GOING GREEN: PROSPECTS FOR SMES TO ATTAIN ISO 14001 AND THE CHALLENGES THEY FACE IN THE PROCESS

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This research aimed to identify any common factors that have enabled and/or motivated SMEs to successfully implement ISO 14001 whilst the majority have not. It also identified what challenges and barriers SMEs face in doing so and how some have overcome these. The existing literature suggests that the majority of SMEs perceive their environmental impacts to be proportional to their size; have a poor understanding of environmental issues; have a poor awareness of environmental regulations; do that have the necessary expertise or leadership to address environmental issues and that SMEs with an environmental management system such as ISO 14001 are very much the minority. The main factors that influenced whether an SME had implemented ISO 14001 were: competitive advantage, regulatory compliance, supply chain pressures, leadership, expertise, resources and external support. This research used qualitative analysis of interviews with managers and directors from 8 SMEs with ISO 14001 and 4 without. All of the SMEs were based in the West Midlands or Staffordshire. Interviews were also conducted with 3 organisations offering support to businesses on environmental issues and with 1 large business who was engaging their suppliers (which included SMEs within this sample) on environmental issues. The research found that there were four main factors that enabled or motivated the SMEs to implement ISO 14001, these were: leadership, supply chain pressures, external support and SMEs' history and experience of accredited management systems. The main challenges that these business had to overcome and that prevented the other SMEs from achieving ISO 14001 were: achieving regulatory compliance, perceived financial cost, lack of perceived competitive advantage, access to relevant and affordable support and for those SMEs without ISO 14001 there was very little perceived external pressure or need for them to do so.

Key words:
Environmental Management System (EMS); accreditations, supply chain; leadership, small businesses

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1. Introduction

1.1 Overview of Research

This research aims to investigate the prospects and challenges small to medium-sized enterprises (SMEs) face in implementing and achieving ISO 14001. ISO 14001 is an externally accredited environmental management system which is becoming increasingly popular and in many cases an expected attribute for larger businesses; however the uptake amongst SMEs has been much slower with only a small minority successfully attaining it.

This research seeks to outline the possible reasons why a small number of SMEs are undertaking the process of implementing and successfully attaining this accredited environmental management system whilst the majority do not. It will do this by identifying common characteristics amongst SMEs with ISO 14001 and look at the various motivations, pressures and factors that assist SMEs to do this. The research will also investigate a number of SMEs that have not achieved ISO 14001 and identify reasons why some obtain the accreditation whilst others do not.

The overall aim for this research is to identify what factors motivate and enable SMEs to achieve ISO 14001. This research will therefore aim to help demonstrate to various stakeholders what needs to be done to enable more SMEs to do this (if it is in fact beneficial for SMEs to do so).

This research will start by discussing the current literature and research on environmental management, SMEs and then SMEs and their inclination to and success at attaining ISO 14001. The thesis will then give an overview of the research methodologies employed and the challenges that were faced in accessing and researching SMEs. The research data (interview transcripts) will then be analysed, first by giving a narrative overview of each participating SME. Then a comparison of those SMEs with ISO 14001 will be made to identify any common attributes and factors that can explain their activities in regard to implementing an EMS. This will be compared to the analysis of SMEs without ISO 14001 to identify any differences within the groups that can explain why one group has ISO 14001 whilst the other does not. The overall aim of the data analysis being to identify the factors that motivated and enabled the group of SMEs with ISO

14001 to attain the EMS. The final section of the thesis will discuss how the findings from this research compare to the ideas presented in the literature review and the existing research; it will also discuss implications of this research for owners and managers of SMEs and various stakeholders of SMEs.

1.2 Literature Review

In order to do address and discuss this subject fully it is necessary to put SMEs and ISO 14001 into the larger context of businesses and the environment. This will be achieved by discussing the current literature and research on businesses and environmental responsibility which predominantly focuses on larger businesses. This literature review will then outline various factors that enable and/or prevent businesses from obtaining ISO 14001. SMEs will then be discussed in terms of them undertaking activities to reduce their negative environmental impacts and the factors that have been found to influence them in embedding an environmental management system into the business.

One of the biggest issues for conducting a literature review on the subject of environmental management is that research in this field is published in a wide range of journals including business ethics, corporate social responsibility, small business journals and many other subjects. Many studies tend to focus on one area and therefore do not give a full picture (Moore & Spence, 2006). This research aims to look at the issue of SMEs and ISO 14001 from a wide range of sources and perspectives in order to give a detailed and full understanding of the subject.

The overall aim of the literature review is to outline and discuss factors that motivate and/or enable SMEs from obtaining ISO 14001 and highlight what barriers they may face.

1.2.1 Introduction to Corporate Environmentalism

The environmental damage of business' actions has been the topic of debate and concern ever since the negative effects of industry could be seen. Rachel Carson's book "Silent Spring" brought attention to such concerns in the early 1960s and was about the need for reform (Carson,

1963). The environmental NGOs Greenpeace and Friends of the Earth were both formed in 1971 and in 1972 the United Nations Conference on the Environment (Stockholm) was the first major international conference that addressed environmental issues in a systematic and coherent manner. The following decade witnessed the emergence of coherent systems of environmental law in the UK, the USA and the European Community. Early legislation tended to be concerned largely with pollution such as trying to deal with specific issues such as Acid rain which was an area of focus in many European countries. In the 1980s there was increased interest in conservation and the concept of "sustainable development". Howes, Skea & Whelan, (1997) argue that during the 1980s businesses started to react to environmental concerns in a more proactive and positive approach with increased interest in conservation and the idea of "sustainable development". Sustainable development can be defined as "development that meets the needs of the present without undermining the ability of future generations to meet their own needs" (Brundtland, 1987). The publication of "Our Common Future" by the World Commission on Environment and Development (1987) (the Brundtland Commission) was one of the most significant environmental publications of the 1980s. The principles of sustainable development received international support at the 1992 United Nations Conference on Environment and Development in Rio. The evolution of international law was given further encouragement at Kyoto in 1997 and at the 2002 Johannesburg Conference (Watson & MacKay, 2003). There are various definitions of sustainability; whilst they differ on how sustainability can be achieved most see it as a positive goal for society to aim for.

