received and very useful in establishing initial rapport between the interviewees and interviewers.

The goals of this part of the interview were
- to introduce the purpose of the research (in terms of immediate and future requirements)
- to negotiate and establish roles for each interviewee and the researchers, and
- to create an open atmosphere and address all concerns before commencing the action-oriented research proper

All, without exception, were very open and understanding regarding the research objectives and future project expectations. A feeling of equality was established between the interviewers and interviewees and an almost immediate sense of trust prevailed.

The only potential draw back initially was the surprise by employees at being asked to provide feedback for a research project. Once it was made clear that their skill, training, and practical expertise were the reasons behind the request to participate interviewees’ apprehension reduced. It was then able to clarify further that the ‘offset printing-related’ feedback and ideas they provided was intended to complement my ‘theoretical business’ knowledge and thus close gaps in the research results and ultimately overall findings and recommendations. This was an important point as it defined the information requirements, roles and value of each participant. This aspect played a major role in opening the responses and heightening their value.

Part 2 - Review of the Delphi study and interviewees’ thoughts
The goals of this section of the interview/discussion were to:
- encourage open discussion and free thought
- acquire further justification (or otherwise) for the results obtained from the Delphi study, and
progress the conceptual development of the ultimate management tool by including practical feedback and experience

These goals were achieved with a favourable result in the first instance and some very valid considerations were postulated in terms of the second and third interview objectives.

Each interviewee agreed for the most part with the responses provided by the ‘Delphi study panel of experts’. Technology was also felt to be an important factor influencing the future success of small to medium sized offset printers.

Despite the various backgrounds of each interviewee, all held technology as being important. A very interesting point raised by all, was the parallel importance of personnel. In one way or another, regardless of interviewee’s, area of expertise, gender, or age each person provided the feedback that technology would bring no positive effect if it was not coupled with properly trained, skilled, and motivated staff.

One interviewee coined the phrase ‘you can put the world’s most advanced workflow system, print machine, or densitometer into a company but if no one knows how to use it, or is willing to do so, there is no benefit at all.’ This took the discussion further into human resource issues and eventually the culminated feedback suggests that technology coupled with well trained, well educated, good employees is the ultimate key to success for micro to small-sized offset printers. This seems a logical and practical extension to the Delphi results as it places the issue of company success in context. In other words, a small company with tight resources and few employees (usually all over loaded) needs to ensure it is up to date with technology and also that it has the people who can operate it and produce the benefits the technology can deliver. It also concurs with the technology/HR pool concept postulated by Penrose, (1959).

Another aspect, alluded to in the Delphi study via its relative low rating, is the importance of external issues such as political, environmental, economical, and legal considerations. The ranking of these issues came towards the end of the Delphi study, during round two. Interviewees also identified external factors as being less of
a concern to the future success of offset printers and provided a reason why. Simply stated, these are factors that cannot easily be influenced by managers/owners of a company. They were recognized as an important consideration, however, as very little can be done to directly influence them on a day-to-day business basis, they were considered less vital to a firm's success. The feedback provided stated that they could trigger a management decision and should be considered at the end of each evaluation, however, could not rightly be included within the company evaluation as a factor of success. The logic of this information in real terms is quite true. Managers of micro to small-sized offset printing houses are already overloaded with negative influences and tough decisions, but should not be encouraged to operate according to them alone. On the other hand external factors are a given and do influence micro-small firms a great deal. This posed another matter for consideration.

The Delphi study resulted in a split of key functional areas that would influence the success or failure of micro to small-sized offset printers. Feedback from the convergent interviews refined this information by qualifying further, which areas were of particular importance over others. The findings could perhaps best be explained in visual terms. Diagram 16 attempts to expand the Delphi study findings, in terms of which factors influence the success of offset printers, based upon the feedback obtained by the convergent interviews. It shows how the convergent interviews served to refine the findings of the Delphi study by superimposing a ‘real life’ aspect, in terms of the current offset printing practices, onto the theoretical base.

Diagram 17 was developed as the result of the feedback from the convergent interviews, in line with the considerations brought to the fore by the Delphi panellists. The model was reviewed, tested and improved via the group feedback sessions and will be discussed in section 4.3.
Diagram 17: Management considerations for growth (based upon Delphi study and convergent interview feedback)

Part 3 - Outline interviewees’ own action path

The goals of this section of the interview/discussion were to:

- maintain open discussion and free thought
- obtain explanation for the Delphi study findings and expand the existing conceptual frame in terms of ‘real life’ offset printing practices

These goals were met, in particular the first point. Most interviewees admitted they had never given much thought to the problems faced by management. The prospect of owning their own offset printing plant and being faced with a decision of how to survive, or grow as an ongoing concern, was something which required a lot of thought. There was even some discomfort involved with the question, as two interviewees admitted they hadn’t realised how difficult and compromising a task management has to carry out at times.

One important point raised by this part of the interviewing was that a review of the current situation of a small printing plant was a good starting place for a decision about the future. This may sound basic, however in application it translates to an assessment of the controllable factors such as existing print technology within the firm, the existing employees and their skills base, existing client base. It was felt that these existing factors would greatly influence the direction of future activity, in most cases. They can also be easily reviewed in terms of external factors. And, furthermore, should be 100% in order before any growth decision/activity is
undertaken. Diagram 18 summaries this concept in relation to MSOPs. It is a conceptual diagram of a problem solving system, developed by the interviewees taking part in the convergent interviews.

Diagram 18: Determining factors for consideration when deciding how a micro-small sized offset printing plant should grow.

The approach of management should be a ‘review/decision’ based upon existing and past decisions. This approach is both logical and more importantly ‘safe’, especially given the tough economic conditions and tight financial circumstances. At present the tough economical situation renders radical management decisions, in most cases, as too costly to support with the necessary technology, personnel and marketing. Such a planned and systematic approach may be worth considering in context for the development of the ultimate framework.

Interesting issues
The following issue was raised via the convergent interviews and has been noted as worthy of further investigation as part of this research project: the importance of innovation in the future success of MSOPs.

Werbedruck Petzold is in fact a highly innovative company in comparison to other MSOPs within the German market. Several industry prizes for innovation and the
gold medal in the 2006 European Printer of the Year competition attest to this fact. In the past two years three new print products have been developed and released by Werbedruck Petzold. In terms of overall growth (which has affected each of the five key management areas identified to date in the study – not including external influences) innovation has been the key determinant. Company growth has been defined by company innovation stemming from technology.

As such, I will pursue an innovative approach to company growth and growth decisions. This aspect is both fresh and very relevant to MSOPs. It is also an area where managers, less trained in classical management skills, but more technical and practically oriented may experience more affinity. A decision tool centred on innovation could fit the market well. This consideration was tackled, evaluated, and refined during the group feedback sessions.

vi. Considerations

Each pair of interviews was useful as they both supported, and expanded upon, the Delphi study findings. The depth they added to the findings of the first research phase served greatly to inform me of the issues existing within the offset print industry.

In general, all interviews were perceived as being open and worthwhile. They provided an excellent opportunity to establish themselves and their purpose, plus gain support for the ongoing research phase i.e. group feedback.

There were some issues which had to be dealt with. All were manageable: the small number of participants, plus their acceptance of the interviewers made this task less difficult. By way of review, the following issues required note.

- Split of the interview
It became evident after the first pair of interviews that the first part of the questioning/discussion was awarded far too much time and some misunderstandings occurred. The remainder of the interviews applied less emphasis upon a review of the Delphi study, as this was too limiting and tended to curtail open feedback. Interviewees were reluctant to provide differing thoughts to those provided by ‘the experts’. This matter was clarified
and the interviews were conducted in a more open-ended fashion. Instead of interviewees being asked if they agreed or disagreed with the results of the Delphi study, they were asked for their opinions about the questions put forward in the study. This generated much more feedback and various alternative lines of thought, for further consideration. The major factor being that although technology plays an important factor in the future success of a printing company, without skilled and well-trained employees, the advanced technology would be useless.

- Conceptual difficulty of the final area of discussion
The final point for discussion centred on each interviewee’s considerations as managers of MSOPs. This topic seemed out of the realm for most, as they had not often considered being in that position. As a result conversation ended abruptly and interviewees seemed ‘lost for words’. Both the researcher and co-researcher agreed it would be more valuable to intervene and provided practical examples of the type of information required in order to restart discussion. This worked in five out of six cases. The remaining interview was left somewhat up in the air. However, the interviewee did mention that although no real information came to mind, it was obvious what a difficult position it is to be a manager of a MSOP plant given the current circumstances. All others went on to provide relevant information that has been reviewed in previous sections.

In summary, the convergent interviews met all of the objectives set out for them:

- they succeeded in providing a positive entry for the researchers,
- they established an understanding for, and support of, the overall research project,
- they supported and refined the results of the Delphi study, and
- they provided valuable information for further consideration and testing.

They provided an excellent research phase in between the broad scope of the Delphi study and the specific, hands on group feedback sessions.
This concludes the section reviewing the initial phase of research undertaken to obtain information and establish the problem situation. The remainder of the chapter deals with the participative action-oriented research study undertaken as a result of the findings from the initial research phase and the literature review. All three components work together to reinforce the feedback and findings from each other, in a bid to increase the rigour in accordance with the research objective to extend the field of theory in the area of MSE survival and growth.

4.3 Group feedback analysis (GFA)

Background
This section presents the data analysis for the final data collection device to be discussed - group feedback analysis (GFA). Unlike section 4.2 which provided both the data and findings, in order to depict the background to the group sessions, this section will provide only the data analysis. The findings from the GFA combined with the initial phase of research and the information obtained from the literature review will be presented in Chapter five. As such, Chapter five will unite the entire project and learning experience by presenting overall findings and recommendations. It will summarise the overall contribution the study makes to current knowledge in the area of MSE growth, specifically looking at offset printers.

Section 4.3 will be divided into three sections:
- a description of the data collection process
- analysis of the qualitative data/feedback, and
- considerations for the findings in terms of the contribution to knowledge.

A short section covering the issues related to the data collection and analysis will conclude the section.

Group feedback analysis is aimed at exploring the views of the key stakeholders which represent the main group of actors within the problem situation. In this case it is a small group of employees from the research company who represent the main areas within a MSOP. The sessions were conducted in an open and conversational manner and, for the most part, run by the participants themselves. The process and result will now be presented.
The study group was the same as that involved in the convergent interviews and thus, each participant was already familiar with the research topic and researcher. In such a small-scale study I felt it was more important to delve deep into concepts and explore them with a constant group of actors, than to unnecessarily complicate the study with different work groups to no real empirical benefit. This means that introducing a different group of stakeholders/actors would not have strengthened the results in an empirical sense, but it would have meant to begin again with establishing important aspects such as understanding, trust, confidentiality and group dynamics. Thus, I felt it was more important to keep these vital 'human' factors stable and obtain richer information, than to introduce another new group and more variables which still would not have satisfied the requirements for the data to be truly globally applicable. This decision is also in line with the research objectives and design.

a. The data collection process
Each of the three sessions was conducted according to operational and planning guidelines offered by Heller, (1969) and Dick, (1997b). Handling the sessions in this manner provided the maximum flexibility within sessions, and ensured involvement of each participant as ideas were developed and revised. The process was cyclical in nature as each session refined the ideas brought forth in the previous. These review phases also served to test and fine-tune the feedback attained in the initial research phase and was supported by current theoretical literature. These aspects were introduced to compensate somewhat for the small sample size, should the question of rigour arise. However, given the goal of the project, the level of repetition and triangulation, and the extent of the literature review, the overall results do provide valid findings.

The make up of each session is outlined below. Results were collated in this manner during the first session and the following two sessions were used to consider one specific outcome i.e. a framework. Due to time restrictions facing the participants, sessions were managed by participants in terms of information collation and write up, but the general analysis was managed by the researcher. This represents a good balance between the original researcher-driven technique presented by Heller, (1969) and the more participative approach proposed by Dick, (1997b). In this case,
the combination of participant/researcher involvement is justifiable as the purpose of
the study is theory oriented, and the time restraints on participants allowed for few
other alternatives.

Table 20: GFA plan and content (group session 1)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Content</th>
<th>Action</th>
</tr>
</thead>
</table>
| Intro & goal definition | - what a gfa is about
                      - confidentiality
                      - purpose of the session and what I hope to achieve
                      - potential barriers (understanding – then ask for clarification
                      disagreement – we will find a solution as a group)            | researcher to explain
                                                                                       NB: ensure seating with space (for privacy)                        |
| Develop questions       | - each group member will be asked to suggest 2-3 questions to get the info needed
                      1. Write down 2-3 major strengths of the model
                      2. Write down 2-3 major weaknesses
                      3. Write down 2-3 changes which could be useful                   | researcher to pose initial questions
                                                                                       Answers to be written by each person on separate cards (i.e. each person gets three cards) |
| Collate questions       | get group to collect and group their own comments into like groups     | Comments about same topic are grouped together (cards)                 |
                      - get group to write up a question from each group of comments     | On a big sheet of paper, write up questions from each topic area
                      - write up catch all questions not covered by groups own work       | NB: put a scale at the end of each question.                        |
| Answer questions        | - get group members to answer questions separately on cards
                      - read out question, group members answer on cards provided
                      - Group collects cards (face down)
                      - Rank cards for each question 1-7
                      - Work out mean & interquartile range                              | Group                                                                 |
| Prepare discussion      | - discuss each question based upon the scaled responses and spread/median | - seek consensus, explanation or alternative views/considerations     |
| The report              | - seek group’s permission to use results for PHD analysis              | OK (work feedback into model)                                          |
Session 1 took approximately two hours and was useful in achieving the following goals:

- Involving the stakeholders in ‘real life’ aspects of the theory which had been discussed (up to that point) in the convergent interviews.
- Providing a crosscheck for data obtained to date in the initial research phase.
- Leading to the development of a real-life framework to bridge concept and reality.
- Establishing the initial evaluation, alteration, testing, evaluation cycle to refine the model.