Corporate environmentalism in the academic and corporate literature is overwhelmingly referred to as being part of corporate social responsibility (CSR). Corporate Social Responsibility is generally perceived as an umbrella term used to describe the various ways in which firms attempt to integrate environmental and social obligations within their business activities. The European Commission defines CSR as "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (European Commission, 2002:3). This research will concentrate on the environmental aspect of CSR due to the focus of the research being ISO 14001 which is a voluntary accredited environmental management system which will be outlined and discussed fully later in the literature review.

It is possible to see evidence of the business community's concern for society for centuries. However, formal writings on corporate social responsibility are largely a product of the 20th century (Carroll, 1999). As far back as the 1930s there is evidence of CSR being discussed in one form or another. In 1930 J.M. Clark published his book Social Control of Business, in 1938 Chester Barnard published The Functions of the Executive, and in 1940 Theodore Kreps wrote Measurement of Social Performance of Business; each of these introduced the idea of whether businesses have any responsibilities beyond their shareholders. Fortune magazine in 1946 polled businessmen (as they were referred to then) about their social responsibilities with 93.5% agreeing that they were responsible for the consequences of their actions in a sphere wider than that covered by their profit-and-loss statements (Carroll, 1999).

The 1950s, 60s and 70s saw a rise in interest of CSR and a significant growth in attempts to formalise what CSR meant. Often terms such as values and ethics were seen as integral parts of CSR, for example Bowen (1953, cited in Carroll, 1999: p.270) in his book Social Responsibility of the Businessman defined CSR as referring to:

"obligations of businessmen to pursue those policies, to make decisions, or to follow the lines of action which are desirable in terms of the objectives and values of our society".

The 1980s and 90s saw less definitions of CSR but an increase in research in the field and a shift from the study of the overall idea of CSR to specific themes such as business ethics theory, stakeholder theory etc. The range and level of interest in various aspects of CSR can be seen below in figure 1. Here Carroll (1994) asked 50 academic leaders the question "What topics do you see as most important for research in the social issues in management field in the balance of the 1990s" and using content analysis measured the frequency each topic was discussed.

Figure 1: Ranking of Research Areas in the Social Issues of Management Studies

(Source: Carroll, 1994: 14)

These results highlight one of the difficulties for academic research into this area as there are a large number of different categories which are not mutually exclusive. It is impossible to fully remove any of the research areas when studying CSR and this means that various pieces of research in different areas may in fact be looking at the same processes. It is interesting however that specific environmental issues are relatively low down the list of priorities and with the rise in focus on climate change it would be useful for research to look at whether environmental issues would now feature higher in the table today.

Businesses' progress in addressing environmental issues varies a great deal between businesses with some doing only what is legally required (being compliant), some doing more than what is legally required of them (beyond compliance) and some failing to even meet legal requirements (non-compliant). Possible reasons for many businesses at the most being compliant include: combinations of confusion; uncertainty; cost constraint; ignorance; lack of political will from governments; lack of conviction about businesses' role in the environment plus successful

lobbying from pro-business but anti-environmental groups may have played some part (Gray & Bebbington, 2001).

Having charted the rise in importance of the environment to academics and business leaders, it is logical to discuss why businesses are apparently starting to take a more active interest in actively reducing their impacts on the environment. The following sections discuss the mainstream of environmental management literature which on the whole focuses on the actions of larger, often multinational corporations. It begins with a discussion of environmental management and the rise in environmental management systems.

1.2.2 Why Businesses "Go Green"

Whilst it seems clear that environmental issues have grown in prominence on the political agenda what is less clear is why some businesses decide to go beyond what is required of them by law and therefore go beyond compliance. Research by Bansal and Roth (2000) suggests a number of reasons why businesses become more environmentally responsible. Through a review of the past literature they developed the following model of corporate environmental responsiveness:

Figure 2: Model of Corporate Environmental Responsiveness Based on Literature

(Source: Bansal & Roth (2000:718)

This model of past research highlights four main factors that make a firm "go green" as being: legislation, stakeholder pressures (shareholders, NGOs etc.), economic opportunities (e.g.

competitive advantage) and ethical motives which are driven by leadership and corporate values. Bansal & Roth's model goes some way to highlight the possible factors in businesses being more responsible in terms of the environment, however, Bansal and Roth themselves criticise this model as being too simplistic in that it does not fully explain the contexts within which the four factors exist. Bansal and Roth studied a number of businesses and undertook interviews with the environmental managers and found that the model they constructed from the previous research was too simple and produced the following model:

Figure 3: Model of Corporate Environmentalism Based on Research Findings

(Source: Bansal & Roth (2000:729)

This model goes further than the previous one by not only suggesting motivations for businesses becoming more responsible, but also highlights the contexts in which the motivations may occur and how the contexts can have a positive or negative effect on the motivations. The three motivations suggested are competitiveness, legitimation and environmental responsibility. One major criticism of this model is that it is hard to see how different organisations in different

industries, different geographical locations and with different environmental impacts can have the same set of motivations for "going green". The study consisted of large businesses, so a major criticism is that it is questionable if this model can be applied to small to medium-sized enterprises. This research will be looking at small to medium-sized enterprises and will be looking predominantly at smaller firms who have implemented an environmental management system. The experience and perceived motivations of the SMEs in this study with regard to them attaining ISO 14001 will be compared to Bansal and Roth's model to see if the context and motivations for large and smaller firms are in fact the same.

1.2.3 Environmental Management

According to Hick (2000) the idea of "green business" forces a complete re-examination of the very purpose of a company's existence. Gunningham (2009) found that a growing number of organisations are seeking to reduce their environmental impacts, mitigate their environmental harm, and in doing so create a competitive advantage. Businesses are undertaking a wide range of initiatives such as pollution prevention, material and energy efficiency initiatives, development of clean technology, and product stewardship with the intention of creating new market opportunities, make financial savings and improve efficiency, to reduce environmental risk and to enhance the business' public image. However, like many other researchers and authors on environmental management Gunningham predominantly has studied and discuss larger businesses.

Gunningham (2009) outlines how this has not always been the case and that there has been a shift from the 1970s to the current day. Gunningham describes how on the whole the dominant view of business in the 1970s was that they should be maximising profits with the key proponent of this view being Milton Friedman. Friedman and others questioned why businesses would spend money and time to do more than was required of them by law. By the 1990s an increasing number, but still not the majority were, according to Gunningham starting to question these views and believed that it was possible for a business to use its resources to protect the environment and still generate profits. Businesses were seen to be becoming more prepared for the growing pressures from regulators and the growing interest in environmental issues by the public. They

were also in some cases increasing profits through developing new technologies and making efficiency savings.