Sessions 2 and 3 served to evaluate and review the framework in terms of the offset printing system identified in Chapter three. These sessions were much less formal than the original and took the form of open discussions about one particular topic rather than a review of several issues as in session 1. The results of all three sessions will now be presented. Discussion of their relevance will be undertaken in Chapter five which deals with findings and recommendations based upon those findings in light of their contribution to knowledge.

b. Analysis of the feedback

Session 1

The convergent interviews lead to the development of two models which represent the actual factors and forces impacting the success of offset printers (both in a positive and negative sense). These models (depicted in section 4.2, under the presentation of feedback from the convergent interviews) served as the stimuli for the GFA, session 1. Participants were asked to review their thinking and analyse it in terms of the problem situation. The following questions were identified by the group and then ranked and discussed. Due to the small number of participants (six) it is not necessary to show each individual response. Comment will be made in outlier situations. The following table highlights the groups’ feelings regarding the following two issues.

- The importance of each issue/topic (median). Group members were asked to rank the importance of each item on a scale of 1 to 7. One being unimportant and 7 being very important. The following scale was used to guide and conform responses by deleting some subjectivity.
The level of consensus regarding each rating (interquartile spread). Table 21 depicts the questions developed by the group in relation to the existing models, and their numerically ranked responses, based on the scale shown in Diagram 19. As the sample size is small, one must take care not to generalise the results. The ensuing discussion and outcome is of much more value to this study than the numerical summaries provided in Table 21. Any numerical data provided, serves solely to visually condense the information for the reader.
Table 21: Session 1 discussion questions and results

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>Median</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What role does culture play?</td>
<td>7</td>
<td>1.5</td>
</tr>
<tr>
<td>2. How strong is the influence of technology on the success of the firm?</td>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>3. How important are human resource factors?</td>
<td>6.5</td>
<td>1</td>
</tr>
<tr>
<td>4. How strong is the split between internal and external factors in terms of the company’s survival?</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>5. How important is the influence of external factors?</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>6. How useful is the model to date?</td>
<td>4.5</td>
<td>1.5</td>
</tr>
<tr>
<td>7. How important is it to develop a different model for each company system?</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>8. How important is the company’s product?</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>9. How important is the legal form of the company?</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

NB: High medians convey high importance of issues for further consideration, and high spread values indicate a relative lack of consensus.

The value of these findings will be briefly discussed as it leads to the ensuing discussion. However, the sample size was small and the figures should be viewed with transient interest only. What they did serve to provide was a focus for further discussion and model testing and development.

All factors played a seemingly important role with a slight emphasis on culture, product and people. In terms of culture this can be linked to the owner/manager’s style of leadership as it has been shown that this is often the driving force behind the company culture of micro-small firms. Culture and company leadership play an inherent role in MSEs and are central to all decisions. Thus, Diagram 20 places this aspect in a central and pivotal position with regard to the role played by an owner/manager in deciding upon growth and guiding the company’s future.
In addition to this, the company’s product and people were linked to the rate of technology and it was postulated that these items are interdependent and equally important. A very interesting point to note was the relevance given to human resource matters. This is in contrast to the findings from the Delphi study which placed operational and external matters higher on the agenda. A possible explanation could be the group of stakeholders i.e. they are all themselves employees, where as the Delphi panel were mainly executives and CEOs. Clearly both groups have different tasks and hold to different weltanschauungen, thus the varied feedback. In any case, the views of both groups of stakeholders are valid and should be considered further.

Lastly, all sources of primary data indicated the relevance of all of the various business units/factors. In particular, they highlighted that marketing, HR, and finance/legal factors should be balanced with production to ascertain the correct mix for planning for growth or survival depending upon the inherent wishes of the owner of the MSE.

The result of session 1 was to review the systems models presented up to that point and develop a consolidated image of reality which could be further reviewed and developed. The schematic ensuing from the group’s feedback, in light of the initial phase of research, is presented in Diagram 20. It introduces the three elements which impact MSEs, namely: the owner’s goals in driving the company, the impact of the external environment, and the internal operational mix of resources with which the company can plan and act in terms of the two preceding states, and it establishes the basis for further review.
Diagram 20: The factors and influences on the survival and success of a micro-small offset printing company.
Session 2
A second group session (to review the model in practice) was conducted following the initial group feedback session which discussed aspects brought to light in the initial phase of research, and developed a working model for a tool which could help micro-small offset printers assess their chances of survival and success.

Each group member was requested to take the schematic shown in Diagram 20 and review it within their work environment. Session two was aimed at reviewing this action and evaluating the validity of the model and/or making any necessary alterations.

The session was conducted in a less formal manner than session 1 as the task was clear and open discussion was the desired outcome. Furthermore, each individual team was to report on their own findings and observations, making a group approach redundant until the time for discussion. Teams were set up to achieve the following:
- to accumulate group findings and encourage discussion during the action phase between team members, and
- to apply focus to the key areas of the actors involved (prepress, print and management/supervision)

As such, Table 22 shows each team’s responses (teams of two). The teams reported the following pertinent observations which had been recorded during the two-week period of the model’s trial application.
Table 22: Observed results from session 2 following the use of the schematic shown in Diagram 20.

<table>
<thead>
<tr>
<th>Team</th>
<th>Observation</th>
<th>Action required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepress</td>
<td>a. The fit between personnel/HR and technology must be enhanced.</td>
<td>Review certain aspects of training and motivation and how they will affect the interaction between HR and company success.</td>
</tr>
<tr>
<td></td>
<td>In terms of a mature firm, potential areas for review are training and motivation.</td>
<td>The owner’s personality needs to be given a more important role, separate to the system, as it is such a strong determinant of a company’s survival/growth.</td>
</tr>
<tr>
<td></td>
<td>b. The role of the owner’s personality in directing the overall ‘feel’ of a micro-small co is pivotal and should be given further consideration.</td>
<td></td>
</tr>
<tr>
<td>Printers</td>
<td>a. Technology is somewhat removed from the model and should be included as a driving force behind the potential for growth.</td>
<td>Review the model in terms of the role played by technology (link this to HR and training).</td>
</tr>
<tr>
<td></td>
<td>b. Technology should be seen as an ongoing consideration which is closely linked to innovation and further product development i.e. it is the stimulus for growth potential.</td>
<td>Consider linking technology to innovation in terms of product/service development – enhancing the opportunities for survival &amp; growth.</td>
</tr>
<tr>
<td>Supervision/management</td>
<td>a. The role of the external environment is a given for micro-small firms. It should not be simply taken on as an ominous consideration but incorporated into the general planning.</td>
<td>Develop some method for introducing this concept into a working model to realise the opportunities and threats early enough.</td>
</tr>
<tr>
<td></td>
<td>Economical/industrial success and growth can be used to fuel company growth e.g. the cost of paper as a raw material and the incentives offered by paper suppliers.</td>
<td></td>
</tr>
</tbody>
</table>
All matters were discussed and resulted in the action plans stated in Table 22. Before reviewing the model, the group felt that a second trial period needed to take place to specifically review the role and influence of the owner/manager. Thus, session two ended in an agreement of the points listed in Table 22, and a decision to further review the role of the owner. Each team was sent away to observe the influence of the owner manager and comment on this aspect in relation to the company’s culture, business planning and the impact it had on survival and success.

A further two-week period was allocated for the collection of the team’s observations and reconsideration of the items discussed in Table 22.

Session 3
The final group feedback session provided the information necessary to build a bridge between current theory on small firm growth, conceptual modelling presented to date in the study, and the real world.

Due to the cyclical review of the discussion terms, support was found for the aspects unearthed in session 2. Furthermore the following points were raised about the role of the owner and how it should be included in a framework both reflecting the real world, and attempting to predict it in terms of factors affecting survival and success.

The following list summarises the main discussion points and observations provided by the group, regarding the role of the owner and his impact on the survival and success of the firm. It must be noted that I observed a sense of candidness as participants were slightly reluctant to reveal ‘the whole truth’ about their boss. However, the points raised were constructive in terms of the general objective to review the role of an owner/manager in guiding his/her firm.

1. Outside the firm the owner/manager handles most of the client contact and networking, in general this was perceived as positive for the company’s position (survival and growth).
2. The owner also made most financial decisions and legal negotiations and the employees also perceived this to be OK as it left them free to manage their own tasks.
3. The owner did influence the culture to a great extent. This was perceived as a rather negative aspect, especially as the firm enters its mature phase where morale and motivation are key issues for employees, and burnout or stress may be playing heavy on the owner. To this extent the acceptance of a partner or joint ownership was proposed as being potentially beneficial for the company culture and functioning. This fact was also raised in the literature review in Chapter two.

4. Future perceptions and desires regarding growth seemed to vary. Group members noted that the company was struggling to survive, despite its innovativeness, but still was not aimed at growing extensively. Keeping in operation was much more of an issue than fast growth. As such, each team advised that the owner/manager’s viewpoint must be established up front - before any growth directive is even considered.

The aspect of capped growth was worth pursuing and the researcher followed this up in a short interview with the owner to obtain his feelings.

The owner admitted he was under considerable pressure in terms of responsibilities, time, and financial issues. The idea of taking a partner was not desirable as it would mean ‘having to check every decision with someone else’. This is a typical entrepreneurial trait, highlighted in the literature review in Chapter two. The owner then went on to divulge that he was just happy to keep the company afloat with so many other printers going bankrupt around him. His focus is to support his lifestyle by balancing work with leisure. He is 50 years old, has been in the printing business since finishing his print training at 17, and his father was a printer before him.

Reviewing these two perspectives it became clear that it is important to establish a mechanism within the framework which would assess its applicability from the outset. Determining the goals of the owner/manager in terms of desire for growth was agreed, by the group, to be the best alternative.

c. Contributions to knowledge and aspects for further consideration
The observations and feedback obtained throughout the group feedback sessions were valuable as they provided evaluation, action and improvement based upon
ongoing review. The results lead to the evolution of a framework which has been
developed according to soft systems methodologies and has been researched and
refined via action-oriented, participative techniques. It will be presented, along with
the overall contributions to knowledge, in the final chapter.

d. Study issues
One generally acknowledged issue associated with action-based research (in fact,
qualitative research in general) is the lack of generalisability of results. In this study
the aim was not to obtain generally applicable results, but rather to review current
theory and set it within a very specific field for evaluation and review. The result of
the project provides a means to test concepts in a more quantitative way in future
studies. In this sense, global relevance was intentionally traded-off against local
relevance and richness of information and does not impact the study - as the study
succeeds in meeting its action-oriented goals and responding to the research
questions.

The second aspect of rigour is more than addressed via various methods of data
cross-evaluation including cyclical reviews, and triangulation with various other data
sources. These matters have been dealt with in Chapter three under the sections
reviewing the drawbacks and criticisms associated with SSM and action-oriented
research, and how this study addresses these concerns.

4.4 Conclusion
This concludes Chapter four and the analysis of the feedback provided during the
study. Chapter five will now fully consider the findings of the overall project in light of
the contributions they make to the current field of knowledge in the area of MSE
growth and survival. This represents the final dialectic discussion which brings
theory, research, and reality together. In soft system terms it is the application of
concepts to reality. In the sense of good action-oriented research it highlights the
end of a set of cycles which lead into ongoing review, alteration and improvement; in
essence, recommendations and actions for the future.
CHAPTER 5
FINDINGS AND CONTRIBUTIONS TO KNOWLEDGE

5.1 Introduction

The purpose of Chapter five is to unite the theory, research findings, and observations which have been discussed in previous chapters, to provide a complete picture of the problem situation, and how the research problems therein have been addressed.

The chapter layout will be split into several sections which address the contributions made by the research study to the given field of knowledge i.e. offset printing. A highlight of Chapter five is the presentation of a management framework for MSEs which assists them establish their current situation and what factors they should consider for their future survival and growth planning. This framework was evolved as a result of several inputs namely,

- an extensive review of small firm growth theories to date
- information from a global panel of industry-specific experts
- participative interviews and group feedback sessions from the key actors/stakeholders within the identified problem situation
- a case study history of an MSOP
- informal interviews with industry players (other MSOP owners, and the owner of the case study company)

Information obtained via these sources, and during the time of the study, was rigorously crosschecked with feedback from previous research phases and observations from a co-researcher. Constant industry observations and casual contact with print-related personnel throughout the entire period of the study, allowed me to further ‘sound out’ ideas and concepts in an informal manner.

The major contributions to knowledge are multifaceted as the study undertook several challenges when attempting to apply action-oriented research techniques to the relatively overlooked, and undervalued, private sector field of offset printing. Furthermore, the company size definition applied to the study i.e. ‘micro-small’ also represents an area of little empirical research and established theory. As such,
Table 23 summarises in which areas an extension of knowledge took place, and outlines which section of Chapter five will discuss these matters.

**Table 23: Contributions to knowledge and what part of Chapter five addresses them**

<table>
<thead>
<tr>
<th>Extension of knowledge</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Evolution of MSE survival and growth theory (new field)</td>
<td>Section 5.3 Implications of the study for theory</td>
</tr>
<tr>
<td>b. Focus upon offset printing sector (specific industry split with little work done in this area)</td>
<td>Sections 5.2 Reviewing &amp; addressing the research problem (based upon data presented in Ch 4)</td>
</tr>
<tr>
<td>c. Application of action-oriented research applied to corporate world, soft system such as small business</td>
<td>Section 5.3</td>
</tr>
<tr>
<td>d. Development of a framework specifically for mature MSOP (recognising inherent, external and internal factors)</td>
<td>Section 5.2 &amp; 5.4 Implications of the study for the real world. (Framework presentation in Framework 1)</td>
</tr>
<tr>
<td>e. Establishment of a framework which can be used for future research studies with the aim of obtaining more empirical results.</td>
<td>Section 5.2 Opportunities and implications for ongoing research</td>
</tr>
</tbody>
</table>

The unification and relevance of the study, as presented in Chapter five can be summed up in visual terms. Diagram 21 depicts how the various elements of theory, research, and observation are brought together in the overall project to address the research questions and provide a true extension of current knowledge in the field of micro-small offset print.
Diagram 21: Project overview showing how the research problem was addressed to develop a useful management tool for micro-small offset printers to assist with decisions regarding survival and growth.

The entire project was conducted in a cyclical manner and adopted various research techniques to cross check information and observations against other sources of data, in an effort to reinforce research findings. The three levels of arrows in Diagram 21 above indicate the triangulation which was integrated into the analysis of the findings.

Chapter two reviewed extant theories related to the survival and growth of MSEs. It was also clearly and logically argued in Chapter three that a soft systems approach is an appropriate method within which to frame the action-oriented study. This review served to highlight: the gaps in current theory, and potential issues for further examination. By presenting the discussion in a critical manner it was possible to establish the benefits and drawbacks of theory in relation to the case at hand. This in turn, provided a focus for the research questions, and how to obtain and analyse the data.
The ultimate aim of the study was to expand theory and knowledge beyond its current boundaries. Sections 5.2 to 5.4 review how this has been achieved in both a theoretical and practical sense. This review will delve into the various contributions the study makes to the field of knowledge related to the survival and growth of MSEs, as viewed from a small, participative and qualitative study perspective. Special note must be attributed to section 5.2 which presents the overall study finding in the form of a three-step framework which will allow owner/managers of MSOPs to evaluate their survival and growth potential. This section is the culmination of the entire action-oriented review and thought generation process, and entails the study’s main contribution to knowledge.

By way of conclusion to the overall project, the final sections of Chapter five review the limitations to the study (5.5) and raise some implications for further research (5.6)

5.2 Addressing the research questions

This section of Chapter five aims to present the findings from the data analysed in Chapter four in terms of answering the following research questions. As a precursor to this section it is important to note that the literature review revealed one clear point: that there is generally limited research related to MSEs, as they are typically excluded from formal reporting procedures. The reasons for this are unknown and are also not clarified in theory. Possible reasons for their exclusion could be

- the difficulty in physically identifying these companies, and obtaining the data,
- the perceived lack of importance (although this is changing, at least in Europe), and
- the focus (and funding) for studies concerning larger scale operations/organisations is more forthcoming.

These are possible causes nominated by the author and may in fact be misplaced however, the literature served to provide no information to the contrary. Thus, in essence there were few specific notions to be drawn from extant literature and, as such, can be argued that the overall study represents a contribution to knowledge in terms of survival and growth theory for MSEs in general.
In specific terms, it will now serve to restate and review the research questions/problems individually, thus returning the focus to MSOPs.

**Main problem:**
How can managers of mature micro to small-sized offset printing plants in Germany/Central Europe plan for survival and grow into the future?

**Sub problems:**

a. Can a management decision tool be developed to assist this decision and growth process in the mature company?

b. How would such a tool be formulated to ensure both effectiveness and acceptance?

Each question will be evaluated in terms of concurrence with current research/theory and relevance of findings from this study in an effort to highlight the key contributions to knowledge made by the entire research project.

**5.2.1 Addressing the main research question/problem**
How can managers of mature micro-small offset printing plants plan for survival and growth?

The literature reviewed in Chapter two provided a clear picture that there are numerous propositions aimed at helping small firms address growth, but no one all-encompassing model exists, as yet, which can provide all the answers, in all cases. Several key summary papers conducted over the past decades came to this conclusion and support this claim (O’Farrell and Hitchens, 1988; Gibb and Davies, 1990; Snuif and Zwart, 1994; McMahon, 1999; and Barringer et al., 2005). In terms of MSEs there is a very strong case for contingency and complexity theories such as those expounded by Flood, (1999) and Flood and Carson, (1988). The qualitative findings of this study also support a complexity perspective. All research techniques applied produced alternative feedback, based upon the ‘weltanschauungen’ of the person providing the feedback. It can be argued that MSEs are well represented by small studies as they do in fact allow for the level of individuality which exists. The depth of information provided during the research project provided a good deal of local relevance, what it failed to provide was global generalisability. But, this was not
the aim of the study and, according to factors unearthed in Chapter two, is not the typical or desirable situation affecting MSEs. There is a call for contingency, individuality, and applied decisions based upon a soft systems review of each case as supported by Checkland, (1999) and reflecting, to a certain extent, the principles of Dick’s, (2003c) action-based, individual systems review approach. This finding (supported in both literature and research outcome) is not detrimental to the overall field of research as the aim of good research must not always be to achieve a universally applicable law, tool, or method. In this case the research serves to provide a response which is both tailored to the research problems, and addresses the extant gap in practical assistance, thus building theory.

Finding 1: Managers of micro-small firms must adopt an individual approach to their companies’ survival and growth, and cease looking for pre-packaged, generic responses. They must also review their plans continually.

A second issue brought to the fore when considering the general research problem is the relevance of stage of growth models which have dominated growth theory in the past. A review of these models also presented numerous alternatives and options to be considered by the business owner. Aspects ranged greatly, and for the most part either totally contradicted, or totally reinforced, each other. However the theories relating to more organic style growth (Adizes, 1979), and business phases or cycles/gestalts (Miller, 1981) provided some good considerations in terms of contingent and flexible growth theories. Convergent interviews and group feedback also provided confirmation that universally applicable growth stages would be difficult, if not impossible, to establish for MSEs. One aspect presented by the research was that a MSE can often depend upon one client. It can start up as a response to the needs of this client and grow with the client. Losing the client would result in decline, however the acquisition of a new client or renewed contact with the departing client could put the company back to the start up phase – a progression not ‘typical’ for successionally-based stage of growth models. As such, another key finding of the study is that, at the micro enterprise level, flexibility is the key to survival and success and this ‘cannot’ and indeed ‘should not’ be modelled too laboriously.
Finding 2: This study disagrees, to some extent, with the use of universally applicable stage models when applied to MSEs, and supports the adoption of situation specific review, decision-making, and action taking.

Flexibility is often an inherent part of MSEs, resulting from the nature of the business environment. Furthermore, the personality of the owner/manager of a micro-small enterprise bears a certain amount of influence on the decisions taken within the company. The role of the environment and owner’s personality is given due attention in terms of small business growth. Chell et al., (1991) support the claim that entrepreneurs (typically small business owner/managers) believe in an instinctive, flexible management style which would suggest variation amongst management traits. This is reinforced by studies on owner/managers which, in general, fail to provide a unique set of characteristics which lead to an entrepreneurial style of leadership aimed at growth and success. The previous claim relates in part to the phenomenon that owner/managers (entrepreneurs) are purported as possessing a high need for achievement (McClelland, 1961) and yet demonstrate signs of being driven by factors other than their company’s financial success in terms of capping their company’s growth at a certain level. This observation was first introduced by researchers such as Stanworth and Curran, (1976) and has been supported more recently in studies by Beaver, (2003) who found that owner/manager’s goals varied and so did their approaches to company management. This study can provide some qualitative support for this theory as the interviews conducted with the owner of the case study company over the research period did highlight his desire to ‘be able to afford a good life’ but not at the expense of his free time. In the study project the owner/manager displayed an atypical need for company growth, but a typical capped growth/lifestyle approach. It can be said that in his case, a framework aimed at growing his company would more than likely not be adopted as this would provide results (and indicated time requirements) not in line with his personal objectives and company goals. As such, his own desires play an equally important role as the forces of the external environment and internal company issues, and must be given equal consideration when planning for survival and growth.
Finding 3: MSE owner/managers should consider
- Their personal objectives for their company,
- The environment (opportunities and threats), and
- Their company's potential to meet the objectives with their internal mix of resources, given existing and potential, external opportunities and threats

This presents the major findings in terms of addressing the first, general research question/problem in light of the literature reviewed and the primary research undertaken as part of this study. The next section will present a similar review with regards to the final set of research questions.

5.2.2 Addressing the sub research questions/problems
a. Can a management decision tool be developed to assist this decision and growth process in the mature company?
b. How would such a tool be formulated to ensure both effectiveness and acceptance? (what factors should be considered?)

The response to part ‘a.’ of this question refers to the findings related to question one. As such, it must be said that no universally applicable, static model for determining and guiding MSE growth is possible. It would be counterproductive to apply one fixed model to a situation known for its internal, external, and inherent flexibility and complexity. Although this seems contrary to growth modelling theory to date, it is not. This statement does not dismiss all extant theory, but rather embraces it. In the true sense of contingency theory it implies that potentially all propositions are applicable in some situation, but no one is likely to be applicable in all situations. Feedback from the group sessions conducted as part of this study also alludes to this aspect in terms of the variable contribution of the environment (in this case especially technological development), and owner/manager perspectives and goals for the company. In response to the first part of the question posed above, it is possible to provide the following finding in light of the literature reviewed and feedback obtained from this small qualitative study.
Finding 4: A flexible management framework can be developed to assist the decision and growth process in the mature MSOP, but it is not possible, or desirable, to develop an all-encompassing model for growth.

An interesting aspect of growth model theory is that of a company’s prescribed life cycle. While I feel these theories somewhat restrain the potential of small firms by unnecessarily restricting their inherent flexibility and situational complexity, one relevant point will be expanded upon. This relates to the research conducted on the problems associated with various life stages, in particular those experienced by mature firms, as this relates to the case company. Once again, there is no conclusive empirical evidence regarding the specific types of problems encountered by mature firms. There is neither agreement upon an exact definition of maturity (or other stages, for that matter), nor agreement upon the variation between the types of problems based upon the size of the firm. However, the general acknowledgement that different problems are encountered at different points in a company’s ‘life’ seems both logical and valid and was supported to some extent by the feedback provided during the group feedback sessions which reviewed the changing role of the owner/manager, personnel, and production matters. To this extent, the literature highlighted the following problems regarding human resource issues faced by small mature firms: motivation, training, and retention. Rutherford et al., (2003) highlighted the importance of staff retention during the mature phase and this was reflected in the attitudes of the study group, observed by the researcher throughout the study. In terms of identifying factors which lead to a company’s success, group participants ranked human resource issues quite highly, while Delphi panellists ranked more external/organisational matters higher. Group members also provided a link between the adoption of technology and its conversion into an innovative competitive advantage via personal input. The attitudes expressed as part of the study revealed that technology was linked to innovation and the adoption and transfer of technological input into innovative output was dependant upon both well trained and motivated staff as well as a strong, directed, innovative leader. This study finding is supported to some extent by Baron et al., (1999) who provide some subjective support which links the attitudes and actions of the owner/manager of small firms to the HRM issues which prevail. Another key study finding is that purported by Penrose around half a century ago. Penrose, (1959) reported on the value of personnel and technology in developing a competitive edge or niche. However, to
the best of my knowledge no study exists which links human resource factors such as motivation and retention, and the role of the owner/manager to the transfer of technological input into innovative output in terms of MSEs in the mature phase (or at any other phase). And, as yet, no study has tested the role of technology to create opportunities for innovation, combined with the influence and input of the owner/manager of a MSE in developing the actual innovative products/services, and the role employees take in acting upon, testing and refining them. This represents a contribution to the field of knowledge related to mature MSEs when considering their survival and growth options.

**Finding 5:** In terms of the case study company, the adoption and transfer of technological input into innovative output was observed as being dependant upon both well trained and motivated staff as well as a strong, directed, innovative leader.

The findings above provide a logical introduction to addressing the final research problem (part ‘b.’). How could a useful and relevant model/tool be formulated?

The entire research study and literature review clearly highlighted the following
- that no ‘one’ model is capable of procuring growth in mature firms, operating within the offset printing sector within Germany/central Europe,
- the importance of the external environment,
- the joint impact of technology and human resources on innovation, and
- the vital role of the owner/manager in guiding his/hers company’s survival and growth.

Thus, a useful framework must address these matters in order for it to be considered relevant. The usefulness of such a framework is determined by its make up, and the factors it comprises, as well as their relevance to ‘the real world’. A prerequisite to ‘real world’ usefulness is the ability of the model/tool to reflect the underlying system. In this way functional aspects of the firm should be reviewed and considered in any decisions regarding a company’s survival and/or success. The following section deals with the development of these findings.
Feedback from the Delphi study and group interviews/sessions served to identify functional aspects within the company which should also be considered in relation to their impact upon company survival and growth, namely:

- legal/financial
- organisational
- technological
- environmental
- human resource
- marketing

Of these, the following breakdown was identified in terms of which matters were external, internal, and a mixture of both.

This functional breakdown draws similarities to the functional breakdown provided by Huang and Brown, (1999) and is considered relevant in terms of its ability to define the MSE system, in operational terms.

**Finding 6:** The usefulness and relevance of a framework for assisting with the assessment of a MSOPs’ survival and success should reflect the functions of the underlying systems in terms of its operations.

An additional finding of this study, and another of its contributions to knowledge in terms of MSEs, is the internal and external importance of technology. This is particularly relevant to companies operating in technology driven industries such as offset printing. A key study conducted within Germany by Gehrke and Grupp, (1994) relates the importance of developing a competitive advantage via innovation but does not fully address the role of the staff or owner/manager in this process. The follow-up group feedback sessions conducted as part of this study did look into the influence of
the owner/manager in terms of presenting growth potential and alluded to the general importance of his skill, opinions, and outlook in this respect. The group also highlighted the importance of human resources when applying innovations, developed as a consequence of technology. Although the results were not designed to be empirically applicable they do provide a very case specific set of values and rules which apply in at least one case. Given the supposition that MSEs are complex and contingent, and that no one model will ever be sufficient to explain company survival and growth within this group, the qualitative feedback does provide a solution and an affirmative answer to the final research question. A flexible framework (not a static model) can be developed which is both relevant and useful for helping one MSOP in Germany to determine and assess its survival and growth potential. This is presented in Framework 1, and can be seen as an extension of theory or a contribution to the existing knowledge regarding MSE survival and growth. It is the result of a specific, qualitative, action-oriented and theory-building project. The generalisability of this model requires further consideration and will be dealt with section 5.6.

Framework 1 represents the culmination of current theory and the feedback and cross-referenced data obtained via the research project. It provides an excellent tool for further evaluation and testing, and was developed and put to trial in a true, cyclical, action-based approach. It incorporates three steps which address the key elements identified throughout the study and brief testing phase.
FRAMEWORK 1: A three-step framework for assessing the survival and growth potential/propensity of a micro-small enterprise (offset print sector)

Step 1: INHERENT ISSUES
Assess the owner/manager’s objectives and goals for the company
- Is growth desirable?
- Two possible answers
  - If no, then plan for capped growth or survival using the operational company model in step 3 (or other as defined by owner/manager i.e. merger, buy-out and similar).
  - If yes, plan for level of growth and methods to achieve it based upon the operational company model in step 3.