With more businesses addressing the CSR agenda, environmental management practices have become a more central part of many business' policies and the environment is increasingly turning into a major strategic thrust and has been seen as a trend that is unlikely to stop (Stead & Stead, 2000). This is a significant shift with regards to business management however the issue of measuring the success of environmental management practices has been raised with a new approach needed for measuring the performance of businesses from merely achieving economic profit to developing ecologically sensitive strategic management policies (Khoo et al., 2001).

On the whole, businesses' response to reducing their environmental impacts has often been sporadic, with many examples of businesses doing little more than adopting bolt-on strategies aimed at fine-tuning their environmental performance through a limited number of initiatives rather than trying to transform the way the organisation functions. However, Welford in 1998 identified a growing number of examples of business who were developing management systems that would enable the business to make continuous improvements in reducing its environmental impacts. Welford's observations were mainly of larger businesses and since making this statement the number of businesses implementing environmental management systems such as ISO 14001 has increased which will be discussed later.

According to Stead and Stead (1998) strategic management has been increasingly driving environmental management systems. Strategic management is a process that involves the efforts of managers to successfully fit an organisation into its turbulent environment by developing competitive advantages. These competitive advantages should allow the firm to capitalise on opportunities and minimise risks. Strategic management therefore, involves continuously adapting and creating change. Strategic management's ultimate goal is to affect public perception by either reasserting an already positive reputation or establishing the company as a market leader.

1.2.3.1 Environmental management styles

The management of businesses' impacts on the environment can be viewed in various ways, and arguably the business' management style is very much at the centre of how the business will view the environment in terms of its long term strategy.

A UN survey in 1993 (cited in Robbins, 2001) demonstrates the different approaches managers may take towards their environmental management by highlighting four management styles which businesses utilise

Figure 4: Corporate Management Styles and Response to Environmental Challenges

(Source Robbins, 2001: 57)

This model represents a scale with compliance as the least proactive environmental management style and sustainable development at the other end. It is an interesting and perhaps a useful model for this research in terms of a way to view different Small to Medium-Sized Enterprises' environmental management styles. However, there is one very striking criticism of this model in

that it presumes compliance is the lowest level of environmental strategy. As will be discussed in later many smaller businesses have been found to do nothing to improve their environmental performance and in fact some do not even meet what is legally required of them. Therefore it is possible that there needs to be a "below compliance" management style, this research will investigate this idea. It will look at this model and see where the businesses taking part in the sample "fit" on this scale, if in fact they do "fit" at all. Another criticism is the concept of sustainable development as a management style. Robbins (2001) states that the concept of sustainable development is unclear and rather abstract and therefore a management style based on it is difficult to achieve. This research will investigate whether any managers from SMEs regard themselves as being a sustainable business or whether the term "sustainable development" is in their vocabulary.

1.2.3.2 Environmental Legislation

Revel & Blackburn (2007) describe the main methods of the UK government delivering environmental policies as being by either regulatory means (e.g. "Duty of Care"); fiscal means (e.g. the landfill tax) or by voluntary initiatives (e.g. ISO 14001)

UK environmental policy has in the past relied heavily on voluntary action through an emphasis on the business benefits of environmental improvement. The government's role in encouraging business down this path has predominantly concentrated in awareness raising activities and dialogue with industries.

One of the core pieces of environmental legislation in the UK that affects all businesses is the 1990 Environmental Protection Act, which introduced the regime of Integrated Pollution Control. Certain processes which are deemed to be a risk to the environment by the environmental agency now require licences, which focus on standard setting. For some firms this has meant a considerable investment has been necessary to meet the statutory standards (Chapple et al., 2001).

Over the past few years there have been some significant developments in UK environmental legislation including the Waste Electrical and Electronic Equipment (WEEE) regulations which

aim to reduce the amount of electronic goods being sent to landfill and effect businesses of all sizes. Currently being developed and due to be implemented in April 2010 is the Carbon Reduction Commitment (CRC) which was outlined in the Government's Energy White Paper in May 2007. This legislation requires larger businesses with annual energy bills of over £500,000 to be part of a mandatory carbon trading scheme. Each year businesses will purchase allowances and then at the end of the year based on their carbon reduction performance they will be put in a league table with other businesses within their sector and will either receive a bonus or penalty depending on their position. This legislation along with regulations like WEEE can be seen as a shift away from the voluntary initiatives of the past. However, it must be noted that CRC regulations are unlikely to affect many smaller businesses and even the WEEE legislation will only affect certain businesses in specific sectors.

1.2.3.3 Stakeholders

From the perspective of corporate stakeholders the importance of businesses managing their environmental impacts is growing in significance. For investors, the shareholder value will drop if companies have to pay fines and clean-up costs and damage to their reputation. Whilst, for consumers, there is a growing number who are showing a preference for greener products from green companies (Ilinitch et al., 1998). Henriques & Sadorsky (1996) identify four critical environmental stakeholders as:

1) Regulatory stakeholders – these either set regulations or have ability to make governments set standards. These include governments, trade associations, informal networks (sources of technological information) and competitors (potential environmental technology leaders that may set industry norms and/ or influence legislation).
2) Organisational stakeholders – these are directly related to an organisation and can have direct financial impact on the company. These include customers, suppliers, employees and shareholders.
3) Community groups – these are environmental organisations and other potential lobbies who can mobilise public opinion in favour of or against a business' environmental policies.
4) The media – these have the ability to influence the public's perception of a business.

It is important that businesses are able to identify their stakeholders and are able to identify what these stakeholders' expectations and demands are and be able to respond to them.

This research will be particularly interested in the role of stakeholders as the above four critical environmental stakeholders would appear to apply on the whole to large, possibly multinational organizations. What will be of interest and studied in this research will be whether these four groups of stakeholders (or any other stakeholders) influence the actions of SMEs.