Step 2: EXTERNAL ISSUES
Evaluate the state of the external environment
The following analogies provide some potential environmental scenarios in which micro-small companies may find themselves. The environment itself can be seen as a wave which has peaks and troughs over the short to medium planning period. A micro-small firm should learn to ride these waves and not try to dive under them or crash through them. The key is to avoid the ‘breakers’ via planning. In the case of an offset printer, technology is the driving force behind the waves and should be used to develop innovative advantages.

Diagram 22: The environmental wave which all companies ‘ride’
Waves are uneven and not always predictable and are initially driven by external factors over which the MSE has little influence, and to which must simply adjust.

Progression of time

Peaks can be caused by external factors such as improving economies, better tax/employment laws, lower interest rates, or simply industry cycles, or internal factors such as the introduction of new products and services, customer acquisition, a successful marketing push/promotion and the like. Troughs can be caused by all of
the above working in a negative way, and much more such as, increased competition, involuntary staff reduction and so on.

In terms of mature firms Churchill and Lewis, (1983) and Kazanjian, (1988) find that external issues are more prevalent during initial life cycle stages and internal factors become more important at later stages. However, as with all of the findings presented in the literature, MSEs do represent a more radical set to which to apply general models and theories as, due to the complexity of this sector, the theory is only as strong as its next test/application. In terms of the environmental wave, mature firms should try to avoid creating or arriving at breakers via the use of innovation, and carefully guarding the functional aspects addressed in step 3.

The affect of innovation can in fact shift the environmental curve for the company. This is visually depicted below.

![Diagram](image)

Conceptually, the blue line represents a possible effect of introducing an innovative product/service. The company, can in effect, increase and flatten the wavelength thus controlling its external business cycles better. Continual innovation can theoretically keep increasing the wavelength, as a company matures, for further independence from external factors.

The key assumptions are that a MSE cannot avoid the environmental wave, neither can it over or under perform without attracting issues. A company must find a method to ensure the environmental wavelength is even and ongoing over time. In the case of a technology driven offset printing plant, technologically driven innovation could provide the key. This concept is summarised in the final wave Diagram 23.
Diagram 23: Potential management strategies for the environmental wave for micro-small enterprises (offset printing sector)

Critical points

Continuing company wave

Market entry

Alternative market exit

Environmental wave

The critical points represent times when the company needs to take actions (in the case of mature MSEs, internally driven actions) to avoid negative outcomes. A mature MSOP might like to utilise technology/production to develop innovative methods to achieve an advantage or refresh products/services or markets. In any case a critical point highlights the need for action, if growth is the desired outcome!

Capped growth and lifestyle firms should attempt for a stable and flat curve which sits above the environment wave in order to assure at least moderate returns above break-even levels. The third and final step involves addressing the internal functional aspects of the company system, and is depicted in Diagram 24.

Step 3: INTERNAL ISSUES

The final step requires focus upon the internal aspects of the system under observation (the problem situation). By doing so a company can focus upon specific functional areas in terms of opportunities and potential issues. It is also an excellent way to establish the source of innovation. In the case of offset printing (a technology driven company) technology provides the impetus for innovation and is central to all other decision regarding avenues for survival and growth. Diagram 24 was developed as a consequence of the feedback obtained throughout the various reviews conducted within this study. To this end it has been tested within the given problem situation, to some extent.
Diagram 24: The internal factors and influences on the survival and success of a micro-small offset printing company.

EXTERIOR

PRESSURE

ECONOMIC
(Germany & EU)

EXTERNAL

PRESSURE

ENVIRONMENTAL
(new markets opening from East)

STEP 2:
external review

STEP 1:
owner’s wishes

STEP 3:
resource mix

INTERNAL

EXTERNAL

INTERNAL

TECHNOLOGICAL DEVELOPMENT

ORGANISATION & CULTURE
(small offset printer in the mature phase)

STEP 1:
owner’s wishes

STEP 2:
external review

STEP 3:
resource mix

MARKETING
Issues:
- insufficient strategies
- new markets
- changing segmentation/customer groups

PERSONNEL
Issues:
- training
- motivation
- retention

FINANCE
Issues:
- availability of funds
- cash flow

LEGAL
Issues:
- legal ownership & financial responsibility

TECHNOLOGY & PRODUCTION

TECHNOLOGICAL DEVELOPMENT

EXTERNAL

PRESSURE

ECONOMIC
(Germany & EU)

EXTERNAL

PRESSURE

ENVIRONMENTAL
(new markets opening from East)
The three steps should be carried out in a sequential manner as former steps have bearing upon latter. A typical application of the framework could be as shown in Table 24 (this was indeed the case for the company which took part in the study).

Table 24: Application of the three-step framework to an MSOP

<table>
<thead>
<tr>
<th>STEP</th>
<th>CONSIDERATION</th>
<th>FEEDBACK/ OBSERVATION</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Inherent issues</td>
<td>What are the goals of the owner/manager in terms of the company’s future?</td>
<td>In the case study company, large-scale growth was not the goal.</td>
<td>Thus, in terms of the model this means using and reviewing the following steps to assure survival and some profit levels without expansion. (NB: it is also of value to review the owner’s goals on a regular basis to ensure company actions are in line with plans to avoid a conflict)</td>
</tr>
<tr>
<td></td>
<td>Is growth desirable and if so, to what extent?</td>
<td>The goal in the short term (1 yr) was to handle debt and turn enough profit to afford the owner a “comfortable” lifestyle.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If not, what is the desired outcome of company operations?</td>
<td>In the mid term (2-5 yrs), the owner wishes to sell the company and leave the field of full time work. This means showing good balances to attract a good sales price.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Growth was explicitly not a goal of the current owner/manager as this would entail a loss of control.</td>
<td></td>
</tr>
<tr>
<td>Step 2: external issues</td>
<td>What are the overriding external factors which affect the company in terms of survival and the potential to generate profit?</td>
<td>Technology and foreign competition are the two most relevant external factors which impacted the company at the time of the study.</td>
<td>Thus, the company is not only riding the wave, but also attempting to raise the entire wave to new ground by approaching new markets. Interestingly, each new product came at a critical time when innovation saved the company from the effects of a narrowing market share.</td>
</tr>
<tr>
<td></td>
<td>How can these be used effectively?</td>
<td>For a micro-sized offset printer, technology presents a good chance to develop innovative products/services. This is exactly what Werbedruck Petzold (WP) has done by introducing three new products in the past 4 years. (Details in Appendix 4)</td>
<td>The current aim is to further extend the latest product (ECP™) with new ink technology to provide a wider range of colours, and a better product. The product is also being automated via workflow technologies to make it user-friendlier.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WP is currently working on introducing these products into the emerging markets to potential competition thus turning a potential threat into a potential customer.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>NB: these matters should be continually reviewed to identify new threats and/or opportunities.</strong></td>
<td></td>
</tr>
</tbody>
</table>

Cont.
### Table 1

<table>
<thead>
<tr>
<th>STEP</th>
<th>CONSIDERATION</th>
<th>FEEDBACK/OBSERVATION</th>
<th>ACTION (based upon company model)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 3: internal issues</td>
<td>Given the owner’s goals (established in step 1) and the current major external opportunities and threats, how can these be turned into actions via the company’s functional areas? How to develop a recipe for mixing technology with human resource potential, and owner’s desires to create innovative strategies to allow the company to ‘survive well’?</td>
<td>Technology partnerships and training are vital to the offset printer wishing to involve everyone in the creative process. Werbedruck Petzold promotes a great deal of testing, concept partnering, and creative trialling. At present the weekly activities would contain around 25% testing. This seems a large figure but is achievable due to the smallness and flexibility of the micro-sized company. Getting the message to the market is another major factor in which a micro-sized company is often not well versed. Werbedruck Petzold undertakes a lot of press activity in terms of press releases and partnered advertising. This approach is cost effective and has worked quite well to date. Another aspect of interest is the use of testimonials. If a client is pleased with the outcome, a rebate on the printed project/product/service is offered if they will provide the press with an objective testimonial.</td>
<td>As the company does not expressly wish to grow the legal form will remain the same. Financial issues will be closely monitored to ensure that a profit is achieved on a monthly – six monthly basis, given the short-term focus of the owner. Human resource and marketing issues are managed according to feedback/observations. Innovation is very much driven by the owner, and technology director who are both close to the market and receive news of new technologies (opportunities) quite early due to their networks. This in turn fuels testing and review, often leading to enhancements which occasionally turn into totally new products/services.</td>
</tr>
</tbody>
</table>

This section concludes the presentation of the results related to the research problem. The ultimate objective of the study is to provide information which adds to current knowledge in terms of building theory for MSE survival and growth. The smallness of the study was deliberate, as richness of information was sought. Section 5.2 presents the overall study finding, ie a three-step, company-specific, framework. The three-step framework is based upon information obtained via a complete literature review, as well as preliminary qualitative research, and subsequent participative, action-oriented feedback. The results are rigorous in their development and presentation and do meet the aim of presenting theory-building research, suitable for ongoing testing and review. The following sections will now detail the implications of the study in theoretical and practical terms.
5.3 Implications of the study for theory

As mentioned, the study has clearly contributed to the field of knowledge in terms of MSE survival and growth. Furthermore, the study applies action-oriented data collection and analysis techniques (which have been more commonly used in public sector situations) to a problem situation within the private sector. This also represents an addition to theory. As well as providing further information about the application and use of action-oriented research, the study also delves into the field of MSEs. In Europe, and in the general literature regarding company survival and growth, this group of companies has typically been overlooked, despite its economic importance at the local and national level. By raising these concepts the study challenges the boundaries and scope of action-based theory and also introduces wider considerations related to the findings of the study. This section briefly outlines how the study also incorporates aspects of related fields of study (reviewed in Chapter two) and the contribution it makes to these areas.

The three main fields of related theory which were reviewed in Chapter two were:

- entrepreneurship,
- innovation, and
- complexity/contingency.

The model presented in section 5.2 provides an indication of the integration of these fields to the overall field of theory relating to business growth.

Step 1 of the model is concerned with the personality and desires of the owner/manager of a MSE. These people are usually described as entrepreneurs. Typical personality traits such as desire to control his/her company and negativity towards a partnership or dissemination of this control were observed in the case study company’s owner. This somewhat blocked the company’s performance, as it is clear that ‘the workload is becoming too much’ and the company is suffering as a consequence. Theoretically speaking, one must simply alter one’s behaviour, realistically though this is often not going to be the case. Thus, the framework considers the desires of the owner/manager as inherent in business decision for MSEs. There is a definite wish not to delve into the personality traits of the owner/manager as the researcher sees this as being counterproductive to the potential flexibility of the situation. Thus in a theoretical sense, current trait theory
has been acknowledged, but not necessarily adopted and applied. Rather the researcher has opted to place the owner/manager’s desires/wishes for his/her company at the fore as an inherent part of MSE survival and growth decisions. Furthermore, it is recommended to keep reviewing these desires regularly as observations during the course of the study indicated a tendency for the owner’s objectives to alter over time and adapt to the situations at hand. This is not a negative aspect, but rather an inherent and natural part of MSE management i.e. flexibility.

The contribution to knowledge in terms of entrepreneurship when related to MSE management (based upon feedback and observations from the case study company) is to focus more upon the shifting desires and business objectives of the owner/manager, and review these regularly, rather than attempting to establish a fixed set of traits to describe the person. The trait theories established to date do not fully represent the real MSE owner as they fail to accommodate the complexity of the systems in which they operate. As such, a set list of traits may not be prevalent at all times, in all situations, and it would better reflect reality to continually monitor owner’s business objectives. This is a conceptual logic which presented itself via the basic qualitative research conducted in this study, and is well worth future research attention.

Similarly, step two of the company-specific framework focuses on the key external factors which drive internal innovation. In this specific case, technology and technologically-driven production techniques, are identified as key environmental or external factors offering the highest survival and growth potential. In another company it may be that emerging markets, and marketing matters provide the lynchpins to success via innovation in service. Innovation has long been considered an essential aspect of business success and growth. However, this study places it in an even more pivotal role by establishing innovation as the key to not only success and growth, but also mere survival for mature MSEs which face exceedingly difficult conditions. Furthermore, in the case of MSEs innovation is perceived to be jump-started by external/environmental factors and activated by internal/functional factors. The source and mix is unique for each MSE. Thus, the framework offers a method by which to establish and consider a suitable resource mix, rather than prescribe a mix per se.
The deviation from current theory lies in the acknowledgement that external and internal factors are related (in fact the latter depends upon the former) and both are subject to the overriding desires and business objectives of the owner/manager. Furthermore, the three-step framework provides a consideration or decision/action stimulus rather than a prescriptive solution. It requires each company to evaluate and act upon its own situation within its own system. Continual review naturally heightens the value of the decisions.

Finally, postulating the idea that a model should be company-specific, is making a big statement about contingency and complexity. Theorists should cease attempting to model MSE behaviour, and focus upon celebrating and liberating the complex and flexible nature of this type of firm. This may appear at first glance to totally contradict extant growth theories. However, it merely states the general conclusion of most researchers to date i.e. no ‘general’ model is likely to be relevant. It may also appear to be illogical in light of the presentation of a framework in this study. However, the three-step framework presented in this study is intended to be used as a flexible decision tool which is designed to address the poignant features of MSEs and assist owner/managers develop the correct approach based upon

- their inherent personal business objectives and company goals
- the main field of opportunities and threats in the external environment affecting their company, and
- the corresponding situation-specific mix of internal company functions which will help them meet their goals.

It is a practical-based theory which arose from rich feedback obtained in a small, participative study aimed at building upon current wisdom. In essence, each theorist provided valid findings and perspectives regarding the complex field of MSE growth. Thus, each theory builds upon the other, and none should be disregarded. Similarly, none should be applied to all situations in all cases. Following is the final and most concrete contribution to knowledge and action that I wish to make.
The final contribution to the field of complexity and MSE management theory is that each MSE is different, servicing different markets, providing different products/services, and dealing through different networks. Thus management should decide itself what it wants and how to get it – this is in any case, reality. Theory should focus upon nurturing the richness of MSE operations, and desist attempts to over quantify the inherent and elusive complexity.

It can be seen that the entire study does make significant contributions to the theory of company survival and growth as well as related topics such as entrepreneurship, innovation, and complexity theory as it applies existing principles and thoughts to MSEs. The study successfully builds theory, as well as establishes a sound base for further review and testing. It celebrates the flexibility and complexity of MSEs in reality, without losing sense of sound theoretical foundations. It challenges though to reflect practice, and vice versa.

5.4 Implication of the study for ‘real world’ business practitioners

Section 5.4 is split into two sub sections which deal with the practical implications of the study for private sector managers, and public sector managers/analysts.

5.4.1 Real world solutions for the private sector

Although the study is based upon a small, qualitative, action-oriented project, the information it provides is rich in detail. It uncovers the lack of understanding and attention afforded to MSEs, and the need for focused assistance based upon the reality of the micro business environment.

Managers, as with theorists, should not attempt to ‘capture and emulate’ the secret to success, but should be realistic about their situations and plan accordingly. Flexibility is one of the most positive aspects of micro-small business, and flexibility and adaptability cannot be modelled in a universal fashion, but should be dealt with in a somewhat systematic and individual manner.

This study highlights the need for ongoing review and evaluation based upon three elements of micro-small business
- the owner/manager own desires related to business objectives,
- the external environment in terms of the main opportunity/threat it provides related to the potential to innovate, and

- the functional aspects of his/her company and the mix required to manage the first two aspects.

The solution for the MSE manager lies in continual review, evaluation, and relevant actions based upon these factors. In a sense, this is the core of flexibility and adaptation which forms reality.

Managers can move through these three steps in a sequential manner by firstly reviewing their own business objectives and desires. Based upon this, the manager/company must look to the external factors which do influence a MSE more than say a multinational corporation, and should be used to obtain advantages via innovation in line with the owner’s desires. The company must then establish the correct mix of internal functions to maximise the external opportunities, and minimise threats, to achieve these goals. Table 25 summarises this sequential checklist and internal review function, and demonstrates one case specific example of how the results of the study can assist private sector owner/managers improve their assessment of their survival and growth propensity and potential.

Before presenting this review I would like to mention the following development. In line with the goals of the study to develop a solution which will lead to future review and action, the three-step framework presented in this chapter is currently being applied at another small-sized printing plant, located within 30 kilometres of the case study company. This provides an excellent opportunity to further develop and test the framework in a situation with similar delimitations to those imposed upon the study i.e. German, small-sized printing plant. The only aspect to vary is that the printing company in question is not using just offset presses. This will be an excellent chance to further test the value of the framework to MSEs, and potentially enhance its worth via ongoing and objective evaluation. However, at this stage, Table 25 presents a possible scenario for the application of the framework with relation to the case study company.
### Table 25: Checklist for private sector owner/managers of MSEs to assist with the assessment of their company’s survival and growth propensity and potential. (A case specific sample)

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Review</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1: establish own desires and business objectives.</strong></td>
<td>Evaluate own desires via a candid discussion with a trusted colleague, friend, family member, or consultant.</td>
<td></td>
</tr>
<tr>
<td>Case specific: Short term business objective: To survive and turn a profit which supports a ‘comfortable’ lifestyle. Not to grow or give away part ownership of the company.</td>
<td>The goal is to establish if growth is indeed a desire of the owner, and if not, then what is.</td>
<td></td>
</tr>
<tr>
<td>Mid term business objective: To sell the company</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2: assess the main external sources of opportunities and threats in terms of facilitating innovation</strong></td>
<td>Draw up a list of the economic, external, and environmental factors which affect your company.</td>
<td></td>
</tr>
<tr>
<td>Case specific: Technology provides the biggest opportunity for innovation (to generate profit)</td>
<td>Which of these provide the most potential for your company to innovate new products/services. Which represent the biggest threats?</td>
<td></td>
</tr>
<tr>
<td>Emerging markets (Eastern Europe, Middle East, and Asia) are the biggest threat but can be turned into an opportunity if they become customers of the innovative products developed by the company (to maintain a market advantage and generate profit i.e. not go bankrupt or be forced out of business)</td>
<td>(NB: this should be reviewed in line with your objectives for your company i.e. planning for growth when this is not your objective will prove counterproductive as there is unlikely to be the commitment to see all tasks through to fruition)</td>
<td></td>
</tr>
<tr>
<td><strong>3: establish the appropriate mix of internal functions to meet the owner’s objectives and utilise the external opportunities, or address the threats</strong></td>
<td>In line with your objectives and the main sources of innovation/threats what functions does your company have to organise to achieve the results you desire?</td>
<td></td>
</tr>
<tr>
<td>Case specific: production and human resource are the two functional areas which will assist the company develop and apply innovation. Marketing will bring the news to the market.</td>
<td>Draw up a matrix and rate each of the functions in terms of their impact on the final outcome. Try to keep this to 1-3 functional areas as extending it any further will make the planning and control unnecessarily complicated.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NB: review this in line with your own desires and company objectives to see if it is realistic.</td>
<td></td>
</tr>
</tbody>
</table>
The key to the decision framework is continual review of the owner’s objectives and motivations as this guides the overall survival growth function for micro-small enterprises. Table 25 provides the action-oriented outcome of this study as applied to the case study company.

This concludes the section on the practical implications of the study. A brief review of the implications for policy makers will now be presented.

5.4.2 Real world solutions and their implications for public sector policy planning
As the study was small and aimed at building theory for further research, there are few realistic implications for public sector policy makers. More substantial, empirically based research relating to the use of such a decision framework within MSEs will provide more useful findings. These matters will be covered in the final section 5.6.

One obvious finding from the study is the overall lack of attention paid towards micro-small enterprises and their needs. Statistics revealed in Chapter two indicate that although the ‘typical’ company in Europe is in fact a micro-sized firm with less than five employees, national statistics (at least in Germany and the EU) fail to report results for companies with less than 20 employees. Public sector officials within Europe would be well advised to divert more attention and funding/assistance, to this sector of the economy as it does indeed form the backbone of trade. Although the study did not specifically review the situation of MSEs in other areas of the world, a cursory review of the literature did indicate a similar situation in other countries. Market niching, customer specialisation and tailor-made approaches will not disappear because humans are individuals and do seek to be treated, at least in some aspects, as individuals. MSEs serve this need and reflect the level of flexibility required to adapt to ever changing demands. Public sector projects and assistance schemes should acknowledge this individuality and promote it, rather than shy away from it or file it away in a draw with other ‘complex’ matters.

The provision of MSE statistics would be a good starting point and allow owner/managers to better assess their external environment. Open and flexible banking policies and employment laws could also facilitate a company’s ability to
adapt to opportunity. Finally, a general tax scheme to encourage investment and growth could greatly ease the financial pressure placed on MSEs which are typically privately funded and undercapitalised (at least in the offset printing sector where the cost of capital equipment is high). Changes are required.

5.5 Limitations and considerations

Section 1.7 provides a full listing of the major limitations to the study. By way of review the limits and considerations affecting the study are:

- that the entire project is action-oriented i.e. aimed at generating courses of action for the future. The small work group did generate concentrated and rich information, however it is not universally applicable (this may be the aim of future studies). While some may perceive this to be a limit, it is important to note that producing global results was neither the objective nor function of the study and, as such, this point should be considered in terms of the overall project.

- Furthermore, there were several delimitations placed on the study in terms of location (Germany/central Europe), company size (micro to small), and industry (offset print). These deliberate delimitations served to keep the study focused.

No additional limitations became evident during the course of the research project other than the general lack of data related to MSEs. This however, was treated as a gap in the current research and used to focus and drive the project. It served to heighten the participative group work/feedback as issues were delved into in some depth due to the lack of existing, formal data. Thus, strengthening the claim that the findings do indeed represent an important contribution to knowledge in several areas, as discussed in sections 5.2, 5.3 and 5.4.

5.6 Opportunities and implications for ongoing research

As the action-oriented research project was aimed at providing findings and presenting concepts which build upon existing theories and setting a foundation for future action, it establishes a foundation for further research in several areas.
a. In a methodological sense, it applies action-oriented research techniques to private sector issues with pleasing results. The depth of information and value of participative and ongoing feedback was well worth the trade off against statistically significant quantitative results. Given that the topic of MSEs is not well researched and documented, qualitative, action-oriented research provided an excellent vehicle by which to uncover a myriad of ideas and considerations, allowing the postulation/extension of theory. Future research projects in the private sector, with similar objectives as this study could be enhanced via the use of action-oriented research techniques which offer a richness of information not attainable via more traditional quantitative research techniques.

b. In a topical sense, the study encourages not only applied research in the field of offset printing, but also on MSEs. This would mean lifting the delimitations placed upon this study in terms of its specific relevance to offset printing and general company growth.

The field of MSEs and the issues they face is extremely relevant to modern business practice, and represents a field in need of positivist studies which can generate global findings. The three-step framework presented in this paper is designed to reflect the complexity of such companies and encourage owner/managers to decide and plan for themselves. It would be useful to apply this framework to other MSEs to test its value in acknowledging uniqueness and individual planning activities related to company survival and growth. The model could be applied in the following situations, within future studies, to test its relevance and acceptance.

- A representative group of offset printers from across the world (to test for country/global relevance).

- A mixed group of similar sized enterprises (to test for applicability to MSEs in general).

These studies would be advised to incorporate some form of qualitative, action research to ensure that not only the depth of data required is obtained, but also that review cycles are maintained to reflect both the ‘review aspect’ within the framework,
and reality. Designing future research in this manner will also allow results to be compared to those presented in this study.

In conclusion, the literature reviewed in Chapter two provides a very rich description of company growth theory and aspects which impact this in relation to MSEs. It concludes that the MSE environment is complex and difficult, if not impossible to model. Growth in these types of companies may not even be the overall business objective of the owner. The research study shows that this complexity is in fact reality. The research project does not reject any extant research, it embraces the theories postulated to date, and promotes the fact that no ‘one’ model will ever be able to prescribe if, how, and when a MSE should grow. The study encourages individual assessment, consideration, and action, and provides a three-step framework to guide this process. It builds upon existing theory and challenges further and ongoing construction in the field of MSE survival and growth.

It both contributes to thought, and evokes it, paving the way for future, action-based knowledge gathering and a subsequent improvement in real world practices.
References for statistics, definitions and the HDM print industry rating model


BVDM 2005: German association for the print and media industry (Bundesverband Druck und Medien) Druck und Medien. Available online at: www.bvdm-online.de


Druckgewerbe: Print Industry
Drucken (ohne Zeitungen): Print (without newspapers/publishing)
Druck und Medienvorstufe: Print and prepress


SBC 2001: Small Business Coalition (Sept. 2001) Statement by the Chairman of the Small Business Coalition, Mr Don Armstrong, contained a definition of small business according to the recommendation presented by Professor Scott Holmes, University of Newcastle. Available online at: www.smallbusiness.org.au/scb/briefings/br0001.htm


General references


Vickers, Sir G. (1956) *Control, stability, and choice*, University of Toronto Faculty of Applied Science and Engineering, Canada.


The following papers were very useful in guiding the content and structure of this thesis, based upon an action-oriented approach. Although they are not referenced directly, they may be of interest to fellow action researchers.


APPENDICES

Appendix 1:
Prepress in the production flow for the generation of printed products.

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Delphi study, planning and findings 217

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Appendix 1:
The production flow for the generation of printed products.
Kipphan, H. (2000, p 14)
Appendix 2: Delphi study, planning and findings

Planning and panel structure

Panel structure

A matrix approach was used to select the panel members. This approach was chosen as it allows certain areas of experience to be highlighted, thus widening the scope of ideas and possible factors. It was also a decision of the researcher to make the list as international as possible to avoid cultural and economic bias (ie due to a down-turned economy, excessively negative views could be purported).

The panel was split into two groups a) printers and b) associated industry representatives. This will allow for hopefully, much more variation in the responses, thinking ‘outside the box’, and a fresh view on the situation which may be overlooked by printers who could be too close to their industry to see possible threats and opportunities. The panellists are listed below, in matrix format.

<table>
<thead>
<tr>
<th>DISCIPLINE</th>
<th>Area of expertise</th>
<th>Name</th>
<th>M/F</th>
<th>Nationality/email</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Printer</td>
<td>Co-researcher Innovative &amp; technologically-driven</td>
<td>PP</td>
<td>M</td>
<td>German</td>
</tr>
<tr>
<td>2. Printer</td>
<td>Small business owner (family business over generations) good working knowledge and currently struggling to keep company afloat</td>
<td>MA</td>
<td>M</td>
<td>German</td>
</tr>
<tr>
<td>3. Printer</td>
<td>CEO of large American online ordering print company</td>
<td>RK</td>
<td>M</td>
<td>American</td>
</tr>
<tr>
<td>4. Printer</td>
<td>Large Web printer producing big print runs of catalogues mainly for the consumer goods market</td>
<td>MF</td>
<td>M</td>
<td>German</td>
</tr>
<tr>
<td>5. Machine manufacturer</td>
<td>Senior VP of HEIDELBERG PRINT MACHINES, honoured scholar and author of a handbook on the practice of printing</td>
<td>HK</td>
<td>M</td>
<td>German</td>
</tr>
<tr>
<td>6. Pre-press &amp; imaging</td>
<td>CEO of CREO in Canada, technology driven pre-press organisation which currently offers one of the world’s best screen technology</td>
<td>AM</td>
<td>M</td>
<td>Israeli</td>
</tr>
<tr>
<td>7. Software, research and product development</td>
<td>Head of department for document imaging at Fraunhofer Institute for Graphics design. World renowned research facility, developing new technology and software systems related to design, imaging and print</td>
<td>JS</td>
<td>M</td>
<td>German</td>
</tr>
<tr>
<td>8. Ink supplier</td>
<td>Huber Druckfarben. President and owner of German ink company supplying ink/print colour to the printing industry.</td>
<td>HR</td>
<td>M</td>
<td>German</td>
</tr>
<tr>
<td>9. End User</td>
<td>Worldwide board director of OgilvyOne direct marketing agency. With over 30 years experience, 15 at board level, RH will provide a more emotional perspective on the future of printing</td>
<td>RH</td>
<td>M</td>
<td>German with years of international experience</td>
</tr>
<tr>
<td>10. Paper supplier</td>
<td>Senior Vice President (Paper product area) Stora Enso - one of Europe’s leading paper manufacturers and suppliers. Knowledge on paper consumption trends</td>
<td>KK</td>
<td>M</td>
<td>Finish</td>
</tr>
<tr>
<td>11. Industry journalist</td>
<td>Overall market knowledge and general understanding for and insight into industry trends and developments</td>
<td>KW</td>
<td>M</td>
<td>Swiss</td>
</tr>
</tbody>
</table>
Delphi study findings

1. INTRODUCTION
The entire Delphi study, comprising 2 rounds, was targeted at establishing an understanding of the past, present, and future factors which have, do, and will affect the success of small to medium sized offset printers.