1.2.3.4 Summary

To summarise, research has shown that businesses (predominantly larger ones) have been seen to be incorporating environmental issues into their strategic management and a number have been "going green". It is seen as a possible competitive advantage and there is a need for businesses to legitimise their activities. There appears to also be a shift from voluntary initiatives to further reaching legislation and environmental regulations which are requiring businesses to reduce their carbon emissions or face penalties. What is not so clear is whether smaller businesses have also made environmental issues part of their strategic decision making process and whether the above factors have motivated them to become develop environmental management systems and/or become a more responsible business in terms of the environment.

The literature review will now look in more detail at environmental management systems, in particular ISO 14001 which is the focus of this research.

1.2.4 ISO 14001

Environmental Management Systems (EMSs) encourage firms to adopt voluntary policies dedicated to continual improvements in environmental performance. The International Standards Organisation (ISO) is located in Switzerland and was created in 1947 to write technological standards for industrial processes and products. The ISO was formed by 25 countries deciding to merge the International Federation of the National Standardising Association (IFNSA) and the United Nations Standards Coordination Committee (UNSCC). The central mission of the ISO is

to “facilitate international trade and commerce by developing common international standards for products, materials and processes” (Prakash & Potoski, 2006:p. 83).

The ISO 9000 series was the first series of standards developed which certified management practices, this series related to quality management systems and there was widespread uptake of these in the late 1980s. The first environmental management system to be developed was BS 7750 developed by the British Standards Institute (BSI), (Kollman & Prakash, 2002).

Around this time there was also a change in the EU's environmental policy in the early 1990s with a desire for more voluntary and market-orientated instruments in its policies (CEC, 1993 cited in Hillary, 1999). In December 1991, the EU proposed the Eco-Management and Audit Scheme (EMAS), this was a voluntary system by which businesses could commit to implementing an EMS, with a commitment to continually improving their environmental performance and to be audited by an external auditing team. In 1992, a Technical Committee (TC 207) was set up with forty seven countries participating to create environmental standards. National standards organisations such as the UK's BSI make up the official membership of the International Standards Organisation although appointed experts form subcommittees which actually write the standards. These committees created the ISO 14000 series in 1996 (Kollman & Prakash, 2002). Of this series ISO 14001 gained greatest attention as it is the only certifiable accreditation in this series.

The overall goal of ISO 14001 is to improve businesses’ environmental and regulatory performance by having participating firms adopt an EMS (Potaski and Prakash, 2005). To obtain ISO 14001 a business must undertake an initial review of its environmental practices, formulate and implement an action plan for environmental management with ongoing performance targets, clearly identify internal governance responsibility for environmental issues and make necessary corrections to address any environmental problems that have been identified. To get certification, firms are required to annually undergo third party audits. External audit teams can interview anybody at the company, from managers to line workers to assess whether employees understand the requirements of ISO 14001. Auditors perform surveillance audits of the business at least once a year and complete reassessment of certified businesses every three years. The ongoing auditing

is aimed at making managers think of ISO 14001 as an ongoing process to improving environmental performance (Potoski & Prakash, 2005).

There are various proposed reasons for why businesses chose to undergo the process of achieving ISO 14001, one being the perceived financial benefits which would support neoclassical economic theory (Friedman, 1963). Theoretically there are various ways in which businesses may be able to increase profits with ISO 14001. One way would be that if enough businesses became accredited then they may be able to influence regulation which could have adverse affects on competitors without ISO 14001 and who may have a poorer environmental performance. During the process of ISO 14001 firms may find various ways to increase efficiencies and reduce waste which may become significant cost savings (Hart, 1995). If businesses are solely interested in financial gains then managers perceptions of such possible rewards will have a strong influence of whether they adopt or do not adopt a voluntary EMS such as ISO 14001 (Prakash, 2000).

Prakash & Potoski (2006) see the reputational value of ISO 14001 as being the main reason why more and more businesses are adopting it. They saw various examples (predominantly larger businesses) of this through visiting businesses websites and by talking with their environmental managers. In regards to this research, this point will be revisited later as this may not be the case for SMEs who may be under less scrutiny from consumers and stakeholders and who may not regard their environmental performance as a selling point to be marketed.

Alternatively institutional theory suggests that businesses may implement ISO 14001 due to their desire to give the impression of legitimacy due to various external pressures (Meyer & Scott, 1992 and as shown previously by Bansal & Roth, 2000), businesses may undertake similar strategic actions to make them appear more legitimate to external stakeholders (DiMaggio and Powell, 1983). Legitimate businesses activities are seen or presumed to be desirable or appropriate within some socially constructed system of norms, values and beliefs (Suchman, 1995). As more and more businesses adopt ISO 14001 it may become the norm and there may become an expectation that businesses of a certain size have this “badge” of environmental responsibility in a similar way ISO 9001 has been seen as an expected badge of quality. With the growing number of larger businesses attaining ISO 14001 there is support for it becoming a

norm, what is less clear is whether the same is starting to occur with SMEs, this will be investigated in this research.

Following on from this there is evidence to suggest that having one standard can make it more likely that a business will go on to attain others. Delmas & Montiel (2008) investigated the diffusion theory of standards, looking at whether having one standard is likely to lead to a business going on to have more and more. In the existing literature they found two main contradictory lines of thought, firstly that businesses could be subjected to norms of exclusivity where they are discouraged to participate in competing standards and the flip side being that businesses could find there to be benefits from adopting voluntary standards and from the initial adoption of a standard they become more likely to adopt subsequent standards. Their research supported the latter explanation. They compiled a panel dataset of the total number of ISO 14001 certified organisations within the chemical sector in 113 countries between 2000 and 2003 and tested whether the adoption of ISO 14001 was assisted or hampered by the adoption of other standards such as ISO 9000. They found some evidence for the adoption of ISO 14001 being easier for companies that have adopted ISO 9000. They found that ISO 9000, Responsible Care Programme and EMAS all increase the adoption of ISO 14001. One criticism of those studies sample is that all of the companies came from the chemical sector which is a highly regulated industry. Therefore, the adoption of standards may in fact be influenced by the high level of regulation.