11 panel members (from 6 countries) from the printing industry, suppliers/supporters of the printing industry and end users of print products, participated in the study. Each panel member was both well versed in their particular field, and at an organisational/company level which allowed for a certain amount of holistic and informed response.

The results served to widen the researcher’s ‘scope for consideration’, and highlight factors of importance - based upon expert opinions.

All participants are thanked for their time and participation which was very much valued by the researcher, and will lead to a better and more informed PhD project outcome - the establishment of a suitable management decision tool for small to medium sized printers. It is hoped that this model will assist printers to work in a more sustainable way – more sustainable as it is based upon learning and knowledge which will be continually updated and thus more innovative.

RESPONSE ANALYSIS

2. Round one analysis

a. Question 1
What have been the major factors in the past affecting the success of small to medium sized printers?

The feedback provided by the panel regarding the past influences on the printing industry revolved around technological developments and company financing issues. With slightly more emphasis on marketing and managerial issues such as
Marketing:
- customer service
- market segmentation and target marketing

Managerial
- business planning and setting targets (focused management policy)
- investment and business decisions regarding equipment/technology

The overall emphasis, however, was on technology, and the panel in general felt that the success of printers in the past had a great deal to do with the decisions they had made regarding which technologies they would adopt, and follow, and which equipment and machines would best suit their needs. The responses showed a general consensus that management decisions and company/production planning had given printing plants the advantage in the past. This was supported by correct marketing and financing policies, and professional production departments with high quality standards. Figure 1 summarises the results.
b. Question 2
What factors will influence the future of small to medium sized printing companies?

Feedback related to this question produced some interesting trends which were further explored in the second, and final round, of questioning.

The general feedback from the panel regarding the future of printers, to some extent supported the sentiments proposed in question one ie technology would remain a big influence on the future of printing. Furthermore, the emphasis was on data automation and integrated workflows. Standardisation, and ease of data transfer were postulated by all groups as having relevance. New, expanding technologies such as digital printing (print on demand) and direct imaging methods were also felt to be important.

Less emphasis was given to managerial input and participation in favour of a slight shift towards marketing tasks. These included:
- market research in an attempt to identify market needs
- very specific market focus
- full service providers as opposed to just printers

The last two points are worthy of further assessment as they signify a move from the opinions provided about the past.

In the field of marketing, a move from broad market segmentation and target marketing towards and specific niche marketing was identified. The general feeling was that printers must study their market carefully, and select a small niche which they can service with a full offering (ie expanding the value proposal of the traditional printed product) and be aware of the technology available or potentially available, and affordable, which will allow them to serve these markets. Figure 2 summarises the responses.
In essence, the important steps from a managerial perspective are to:

1. Understand the technology and be aware of the opportunities it will bring.
2. Via the opportunities presented by the emerging technologies, select and financially plan for the company’s growth (production wise).
3. Research and understand the market and its needs, and select a specific market niche to service
4. Develop and improve the overall product offer to entail more than just a printed page (backwards and forwards product/service) integration.

Points 2 and 3 may be reversed. That is to say, a printer may either select technology and let it dictate the available opportunities and market or, alternatively, select a potential market niche and thereupon decide the necessary technology which will provide a sustainable competitive advantage for this niche.

The second point typifies actions/decisions and the management style of novice printers who often invest considerable capital and then ‘run out of steam’ if not able to keep abreast of technological developments. This was the case with many printers who jumped aboard the digital printing bandwagon, only to find that deliverable product capabilities in terms of quality (in full colour jobs) were inequitable with market expectations.

3. Round two analysis

a. Question 1
Round one resulted in a list of factors considered important to the future of small to medium sized printers which was grouped by management area. The 12 most common/important factors were placed into a list which was to be ranked by panellists.
<table>
<thead>
<tr>
<th>Area of management</th>
<th>Factor</th>
<th>Alphabetical code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational</td>
<td>Focused and effective management</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Retaining good price/quality ratio</td>
<td>B</td>
</tr>
<tr>
<td>Marketing</td>
<td>Highly targeted marketing (niche marketing)</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Understanding and expanding the value proposal (providing a more fully integrated service as opposed to just providing a printed article. This involves providing design, prepress, print, letter shop etc. in an attempt to handle jobs more as projects than print tasks.)</td>
<td>D</td>
</tr>
<tr>
<td>Human resource</td>
<td>In-house skill and know how</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>Well trained and motivated staff</td>
<td>F</td>
</tr>
<tr>
<td>Financial</td>
<td>Pricing policies (to deal with price erosion due to increasing price competition)</td>
<td>G</td>
</tr>
<tr>
<td></td>
<td>Reduction of internal costs</td>
<td>H</td>
</tr>
<tr>
<td>External/Legal and economical</td>
<td>Impact of alternatives to traditional offset printing (desk top publishing, internet etc)</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>Opening and expansion of new markets (new potential client groups eg publishers)</td>
<td>J</td>
</tr>
<tr>
<td>Production and technological</td>
<td>Workflow standardisation and integration</td>
<td>K</td>
</tr>
<tr>
<td></td>
<td>New technology/printing equipment</td>
<td>L</td>
</tr>
</tbody>
</table>

Individual responses (for your information) have been graphed against each other on the following diagram – Figure 4.
Several factors display moderate consensus/grouping. Of these the most relevant and noteworthy are:

- (d) Expanding the value proposal: RELATIVELY IMPORTANT
- (e) In-house skills and know how: MODERATELY IMPORTANT
- (g) Pricing policies: MODERATELY UNIMPORTANT
- (i) Impact of alternatives to printing: RELATIVELY UNIMPORTANT

The median values from the panel's feedback are displayed below (Figure 5). These values provide a better means to evaluate opinions and the ‘importance’ of each factor, based on the responses of 11 panel members.
Although only little to moderate consensus is evident one must bear in mind the relative small number of responses and spread of opinion. The responses did serve to identify the more important factors, listed below, for consideration when developing a final growth model.

- (a) Focused and effective management
- (d) Understanding and expanding the value proposal
- (c) Highly targeted marketing (niche marketing)
- (b) Retaining good price/quality ratio

Items which were considered to be of less importance are:
- (g) Pricing policies
- (i) Impact of alternatives to printing
- (j) Opening and expansion of new markets

The rudimentary scale below attempts to depict the median values of the 12 factors in terms of their importance to the future of small to medium sized printers.

**Figure 6: Scale showing the importance of each factor (shown in red) in determining the success of small to medium-sized printing companies**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>d</td>
<td>c</td>
<td>b,k</td>
<td>e</td>
<td>f,h</td>
<td>l</td>
<td>g</td>
<td>j</td>
<td>i</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In conclusion, **ORGANISATIONAL & MARKETING issues** were considered relevant for further attention and **EXTERNAL/LEGAL issues** were considered less relevant. Further research will focus on these outcomes and attempt to ascertain their validity with reference to inclusion in the final management decision model.

**b. Question 2**

Finally, panel members were asked to provide their recommendations on relevant management decision tools related to the 12 factors identified in question 1. The outcome was varied and served to provide a list of potential evaluation tools for each factor which will help expand the researcher's knowledge base. The following table highlights the major recommendations to be used as a basis for further consideration.
Figure 7: Recommended management decision tools & methods for obtaining further information regarding each factor

<table>
<thead>
<tr>
<th>Area of management</th>
<th>FACTOR</th>
<th>Management decision tools</th>
<th>Other recommendations (&amp; means of gathering more information)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organisational</strong></td>
<td>A</td>
<td>Focused &amp; effective management</td>
<td>- Best practice &amp; benchmarking</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Retaining good price/quality ratio</td>
<td>- marginal costs and contribution margin analysis (control internal/production costs)</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td>C</td>
<td>Highly targeted marketing</td>
<td>- SWOT analysis - niche analysis</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Understanding and expanding the value proposal</td>
<td>- customer interviews (focus groups/surveys)</td>
</tr>
<tr>
<td><strong>Human resource</strong></td>
<td>E</td>
<td>In-house skills and know how</td>
<td>- staff evaluation indicators (performance &amp; goal oriented)</td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td>F</td>
<td>Well trained &amp; motivated staff</td>
<td>- staff evaluation indicators (motivation &amp; satisfaction oriented)</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>Pricing policies</td>
<td>- testing of various price models - customer/market review to confirm what the market will bear</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>Reduction in internal costs</td>
<td>- Internal cost audit</td>
</tr>
<tr>
<td><strong>External/Legal and economical</strong></td>
<td>I</td>
<td>Impact of alternatives to traditional offset printing</td>
<td>- case study reviews - market intelligence</td>
</tr>
<tr>
<td></td>
<td>J</td>
<td>Opening &amp; expansion of new markets</td>
<td>- market research (customer focus groups) - product testing</td>
</tr>
<tr>
<td><strong>Production and technological</strong></td>
<td>K</td>
<td>Workflow standardisation &amp; integration</td>
<td>- workflow audit (process flow analysis)</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>New technology/equipment</td>
<td>- market intelligence - company’s capabilities analysis</td>
</tr>
</tbody>
</table>
4. Conclusions and thanks to participants

The purposes of the Delphi study were to:
- acquire expert knowledge and opinions about the past, current and future situation of the printing industry (in particular small to medium sized offset printers).
- provide informed information to support the researcher’s knowledge in terms of industry specific information
- guide further research and group feedback sessions in terms of which management areas potentially need to be addressed and further explored.

The study, via your assistance and participation, was successful in meeting these research targets.

Thank you for your time, feedback and opinions, and support of the project. I wish you every success in your future endeavours.

Lydia DALLE NOGARE
Appendix 3: Convergent Interviews, planning and findings

1. Planning
   a. AIM
      The aim of the convergent interview exercise is twofold:
      a. to establish the correct entry status for the researcher in terms of project acceptance, and
      b. to obtain further feedback on the Delphi study from practitioners working within the sample company.

      A major benefit of conducting convergent interviews is that they provide a chance to introduce the management decision tool ‘concept’ for consideration and, ultimately, testing. In this sense, convergent interviews are intended to act also as a group informing exercise without harming the overall research outcome.

   b. Rationale
      It was felt critical to obtain the correct group acceptance and set a professional yet open atmosphere in which group members would feel free to provide their input at any stage during the project and during the group feedback to be conducted on an ongoing basis during the model-testing phase.

      The researcher was also aware of the potential of a critical, or even negative, reaction to the study, stemming from the tough economic and business climate faced by printers over the past few years. This is sadly an increasing trend and does have a detrimental effect on attitudes and potentially work effort. The small number of employees and heavy workloads also create additional stress and leave little time for involvement in research projects.

   c. Methodology
      Each interview is intended to be concise, yet informative, providing a research phase preceding the group feedback analysis which will form the bulk of research data, as it accompanies the model application and testing.

      The process will comprise aspects from both formal and informal interviewing. The questions themselves will be open and interviewee-driven. However the overall interview structure will focus upon similar themes and each interview will be designed to follow a similar flow.

      Several planning aspect are critical to the success of the interviews.
      a. Participants
      b. desired atmosphere
      c. timing of the activity
      d. topic(s) to be covered (session plan)
      e. inclusion of the co-researcher (managing director)
      f. taping the session

      Each item will now be discussed, in turn, in order to establish a plan for the interviews.

      a. Participants
      The group will comprise employees from the test company (Werbedruck Petzold) which is a small offset prepress/printer. The company employs 13 people in the areas of admin and sales, prepress, print, and post production.

      In order to obtain a representative sample, relevant to the research topic, and obtain information which will fill in the gaps in the researchers knowledge, certain key employees have been selected. The chosen employees come from the fields of prepress and print and are most relevant to be interviewed as they have:
- the most experience in the printing industry,
- the longest relationships with the company,
- the required level of training to provide useful feedback,
- the strongest influence on the key issues addressed by the model (ie technology and automated workflows), and
- the necessary level of involvement in day-to-day activities.

Those working within other areas of the company are either not directly from the printing industry or have no conceptual understanding of the factors which affect the companies success and thus are not well suited to provide feedback in this case.

The desire for group homogeneity and controllable numbers also contributed to the final selection of interviewees.

Thus, the reference group will comprise 6 employees from the fields of prepress and print, and production/management. The pairs will be comprised as follows:

- 2 prepress (one typesetter F, one technical/software M)
- 2 printers (one full time, one freelancer who also works for other companies)
- 2 management staff (one from production, one from prepress)

The following table exhibits the paired interviews and expected feedback/input

<table>
<thead>
<tr>
<th>Interview</th>
<th>Interview pair</th>
<th>Field of expertise</th>
<th>Expected feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SR WG</td>
<td>Typesetting (design software) Technical computing and software</td>
<td>Prepress, automation workflows</td>
</tr>
<tr>
<td>2</td>
<td>MH F</td>
<td>Offset printer Offset printing</td>
<td>Technology, printing Technology, printing</td>
</tr>
<tr>
<td>3</td>
<td>MD WK</td>
<td>Prepress manager Print/production manager</td>
<td>Prepress technology, innovation Print technology, machinery</td>
</tr>
</tbody>
</table>

b. Desired atmosphere
It is important to establish an open atmosphere that also addresses the following potential issues.