Whilst there are various possible reasons for businesses to adopt ISO 14001 this does not necessarily mean that businesses actually achieve the goal of improving their environmental performance and therefore reducing their environmental impacts. Prakash and Potoski (2006) describe ISO 14001 as a process or systems led approach. It is primarily interested in changing processes and managerial systems and when this is done it is hoped that the desired outcomes will follow. They go on to summarise ISO 14001 as imposing moderate to lenient requirements on firms. This is mainly due to the fact that the criteria and requirements of ISO 14001 can be interpreted differently by different businesses and that whilst the accreditation requires improvements in businesses' environmental performances the level of improvement can be determined by the business. This is a serious limitation of ISO 14001 in terms of it driving change and reducing the environmental impacts of businesses as any study of it requires the

researcher not only to look at how and why it is implemented by companies but whether there are any measurable improvements to the businesses environmental performance due to its implementation. This research will look at this to some extent however as will be discussed later, SMEs environmental performances are very difficult to measure, especially compared to larger businesses where often data is available regarding their emissions.

Whilst ISO 14001 may not state required improvements from businesses the key findings of Prakash and Potoski's (2006) research demonstrated that ISO 14001 does appear to improve environmental performance. This is mainly attributed to the third party auditors maintaining business managers' attention to continuously maintaining and improving their environmental performance. Prakash and Potoski's research looked to identify the differences in terms of environmental performance between companies (with an average number of employees in excess of 400) with and without ISO 14001. The research looked at data from over 3000 US businesses and looked at their environmental performance (measured using toxic air-pollutant emissions reported in the Toxics Release Inventory (TRI)) and whether the businesses complied with regulations (measured using data from AIRS/AFS data on whether businesses are complying with air pollutant requirements). The research found that "as a group ISO 14001 accredited facilities have better regulatory compliance records and lower pollution emissions than they likely would have achieved had they not joined the club (referring to ISO 14001)" (Prakash & Potaski, 2006: 148).

Another study looking at the effects of ISO 14001 was Russo (2009) who studied the impact of ISO 14001 on emissions performance through interviews within a sample of 316 electronics facilities as well as analysis of data from 1996 to 2001. The businesses ranged in size with a mix of both SMEs and larger, multinational corporations. Russo found that being one of the first businesses to adopt ISO 14001 was associated with lower emissions and the longer a facility operated under ISO 14001, the lower its emissions.

These pieces of research indicate that there is some evidence of the environmental benefits of ISO 14001, however there are limitations to these research findings. One of the main limitations of Prakash & Potaski's research is the lack of distinction between different sized businesses. As stated the average size of business in the study was over 400 employees, this therefore means that

it is not known whether these findings would be found with SMEs. This idea is supported by the fact that the study used data regarding emissions which are not readily available or may not be appropriate as the main environmental impact for many SMEs. Also, this research is limited as whilst it demonstrates that there is a correlation between having ISO 14001 and their toxic emissions and compliance with regulations it does not fully investigate why this is the case, nor why the business adopted the accredited SME. Russo's research is mainly limited by the fact that the findings may only be relevant to the electronics industry and the findings may not be able to be generalised to a wider population. This research will seek to look at the reasoning for SMEs to adopt ISO 14001 and will seek to look at what perceived and actual (where data is available) improvements there have been in terms of the SMEs environmental impacts and performance for a range of sectors.

Once an environmental management system is undertaken and achieved it does not mean that it will be a straightforward or successful process. There are a number of perceived factors which have been seen to make environmental management systems either ineffective or fail to ever be fully developed. Piasecki, Fletcher & Mendelson, (1999) see the following as being such factors: corporate downsizing, which often throws environmental (and other) programmes into tailspins; tight financial controls and increased scrutiny of bottom-line contribution for all organisations in the company; new management paradigms (e.g. re-engineering, Total Quality Management) that distract management attention and reorient priorities; environmental strategies and programmes that are too broad or try to do everything at once (thereby increasing costs and diluting payback) and do not fit well with the overall business strategy; unrealistically high expectations for potential benefits from strategic environmental management resulting from overly aggressive sales jobs or cheerleading; early environmental, health & safety initiatives have picked the low-hanging fruit removing the high-return/low-effect opportunities; creation of an environmental culture that is not congruent with the business culture of the company and poor communication between the environmental managers and the lines of business about the types and sources of competitive advantage that can be accrued. What will be of interest in this research is whether these factors have prevented any of the SMEs without ISO 14001 from obtaining it or whether any of these factors were experienced by the SMEs with the accreditation and if so, how they have been overcome.

ISO 14001 has been seen as a success in terms of its adoption and the growing number of businesses around the world implementing it. Figure 5 from The ISO Survey of Certifications 2007 shows the number of organisations worldwide who have implemented ISO 14001 from 2005 to 2007.

Figure 5: Worldwide Number of Organisations with ISO 14001

(Source: ISO Survey of Certifications 2007 – Principle Findings: 6)

Over these three years there is a clear increase in the number of organisations with the accreditation as well as a growing number of countries with organisations becoming accredited. Of the 154,572 organisations with ISO 14001 in December 2007, Figure 6 demonstrates how this number is broken down into the top 10 countries:

Figure 6: Top 10 Countries for ISO 14001

(Source: ISO Survey of Certifications 2007 – Principle Findings: 6)

With 7323 of the 154,572 organisations being from the UK it has the 5th greatest number of organisations with the accreditation. However, whilst there is not the data readily available it would be expected that the majority of these would be larger businesses. China has the greatest number but obviously has a greater total number of organisations in the country. What may be of more of a surprise is the lower number of organisations in USA with it.

The reason for a much higher proportion of UK business obtaining ISO 14001 compared to US businesses according to Prakash and Potoski (2006) is due to the way the UK environmental legislation has developed in recent years. There has been a shift in UK regulation towards voluntary initiatives and management systems long before the US. BS 7750 developed as a voluntary environmental management system by the British Standards Institution (BSI) in the UK meant that by the time ISO 14001 was introduced businesses and regulators had experience of voluntary environmental management systems and there was therefore less resistance, unlike the US where this was a much newer concept. The BSI has also promoted ISO 14001 as has the UK government through the Department of Trade and Industry. This support and promotion has not been as evident or successful in the US.

1.2.4.1 Auditing

One key area of ISO 14001 which is a requirement for it to be successfully achieved and can cause concern for business managers is the external auditing process. Power (2002) suggests that auditing (as required with ISO 14001) is part of a wider cultural phenomenon with different societies developing patterns of institutionalised checking and trust to deal with activities where resources are exchanged or entrusted. During late 1980s and early 1990s the use of the word "audit" became more common in Britain with it not just referring to the regulation of businesses accounting but to a wide range of issues which include environmental regulation.

Power (1997) suggests that there is no agreed definition of what auditing is. One traditional definition (from financial accounting which is seen as the largest form of auditing) is the "independent examination of, and expression of opinion on, the financial statements of an enterprise" (Power, 1997: 4). This can be generalised to include environmental performance, however there are differences between financial and environmental auditing. The main

differences between financial and environmental audits are that financial audits are a legal requirement being "statutory, annual, verificatory, external and based on generally accepted accounting principles" (ICC, 1991 p. 63), whereas environmental audits are voluntary and are "of variable frequency, managerially orientated, internal, relative to varied standards of performance and focused on environmental issues" (ICC, 1991: p 63).

The importance of this distinction according to Power is that financial auditing is a regulatory practice which may be used as a management tool whereas environmental audits are a management tool which may act to influence a business's regulatory practice.

Accreditation schemes such as BS 7750 and ISO 14001 are voluntary initiatives and therefore the idea is to develop a compliance system and culture within the business from the bottom up leading to internal commitments. The auditing of these initiatives focus on the management systems that are in place in the businesses rather than the products or services that are offered. This means that businesses develop their own environmental policy, provide methods of being able to measure these and be able to monitor and report their performance.

Power (1997) suggests that there is the potential for environmental management systems such as ISO 14001 to become a structure that enables a certain type of auditing to be possible, whereby auditing actually drives change and improving performance rather than monitoring the process. As has been stated one of the major issues with accredited management systems of this nature is they may not create significant changes in the operations of a business as the business can set their own standards and objectives and overall will depend on how the business defines performance measures for itself. This may be of particular interest with SMEs where the literature suggests that their managers have a poor perception of their environmental impacts and have no accurate ability to measure their environmental performance in the same ways as larger businesses; this assertion will be discussed fully later in the literature review when focusing on SMEs. This may mean that SME managers use ISO 14001 to drive their environmental change with extremely small objectives which are proportional to the perceived small impact the business has on the environment.

There is evidence of businesses becoming increasingly aware of and adapting to the auditing process. Power sees there to be a "steady transformation of internal control cultures into externally auditable objects" (p. 114) with the managers of the businesses being audited developing strategies to deal with these objects being externally judged. This research will look at SMEs who according to the literature have a general lack of environmental expertise and see whether their managers are starting to adapt to the environmental auditing system which will be new to many of them. This adaptation will be viewed in terms of how the managers respond to the auditors and whether the auditing measures their environmental performance or whether it drives the change in this performance. Power (1997) states that "games are played around an "indicator" culture where auditable performance is an end in itself and real long term planning is impossible" (p. 121). This will be investigated with regard to SMEs.

Another way of viewing auditing is to compare it to the idea of evaluation. Chelimsky (1985) sees an important distinction between auditing and evaluation. She sees auditing as "the checking of performance against pre-set measures and standards" whereas she views evaluation as the measuring of the effectiveness of programmes to affect the outcome". This difference can be summarised as auditing being about checking compliance whereas evaluation provides empirical knowledge and addresses cause and effect issues and tries to explain the relationship between the changes that have been observed and the programme. This means that for a system to be audited there needs to be standards and measures in place.

The question arises of whether ISO 14001 reflects a significant improvement to a business' environmental performance or just that an environmental management system has been put in place. Power (1997) states that "more accounting and auditing does not necessarily mean more and better accountability" (p. 127).This is an important aspect to ISO 14001 as the whole accreditation is only as successful as its auditing process as showing actual changes in a business environmental performance is not an explicit requirement of the standard.

There is a danger that environmental improvements become defined in terms of the management system rather than environmental protection and as such may be little more than environmental tokenism. According to Brophy et al. (1995) environmental auditing does not represent a shift in management paradigm towards some kind of sustainability as has been suggested. In order to see

evidence of sustainability observable changes to the physical environment and not the management systems of businesses needs to be seen.

Overall, ISO 14001 is continuing to grow in popularity with the UK having the 5th greatest number of organisations with the accreditation. However, there are questions about the various factors that may prevent or make it difficult for businesses to obtain the accreditation and this research will investigate what challenges there are for SMEs. Equally questions have been raised about both the effectiveness of the accreditation in actually improving businesses' environmental performance and the role the auditing process plays, these issues will be investigated in this research also for SMEs.

Now that ISO 14001 has been discussed in detail, this literature review will move on to look at SMEs and their environmental management.

1.2.5 Small to Medium-Sized Enterprises (SMEs)

In order to identify the factors that influence SMEs adoption of ISO 14001 it is necessary to start by clearly defining what is meant by an SME. Once this is achieved the discussion will move on to look at the various factors that influence ISO 14001, from the existing literature it has been found that these include: SMEs awareness and attitudes to their environmental impacts; SMEs and their experiences of and attitudes towards UK environmental legislation; SMEs and environmental management; SMEs and environmental leadership; the influence of supply chains; role of support organisations and then it will conclude with an overview of the business benefits of accreditation that have been found and the reasons why some SMEs obtain the accreditation whilst others do not.

1.2.5.1 Definition of SMEs

Definitions of SMEs vary, in 1996 the European Commission set about establishing the first common SME definition which was widely applied throughout the European Union. In 2003, the Commission adopted a new recommendation in order to take account of economic developments

since 1996. It entered into force on 1 January 2005 and applies to all the policies, programmes and measures that the Commission operates for SMEs (European Commission, 2005). According to this definition there are three factors which must be taken into account when deciding if a business is an SME, these are headcount, annual turnover and annual balance sheet total. A SME consists of enterprises which have fewer than 250 employees and which have an annual turnover not exceeding 50 million euro, or an annual balance sheet total not exceeding 43 million euro. The breakdown of the limits on these three factors (including the 1996 limits) for micro and small enterprises can be seen in figure 7.