- trust: interviewees must trust the interviewers and feel comfortable providing feedback.
- confidentiality: a safe, and unthreatening basis for the interviews must be established.
- worthwhile: both interviewees and interviewers should feel their feedback is both valuable and important to the project’s outcome and future research projects.
- Timely: it is highly important to take into account the amount of work each interviewee has. His/her workload is already heavy and the interviews should not be seen as another stress.

c. Timing of the focus group
Werbedruck Petzold is a small company in the middle of testing, finalizing and releasing a new product to the market. As such, it is almost impossible to get everyone together for an extended period. Employees have elected to take no lunch breaks, and already work 14+ hours per day. In essence there is no desire to participate in interviews outside of already extended work hours, and no time to do it within working hours. In this case the co-researcher recommended approaching each interviewee individually and find out when the best time is to meet with them. This flexible approach provided the best results and helped to begin to establish a feeling of trust, support, and positivity.

d. Topics and session plan (add in timings)
The table below outlines the general interview structure and time estimation. Obviously each interview will undertake its own path depending upon the interviewee and their feedback. The table is intended as a guide to ensure similar data is collected, and thus simpler to compare and analyse at later stages. Each interview is planned for about 60 minutes (extendable, depending upon the atmosphere of the interview).

<table>
<thead>
<tr>
<th>Topic</th>
<th>Time</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction (to PhD, concept, and model)</td>
<td>1-2 mins</td>
<td>Researcher and co-researcher</td>
</tr>
<tr>
<td>Expectations of interview and requirements from interviewee ie role of interview in model development.</td>
<td>Included in above timing</td>
<td>Researcher and co-researcher</td>
</tr>
<tr>
<td>Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Review and feedback of Delphi study</td>
<td>5 -10 mins</td>
<td>Interviewer &amp; interviewee</td>
</tr>
<tr>
<td>b. Implications for future of printing industry (own thoughts)</td>
<td>up to 40 mins</td>
<td>Interviewee</td>
</tr>
<tr>
<td>c. Relevance of model (own thoughts)</td>
<td>up to 15 mins</td>
<td>Interviewee</td>
</tr>
<tr>
<td>d. Planning the way forward (group feedback sessions)</td>
<td>5 -10 mins</td>
<td>Interviewer &amp; interviewee</td>
</tr>
<tr>
<td>Thanks and conclusion – what to expect next, set standards for level of involvement</td>
<td>1 - 2 mins</td>
<td>Researcher</td>
</tr>
</tbody>
</table>

A sample question/session plan is provided overleaf.
Paired convergent interview session plan

September/October 2004

Interviewee: ________________________
Interviewer: ________________________
Pair/partner: ________________________

Date: ________________________

Section 1:
Introduction 1-2 mins

1. Understand purpose of interview  OK

2. Expectations of the interview to provide feedback to close gap between Delphi and action research, and lead to model development. OK
### Section 2:

**Content:** up to 60 mins

1. Delphi study feedback

<table>
<thead>
<tr>
<th>Round</th>
<th>Question</th>
<th>Agree/disagree</th>
<th>Own thoughts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2a</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Implications for the future of the printing industry
What do you see as the major influences on the future of printing

Positive:

Negative:

3. What about a management decision model, what should it review/consider

Section 3:
The way forward and conclusion: 5-10 mins
Review how we will move ahead next year
Any ideas:

Thanks

Section 4:
Interviewers review:

1. Feelings about participating (interviewer and interviewee)

2. Openness of interview

3. Willingness to remain involved

4. Value of input
e. Other considerations

- inclusion of co-researcher: the co-researcher is also the Managing Director of the company and took part in the Delphi study. His involvement in the interviews will be less important in the initial sections which review the Delphi study, but more relevant towards the middle and end of each interview where new ideas are postulated. This decision to include him in the research collation was based upon two main factors:
  i. His ability to better review contextual feedback from the second section of the interviews, which will enhance analysis of this section.
  ii. The potential to breach any gaps or misunderstandings during the interviews (conducted in German).

- taping the session: due to the small number of participants, relatively easy access to them on a daily basis, the specific focus of each interview, and the involvement of a co-researcher, interviews were not taped. It was also felt that taping the interviews might intimidate some interviewees and formalize the whole process, thus restrict open conversation. This is not the aim of convergent interviews. Although not specifically desired, the researcher took notes. This was primarily due to the fact that the interviews were conducted in German (a language other than the researcher’s native tongue). This was explained to all interviewees and did not pose any problems, or affect the results/feedback.

The questions will be set out on a separate interview guide sheet.

Each pair of interviews will be compared for similarities and differences and further research/action will be taken based upon the outcomes. The action will form part of the ongoing group feedback analysis which is planned to take place during the next 12 months to trial, evaluate and alter certain aspects of the emerging growth/management decision model.

2. Analysis and findings
a. Interview structure and flow
The interviews were conducted with a small work group comprising employees of Werbedruck Petzold. The group includes 6 employees, both male and female, who represent the key areas of an offset printing company.

A table illustrating the combination of information and feedback mix is provided below:

<table>
<thead>
<tr>
<th>Employee/interviewee &amp; gender</th>
<th>Area of expertise</th>
<th>Paired interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. male</td>
<td>Offset printing</td>
<td>2</td>
</tr>
<tr>
<td>2. male</td>
<td>Offset printing</td>
<td>1</td>
</tr>
<tr>
<td>3. female</td>
<td>Pre press: Typesetting and workflow</td>
<td>4</td>
</tr>
<tr>
<td>4. male</td>
<td>Pre press: Software and workflow</td>
<td>3</td>
</tr>
<tr>
<td>5. male</td>
<td>Management: pre press &amp; lithography</td>
<td>6</td>
</tr>
<tr>
<td>6. male</td>
<td>Management: print &amp; prod’n</td>
<td>5</td>
</tr>
</tbody>
</table>
The groups were conducted by two interviewers, the researcher and co-researcher. The results from each pair of interviews were compared and feedback was sorted for further questioning.

Each pair was selected for the participants’ knowledge and practical involvement in a key area of offset printing. The major areas being: pre press, printing, and overall supervision/print management – as shown above.

Werbedruck Petzold is a small offset print company with a total of 13 employees (6 of whom perform administrative or support roles within the company, plus the managing director). As such, the remainder of employees comprise the work group. This aspect dictates a smaller than average work group, however this is offset by the group’s flexibility and speedy reaction to conflict and change.

Although convergent interviews are designed to be open and free flowing, some structure was introduced by the interviewees to ensure a basis for comparison of the responses. Each interview was split into 3 areas which all called for subjective responses.
- each interview began with a review of the goals and objectives as well as provision of an overview of future expectations from the work group and researcher.
- the next aspect of the interview was to obtain feedback from each interviewee on the findings of the Delphi study, as well as provide their own thoughts on the future of offset printing.
- Finally, each interviewee was asked to outline their decision process when faced with selecting a path of action for their small offset print company which was either successful or in trouble.

Every interview lasted approximately one hour and was conducted during the quieter lunch time period, around the mid week days (ie not Friday or Monday as these days are too ‘hectic’ with normal production and employees cannot find time to participate in interviews). The interviews were conducted on site at Werbedruck Petzold, in a separate meeting room.

Interviews were not recorded, however hand notes were taken. This was considered necessary by the researcher as interviews were conducted in German and this is not the interviewers native tongue. Some points could then be clarified when the comparison of interviews took place as the co-researcher is German. It was also considered valuable to record the group’s feedback as the ongoing group feedback sessions were to be conducted with the same reference group.

b. Analysis of feedback

Introduction
This section was well received and very useful in establishing initial rapport between the interviewees and interviewers.

The goals of this part of the interview were
- to introduce the purpose of the research (in terms of immediate and future requirements)
- to negotiate and establish roles for each interviewee and the researchers, and
- to create an open atmosphere and address all concerns before commencing the action research proper.
All, without exception, were very open and understanding regarding the research objectives and future project expectations. A feeling of equality was established between the interviewers and interviewees and an almost immediate sense of trust prevailed.

The only potential drawback initially was the surprise by employees at being asked to provide feedback for a research project. Once it was made clear that their skill, training, and practical expertise were the reasons behind the request to participate interviewees’ apprehension reduced. It was then able to clarify further that the ‘offset printing-related’ feedback and ideas they provided would complement the ‘theoretical business’ knowledge of the researcher and thus close gaps in the research results and ultimately overall findings and recommendations. This was an important point as it defined the information requirements, roles and value of each participant. This aspect played a major role in opening the responses and heightening their value.

**Review of the Delphi study and interviewees’ thoughts**

The goals of this section of the interview/discussion were to:

- encourage open discussion and free thought
- acquire further justification or otherwise for the results obtained from the Delphi study
- progress the conceptual development of the ultimate management tool by including practical feedback and experience

These goals were achieved with a favourable result in the first instance and some very valid considerations were postulated in terms of the second and third interview objectives.

Each interviewee agreed for the most part with the responses provided by the ‘Delphi study panel of experts’. Technology was also felt to be an important factor influencing the future success of small to medium sized offset printers.

Despite the various backgrounds of each interviewee, all held technology as being important. A very interesting point raised by all was the parallel importance of personnel. In one way or another, regardless or interviewee, area of expertise, gender, age all interviewees provided the feedback that technology would bring no positive effect if it was not coupled with properly trained, skilled and motivated people.

One interviewee coined the phrase ‘you can put the world’s most advanced workflow system, print machine and densitometer into a company but if no one knows how to use it, or is willing to do so there is no benefit at all.’ This took the discussion further into human resource issues and eventually the culminated feedback suggests that technology coupled with well trained, well educated, good employees is the ultimate key to success for small to medium sized offset printers. This seems a logical and practical extension to the Delphi results as it places the issue of company success in context. In other words, a small company with tight resources and few employees (usually all over loaded) needs to ensure it is up to date with technology, and also that it has the people who can operate it and produce the benefits the technology can deliver.

Another aspect, alluded to in the Delphi study via its relative low rating, is the importance of external issues such as political, environmental, economical, legal etc considerations. The ranking of these issues came towards the end of the Delphi study, during round two. These factors required a relatively low ranking compared to other factors, however, delving further into this was not the purpose of the Delphi study. The Delphi study was intended to raise issues for consideration, outside the scope of the researcher’s knowledge base, which could be further investigated via group feedback sessions. One
such matter has been outlined above with regards to technology and personnel, the other noteworthy consideration relates to external factors.

Interviewees also identified external factors as being less of a concern to the future success of offset printers and provided a reason why. Simply stated, these are factors that cannot easily be influenced by managers/owners of a company. They were recognized as an important consideration, however, as very little can be done to directly influence them on a day-to-day business basis, they were considered less vital to a firm’s success. The feedback provided stated that they could trigger a management decision and should be considered at the end of each evaluation, however, could not rightly be included within the company evaluation as a factor of success. The logic of this information in real terms is quite true. Managers of small to medium sized offset printing houses are already overloaded with negative influences and tough decisions, but should not be encouraged to operate according to them alone.

The Delphi study resulted in a split of key factorial areas that would influence the success or failure of small to medium-sized offset printers. Feedback from the convergent interviews refined this information by qualifying further which areas were of particular importance over others. The findings provided above could perhaps best be explained in visual terms. The following diagram attempts to expand the Delphi study findings, in terms of which factors influence the success of offset printers, based upon the feedback obtained by the convergent interviews. It shows how the convergent interviews served to refine the findings of the Delphi study by superimposing a ‘real life’ aspect in relation to current offset printing practices.

NB: it must be remembered that the aspects outlined are all top priorities. Any ranking within these factors is intended for manageability. All of the aspects outlined are necessary for company success and growth.

Diagram 1: Management considerations for growth (based upon Delphi study and convergent interviews)

The model will continue to be reviewed, tested and improved via the group feedback sessions planned as part of the final primary research phase.
Outline interviewees' own action path

The goals of this section of the interview/discussion were to:
- maintain open discussion and free thought
- obtain explanation for the Delphi study findings and expand the existing conceptual frame in terms of ‘real life’ offset printing practices

These goals were met in particular the first point. Most interviewees admitted they had never given the problems faced by management much thought. The prospect of owning their own offset printing plant and being faced with a decision of how to survive, or grow as an ongoing concern, was something which required a lot of thought. There was even some discomfort involved with the question, as two interviewees admitted they hadn’t realized how difficult and compromising a task management has to carry out at times.

These issues were overcome by increased involvement of the interviewers. In cases of doubt, lack of understanding of the information that was required of them, or simply reluctance to answer, the interviewees agreed to increase their involvement to facilitate a conversation. By doing this, interviewees were provided with more verbal direction and feedback to indicate their responses were ‘on the right track’ without of course influencing the responses with interviewer bias. Whatever interviewees said was simply affirmed. This rebuilt trust and created openness. Interviewees also agreed to step in with real life examples to help illustrate difficult concepts. This procedure was followed until the interviewee felt comfortable with the topic and could once again conduct open discussion. Interviewees felt this was a necessary intervention which ultimately ‘saved’ the interviews from a premature end.

One important point to be raised by this part of the interviewing was that a review of the current situation of a small printing plant was a good starting place for a decision about the future. This may sound basic, however in application it translates to an assessment of the controllable factors such as existing print technology within the firm, the existing employees and their skills base, existing client base. It was felt that these existing factors would greatly influence the direction of future activity, in most cases. They can also be easier reviewed in terms of external factors. And, furthermore, should be 100% in order before any growth decision/activity is undertaken. The following diagram summaries this concept in relation to offset printing companies.

Diagram 2: Determining factors for consideration when deciding how a small to medium sized offset printing plant should grow.

<table>
<thead>
<tr>
<th>Controllable factors (existing/past factors)</th>
<th>External influences (current issues)</th>
<th>Less controllable factors (future issues)</th>
</tr>
</thead>
<tbody>
<tr>
<td>what technology do we possess?</td>
<td></td>
<td>- what resources do I have?</td>
</tr>
<tr>
<td>(technology/production issues)</td>
<td></td>
<td>(finance &amp; organisational issues)</td>
</tr>
<tr>
<td>what employees/skills do we have?</td>
<td></td>
<td>How should I use them?</td>
</tr>
<tr>
<td>(human resource issues)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>who are our clients?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(marketing issues)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

100%
The approach of management should be a ‘review/decision' based upon existing and past decisions. Others also found this approach logical and more importantly ‘safe', especially given the tough economic conditions and tight financial circumstances. At present the tough economical situation renders radical management decisions, in most cases, as being too costly to support with the necessary technology, personnel and marketing. Such a planned and systematic approach may be worth considering in context for the development of the ultimate model.