Figure 7: Characteristics of micro, small and medium-sized enterprises

Enterprise Category	Headcount	Annual Turnover		Annual Balance Sheet Total
Micro	<10	≤ €2 million (not defined in 1996)	OR	≤€2 million (not defined in 1996)
Small	<50	≤€10 million (in 1996 €7 million)	OR	≤€10 million (in 1996 €5 million)
Medium-sized	<250	≤€50 million (in 1996 €40 million)	OR	≤€43 million (in 1996 €27 million)

1.2.5.2 Significance of SMEs

As has been stated a review of literature and research on corporate environmentalism demonstrates that most attention and importance is placed on larger businesses and in many cases on sectors with high impacts on the environment. It is therefore essential to begin by answering the question "Why study SMEs?" At the start of 2007 there were 4.7 million businesses in the UK, of these 99.9% were SMEs. 13.5 million people are employed by SMEs with 59.2% of private sector workforce working for one. SMEs also contribute as much to UK output as big business, with 50% of Gross Value Added and 51.5% of turnover (BERR, 2007). From these statistics it is evident that economically SMEs are a significant group. Despite the difficulty in collecting hard data on the environmental impact of small businesses, their contribution to pollution is likely to exceed this figure, as smaller enterprises are likely to be less "eco-efficient" than larger firms, which are able to benefit from resource efficiencies and economies of scale

(Rutherford et al., 2000). Some estimates have claimed that small firms create 70% of industrial pollution (Smith & Kemp, 1998). The Marshall report indicates that 60% of carbon emissions from industry could be attributed to SMEs (Marshall, 1999). These figures (especially the statistic of 70%) are used by many however it is hard to see how they can be accurate. Overall due to their number, SMEs are likely to have a large negative impact on the environment and therefore there is a need to conduct research into how they conduct their business.

1.2.5.3 SMEs awareness and attitudes to environmental issues

Holland & Gibbon (1997) suggest that many small firms believe that their environmental impact is proportion to their activities, i.e. small and minimal, and they found that SMEs responded quickly to environmental issues with relatively small environmental impacts but not to greater impacts. They found a substantial gap between the environmental awareness of SMEs and the business benefits they can gain. This research is now over a decade old and this research will to some extent investigate whether this is still the case.

Taylor et al. (2003) surveyed a range of business managers from both manufacturing and service sectors and found that most of the managers believed that environmental issues affected their business. Managers of SMEs have been found to see benefits of reducing their businesses environmental impacts but the financial performance of their business remains the top priority as shown in research by Petts et. al. (1998b). Petts used questionnaires and focus groups to investigate SMEs environmental responsiveness and found that the environment was seen as having a potential business benefit in all companies. This idea is summed up by one of the study's participants with a director of one of the SME's stating "I am not here to save the whales but to remain competitive, but if I can do something positive for the environment as the same time I would be pleased". In each of these SME there was a "green champion" someone who was highly motivated to make their business more environmentally responsible, each of these champions in the study spoke about personal environmental interests and beliefs but remained focused on business benefits as the primary motivation.

Revell & Blackburn (2007) view SME owner-managers as not perceiving themselves to have the necessary capabilities to improve their environmental performance and therefore they were seen to act in a reactive rather than proactive approach. However, Hillary (2000b) did not just see smaller firm's management as reactive but instead ignorant stating small firms were: "ignorant of [their] environmental impacts…. oblivious of the importance of sustainability….cynical of the benefits of self-regulation [and] difficult to reach, mobilise or engage in any improvements to do with the environment" (p.18). The difference in the level of pro-activeness of SMEs seen by Revell and Blackburn and Hillary may be down to the seven years between their research, this study will look at whether the SMEs in this study are ignorant of their impacts and their perception of their capabilities of dealing with them.

A problem for many SMEs is their limited resources in terms of available manpower, time and finances to deal with environmental management and performance issues. They are less likely to have the processes in place to be able to accurately measure their impact on the environment compared to larger businesses and therefore, not being able to accurately measure their impacts may mean they have less motivation to change and try to reduce them (Tilley, 2000). Compounding this is the fact that the environmental agenda has become crowded by various environmental issues and many of these have not been defined with sufficient clarity to enable larger firms with sophisticated environmental management system to deal with them, let alone SMEs (Hutchinson & Hutchinson, 1995).

To summarise Hillary (2000a) states that "SMEs compromise the fabric of societies. Change their attitudes towards the environment and we have a chance to achieve sustainable development. Ignore them and we all suffer" (p.54) which highlights why a change in the general perceived attitudes of SMEs to the environment is essential.

1.2.5.4 SMEs and regulatory compliance

Unlike the majority of larger firms, smaller businesses may be less likely to have regular face-to-face contact with a regulator such as the environment agency. It has been suggested that for many smaller businesses compliance with environmental legislation has not become as closely regulated as health and safety legislation, where there are often more ongoing and extensive

programmes of inspections for businesses of all sizes (Rutherford et al., 2000). A lack of contact with a regulator may be a significant factor in why SMEs may be less likely to comply with environmental legislation due to the lack of pressure.

The literature on corporate environmentalism shows that some larger business have not only been compliant with environmental legislation but they do more than is required of them by law, in the literature this is referred to as going beyond compliance. Beyond compliance policies specifically propose to exceed the requirements of extant laws. They may involve modifying physical aspects of processes or adopting new management systems (Prakash, 2000).

Not only may smaller businesses face less pressure from regulators, the small business managers are often less likely to be aware of what regulations affect them and may therefore be unaware if they are compliant with the law. In a UK survey of attitudes to environmental issues among SMEs it was found that 95% were unaware of the Duty of Care Regulation for waste, this regulation applies to even the smallest business. If SMEs are unaware of what is required of them by law then it not surprising that they are unaware of their environmental impacts and rarely take voluntary action to reduce these impacts (Merritt, 1998).

This idea was also supported by Merritt (1998) who found that SMEs awareness of environmental legislation directly affecting their business was poor and there was a general perception that legislative compliance would be costly. Also Taylor et al., (2003) found that SMEs only have a generalist awareness of environmental legislation and information presented by most local support services is not presented in a format that is efficient or effective.

The Federation of Small Businesses (2002) identified from a national survey of member firms that government legislation and regulation was one of the key determinants of small-business survival and growth, and claims that across a range of legislative areas small businesses have a generally negative view of government action, with key concerns including the complexity, volume, rate of change, inspection and enforcement of the regulations. Around a quarter to a third of respondents claimed to have been affected by regulations regarding special waste, duty of care, waste management, landfill tax and the climate-change levy with the majority reporting a negative impact on the bottom line. For those SMEs who come into contact with regulators and

have to react to environmental legislation, regulatory compliance is mainly perceived as a matter of business survival rather than as a springboard for enhanced environmental performance (Patton & Worthington, 2003).