Interesting issues

The following issue was raised via the convergent interviews and has been noted as worthy of further investigation as part of this research project. A growth model alone is influenced by many factors. There are many useful growth and management decision tools on the market, though very few relate directly to smaller scale offset printing.

A consideration which was raised during the convergent interviews and was further confirmed by the co-researcher was the importance of innovation in the future success of small to medium sized offset printing companies. Werbedruck Petzold is in fact a highly innovative company. In the past two years three new print products have been developed and released by Werbedruck Petzold. In terms of overall growth (which has affected each of the 5 key management areas identified to date in the study – not including external influences) innovation has been the key determinant. Company growth has been defined by company innovation with respect to the factors outlined to date.

As such, the researcher will pursue an innovations approach to company growth and growth decisions. This aspect is both fresh and very relevant to offset printers. It is also an area where managers less trained in classical management skills, but more technical and practically oriented may experience more affinity. A decision model centred on innovation could fit the market well. These are issues for the group feedback sessions to tackle and evaluate or refine. The following sections in chapter 4 outline the conceptual flow of the model up until its final successful application. In effect, these sections represent the procedures and analysis of the group feedback sessions.

c. Conclusions and review

Each pair of interviews was useful in that they both supported, and expanded upon, the Delphi study findings. The depth they added to the findings of the first research phase served greatly to inform the researcher of the issues existing within the offset print industry.

In general all interviews were perceived as being open and worthwhile. They provided an excellent opportunity for the researchers to establish themselves and their purpose, plus gain support for the ongoing research phase ie group feedback.

There were some issues which had to be dealt with. All were manageable: the small number of participants, plus their acceptance of the interviewers made this task less difficult. By way of review, the following issues require note.

- Split of the interview
  It became evident after the first pair of interviews that the first part of the questioning/discussion was awarded far too much time and some misunderstandings occurred. The remainder of the interviews applied less emphasis upon a review of the Delphi study, as this was too limiting and tended to curtail open feedback. Interviewees were reluctant to provide differing thoughts to those provided by ‘the experts’. This matter was clarified and the interviews were conducted in a more open-ended fashion. Instead of interviewees being asked if they agreed or disagreed with the results of the Delphi study, they were asked for their opinions about the questions put forward in the study. This generated much more feedback and various alternative lines of thought for
further consideration. The major factor being that although technology plays an important factor in the future success of a printing company, without skilled and well-trained employees, the advanced technology would be useless.

- Conceptual difficulty of the final area of discussion
The final point for discussion centred on interviewees own considerations as managers of smaller offset print companies. This topic seemed out of the realm for most as they had not often considered being in that position. As a result conversation ended abruptly and interviewees seemed 'lost for words'. Both the researcher and co-researcher agreed it would be more valuable to intervene and provided practical examples of the type of information required in order to restart discussion. This worked in five out of six cases. The remaining interview was left somewhat up in the air. However, the interviewee did mention that although no real information feel to mind, it was obvious what a difficult position it is to be a manager of a smaller sized offset printing plant given the current circumstances. All others went on to provide relevant information which has been reviewed in previous sections.

In summary, the convergent interviews met all of the objectives set out for them:

- they succeeded in providing a positive entry for the researchers,
- they established an understanding for and support of the overall research project,
- they supported and refined the results of the Delphi study, and
- they provided valuable information for further consideration and testing.

They acted as an excellent research phase in between the broad scope of the Delphi study and the specific, hands on group feedback sessions.
Appendix 4:
Case Study: Werbedruck Petzold (study unit)

1. COMPANY DETAILS/specifications
Werbedruck Petzold
Robert-Bunsen-Strasse 41-43
64579 Gernsheim
Germany

Ph: +49 (0)6258 932522
Fax: +49 (0)6258 932550
www.werbedruck-petzold.de

Located within the light industrial district of Gernsheim, a town located on the Rhine River, in the central part of Germany, close to Frankfurt. The facility is within close access to both the A5 and A67 freeways, and Frankfurt international/domestic airport 20 minutes away.

a. Ownership: The company is privately owned and operated by Peter Petzold.

b. Employees: 11 full time and 2 part time employees. These are split as follows:
   Admin and sales: 4
   Prepress: 3
   Print and production: 5
   Post production: 2

The company also utilises the services of 2 freelance printers to handle additional production in times of heightened activity.

c. Turnover: (see section 5)

NOTE: The company’s focus over the past 10 years has been on efficient, technology-driven production with small staff numbers and almost all available capital being reinvested into product research & development. On average 30-40% of company cost, annually, are directly related to this R&D, thus rendering a lower balance. The result of this commitment is now in place and the company’s products (especially, HiRes™, PhotoRealism™, and ECP™ are realising their potential).

d. Company structure: Presently the company is split into prepress and print departments with a minimum amount of post production being done in-house. The company is managed by one managing director and each of the departments mentioned above have managers responsible for their functioning and success. Further to this is a sales and business development function. It is classified as a micro sized incidental printing plant with major activities being focused on offset print, although limited screen print(varnishing) and embossing is undertaken.

The following chart summarises the current structure and share of management and knowledge input. (Organisation chart on the following page.)
2. COMPANY BACKGROUND

Werbedruck Petzold GmbH has been in operation since 1973. The business changed premises in 1992 and is now run as a print house based upon innovative, niche products, top quality and optimal customer service.

The company has served arrange of corporate and industrial clients over the years with an ongoing emphasis on the automotive, watch/jewellery, lifestyle and cosmetic industries, plus the various banking and corporate clientele stemming from the Frankfurt area. A full list of the development of the company and the owner/managers influence in this development is provided in section 5.

3. SPECIAL ATTRIBUTES (non tangible assets and goodwill)

a. Technical product developments and in-house know how (product range)
Since 1986, Werbedruck Petzold has had a strong relationship with leading suppliers to the print industry – concept client of Heidelberg, development partner of Fraunhofer Institute, and currently concept client of CREO. These partnerships have allowed the company to successfully expand its in-house knowledge base and develop new and exciting print and prepress products. The main product range is listed below:

- HiRes 10 micron printing (standard for all Werbedruck Petzold print products)
- PR (Photo Realism) imaging and print (unique, global technique to produce and print higher than ‘photograph’ quality images
- ECP (Exact Colour Print) a revolutionary colour system about to be released
b. Marketing and sales: reputation and media coverage
The strong market position and excellent industry reputation acquired by Werbedruck Petzold is often brought to the fore in industry media. The company relies heavily upon word-of-mouth, network references, and public relations activities. It also invests in direct mailings to provide brochures and information about its own specific product range. Products are distributed directly from the printing plant ie the point of manufacture.

c. Target markets
The target markets for each of its products are:

HIRes: general customers in the fields of lifestyle, and providers of domestic/consumer, and industrial products

Photo Realism: Press photos for the watch and jewellery market, fashion, automotive, and high end products

ECP: colour system providers and clients producing swatch booklets, the cosmetic industry and global corporations looking to standardise their CI.

AutoAD (centrally managed, database-driven design and layout computer program): agent and dealer networks wishing to centrally control their networks but wishing to divest some responsibility to each dealer for the production of their own marketing support material.

Some of the company’s major clients include:

4. FINANCIAL (tangible assets)

a. Land and buildings
- approx. 2.000m² with ca. 1.000m² office + production (main building, Robert-Bunsen-Str. 41 (leased until 2012)
- approx. 2000m² office, production, store room (to date approx 200m² used by WP) owned by owner/manager

b. Equipment and materials
- 2 print machines (Heidelberg (HD) SM 52/6 and 74/5, built. 2001) (leased)
- UV varnish – special Sakurai Screen Print
- 3 HD machines (embossing, die-cut)
- Polar 92, Stahl folder
- Tango Scanner
- Prinergy-Workflow
- 3 Proofers (Veris, Best, HP)
- Creo Lotem Quantum 400, Autoloader, Kodak-Proc.,
- compl. Software, AutoAd-Server, ECP-Server, Macs x 7

**miscellaneous**
- vehicles x 4

c. **Average annual turnover** is approximately € 2.300.000,-

5. **Major developments and influence of owner/manager at each stage**

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
<th>Owner/manager’s influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>Company was founded by the current owner's father.</td>
<td>The company operated with a 1 colour offset machine and managed simple jobs, at a local level.</td>
</tr>
<tr>
<td>1984</td>
<td>Current owner took over the sole ownership of the company.</td>
<td>The current owner took the business over from his father with the view to alter the production capacity and product mix to obtain new clients and enter new markets</td>
</tr>
<tr>
<td>1988</td>
<td>Increased capacity to 4-5 colour printing machines.</td>
<td>To expand the market and printing potential the decision was undertaken to upgrade to 4-5 colour machines (growth objective)</td>
</tr>
<tr>
<td>1992</td>
<td>Company moved to new premises</td>
<td>Owner sought more modern and central facilities with the space to expand. A new office and printing plant facility was built in Gernsheim (growth objective)</td>
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<td>1995</td>
<td>a. Bigger format machines</td>
<td>The decision to move to machines with a slightly bigger format was undertaken with the objective of increasing the product offering.</td>
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<td></td>
<td>b. FM screen as standard quality</td>
<td>The owner also wished to raise the overall standard of the printed product and stabilise the printed result thus a rather radical decision was undertaken to move to FM (frequency modulated) screen technology. This decision was undertaken despite resistance from</td>
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employees and scepticism within the market. The owner felt strongly that FM screen would open door to new product development and increased quality which were not available with AM screens. This began initial testing for a product which could emulate and replace photographic prints. (both of these activities have growth objectives as well as being survival techniques as the market became increasingly competitive and liable to cost pressure)

1996  Began trialling higher densities

Client demand led the owner to search for new ways to print spot and metallic colours with standard CMYK inks. The first tests and print jobs began with higher print densities (the forerunner to the Exact Colour Print – ECP- product) (a survival and differentiation objective)

1997  a. Patented AutoAD method (an online design and layout method, guided by a centrally located server containing a template style design program guided by a database)

The owner patented a method to produce marketing material online via a centrally operated database. It was developed to meet the needs of the dealer networks of the automotive clients held by the company, but the applications were much more far-reaching. This decision and the development of a software program based upon the patented method reflect the owner’s desire to differentiate into the area of electronic design and print. This was in reaction to the wave of theory that electronic communication would eliminate traditional print. The owner was seeking to secure his future via diversification into another market.

b. CTP (computer-to-plate)

At the same time a new workflow technology known as computer-to-plate was emerging. Although there was still resistance to the new technology the owner decided to incorporate this as the standard procedure at Werbedruck Petzold (WP). In doing so, WP became the first printer in Germany to fully adopt
CTP. This was partly done to avoid the problems associated with the sensitivity FM screen had to film. Thus by eliminating film and adopting a computer-to-plate workflow the problem was solved. The owner also felt strongly about this technology as being the key to the future (he was right). Furthermore, the owner incorporated a fully automised CTP unit (automatic plate feeder) into the system even though manufacturers and the industry in general advised it was definitely not necessary for a micro-small company. The owner however believed that the time saved by having plates feed automatically would be much more significant to a small firm where one employee would have to leave his primary task continually to change plates, than in a large company where there was perhaps the luxury of having someone employed just to change plates. Especially in a micro sized company like WP were plate usage was high due to the specialisation of jobs and small editions. (The owner was driven by a need for quality and was testing concepts in the lead up to two major product releases. However, cost pressures were building and the business situation was more about survival as the investment to get the company where it was had left a big whole in the company/owner’s capital).

1999 Moved to 10micron production

Again despite much resistance from staff and the fact that the technology was very radical and new, the owner decided to incorporate CREO’s staccato 10 micron screen technology as standard for 100% of WP’s production. WP is still the only company globally to do this to this day. The owner began to see the opportunity for new products via 10micron screening and began a
market extension program aimed at developing new markets to make up for less profitable, competitive and dying markets.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>2000</td>
<td>Released Photo Realism</td>
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<tr>
<td>2003</td>
<td>Sold AutoAD patent</td>
</tr>
<tr>
<td>2004</td>
<td>Global release of ECP (exact colour print)</td>
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</tbody>
</table>
The product is enjoying much attention and interest from the market but is undergoing the typical lag associated with introducing new technologies/innovations. Another factor leading to the lack of global take up is the tight limitation on the marketing, sales and distribution of ECP. The entire global release, support and presence rely upon three people. One of which is the owner of WP who is already overloaded with various other tasks.

(The owner is now seeking a/several global partners to take over or assist with the marketing and distribution of ECP. The owner specifically does not wish to grow to a point where he can manage this within the company. Growth is no longer the objective, but rather a lifestyle choice has been made over company growth.)

2005 a. Introduced CD/DVD product

Stemming from the market feedback provided by clients of Photo Realism, it became clear that printed images are not always the norm for press relations but rather digital images with printed index cards.

The owner seized upon the opportunity to join these two and invested in a CD/DVD burner with calibrated printer. Thus a new product offering was introduced to the press/trade fair customer and that was digital photos/information on CD/DVD with printed covers or index prints and event full press kits as one package. The ‘one-stop’ concept of this package has been accepted well by the market and the product is doing well. It exemplifies the owner’s attitude to potential threats ie digital imaging in this case, and the way he turns them into innovative products. (This was a survival decision which is currently paying off).
b. Conceptual development for extension of ECP

The owner is also involved currently in the conceptual development of an extension of the ECP range of colours. The future of the company and the product will guide the outcome. (The owner has now expressed a desire to sell parts of the printing plant as it has a great deal of potential for interested investors. He has come full circle from beginning with strong growth objectives, to struggling for survival and innovating to achieve diversification, and ending up by building his company up for sale.) In the interim survival and innovation will prevail, but large scale growth is no longer a key objective driving the owner/manager of Werbedruck Petzold. However, as typical of MSEs, this objective could change quickly!