In contrast to some of the above research findings, Patton & Worthington found that smaller firms' actions were largely designed to achieve regulatory compliance. This appears to have been a defensive and reactive posture taking action to protect them from legislation motivated mainly by the desire to maintain business continuity and survive rather than by market considerations or perceptions of social good.

For medium sized businesses (between 50 and 250 employees) that went beyond compliance with the regulations, there is little evidence that legislation was the main catalyst in shaping corporate behaviour. Rather, it seems that internal motivators, such as management support, considerations of quality, and (possibly) commercial benefit, were more significant drivers of corporate response (Prakash, 2000).

Rutherford & Spence (1998) found in a comparative study of UK and Dutch SMEs that UK SMEs tended to see the government as being responsible for the environment and that their initiatives were seen as having little influence on environmental performance due to structural barriers. Rutherford and Spence concluded that SMEs were easily able to ignore environmental issues due to no substantial national structure forcing the environment onto business agenda of SMEs. The UK Government's policy on the environment can be characterised as predominantly voluntary initiatives which are sector rather than size specific.

Petts et al., (1998a) found that a common theme to emerge from previous surveys of SMEs was that compliance with legislation is a key motivating factor behind environmental performance, however, through a combination of quantitative surveys and qualitative focus groups they found that regulation does not seem to provide the strong baseline for development of culturally and internally driven change within many SMEs as has been suggested by some other research and as discussed in models of corporate greening. It is important to note that this research is almost ten years old and more recent research by Williamson et al., (2006) found through an empirical study of West Midland based manufacturing SMEs that environmental practices are driven by both

business performance and regulation, with regulation producing the highest levels of environmental activity. Whilst their research emphasises the importance in regulation, it states that SMEs do not exceed regulation because their "market-based decision-making frames are incompatible with beyond compliance" (2006: 326). What is of interest for this research is whether ISO 14001 is a means to legitimise a business's activities and demonstrate compliance or whether it promotes beyond compliance, this idea will be investigated in the research.

This idea is reinforced by Revell and Blackburn's (2007) who studied UK SMEs in the construction and restaurant industries and found that managers of SMEs prefer regulation to voluntary initiatives as this creates a level playing field, however for this to be effective there is a need for greater inspections by the regulators. One criticism of Revell and Blackburn's research is that the two sectors chosen are fairly heavily regulated. Restaurants will be used to contact and pressure from food and hygiene inspectors and the construction sector is heavily regulated for health and safety and quality. Therefore it may not be that surprising that SMEs in these sectors were found to prefer environmental regulation to voluntary initiatives as they are familiar with working in a highly regulated sector.

To summarise, in the literature of corporate greening, the regulatory domain has been identified as a key influence on the environmental behaviour of firms and has been linked to actions beyond compliance and to the pursuit of competitive advantage. That said, studies of the environmental performance of SMEs suggest that, on the whole, smaller firms tend to take a more reactive and compliant stance with regard to environmental legislation, with little evidence existing to suggest that regulation provides a strong baseline for internally driven change (Patton & Worthington, 2003). It remains to be seen if there is an effect of ISO 14001 on a SMEs perception of regulation and compliance. It is perceived that the auditing element of ISO 14001 may discourage many SMEs from undertaking it, the literature suggests that the reason for this is that if SMEs do not have a full understanding of environmental regulations then they may be uncomfortable with auditors uncovering this, especially if to become compliant will cost money or even risk their business' continuity.

1.2.5.5 SMEs and environmental management

According to Tilley (1999) small firms are not simply little versions of big firms, therefore environmental management theories generated for larger businesses should not be automatically applied to SMEs. Dandridge (1979) states that smaller firms differ from larger firms in their management style, organisational structure and in the characteristics of their owner-managers.

Organisational theory suggests smaller businesses have limited strategic awareness and management (Gibb & Scott, 1985). It goes on to suggest that many fail to write down a formal plan or business strategy beyond their short-term operations. However, Tilley (1999) argues that even though a small business may not write down or even have a formal strategy for dealing with environmental issues they will still have an environmental strategy, as doing nothing is a strategy in itself. Tilley goes on to suggest four strategies that small businesses may adopt with regard to environmental management (these are based on the literature):

1) Resistant strategy – there is either little awareness of an SME's impact or it sees no need to improve its environmental performance, therefore no action is taken and any pressure to change is ignored

2) Reactive strategy – an SME responds to any pressures exerted on it to improves its environmental performance, this often leads to ad-hoc and piecemeal solutions

3) Proactive strategy – there is a positive and deliberate effort for a business to improve its environmental performance. These improvements are ongoing and permanent, but not always fully integrated into the management of the business.

4) Sustainable or ecological strategy – there is a fundamental rethink of all aspects of the business with a holistic integration of the environment into the structure and management of the business.

Tilley conducted quantitative research surveying 60 SMEs (29 engineering and 31 business services) and found that the overall level of environmental activity amongst these small firms was relatively low with 40% failing to do anything to reduce their environmental impacts and that most behaviour to improve environmental performance was individual ad-hoc initiatives and activities rather than a strategic and more holistic approach. Tilly's research findings looked again at the four business strategies based on previous research and adapted these with the research findings:

1) Strategic environmental behaviour: proactive strategy – proactive small firms with ongoing commitment to improving their environmental performance

2) Piecemeal environmental behaviour: reactive strategy – small firm that takes single issues as and when they arrive and deals with them in an ad-hoc manner

3) Accidental or token environmental behaviour: resistant strategy – small firms who unintentionally make improvements to their environmental performance. This can only loosely be described as pro-environmental behaviour

4) Omitted environmental behaviour: resistant strategy – small firms who fail to include the environment in any of their decision-making processes.

The main differences between the two sets of behaviours are that Tilley excludes sustainable/ecological strategies in the second as there was no evidence of environmental concerns being holistically integrated into the business activities of small firms in their study. However due to examples of unintentional improvements of environmental performance this was included as a management style. One limit of this research is that it was based on a quantitative survey and therefore there may be issues with the accuracy of the participants' perceptions of their behaviour in the past. With qualitative research (such as this study) this may not be as significant an issue as the study makes it possible to look at a participants actions and their perceptions of the reasoning for them in more detail and there is more scope to look at why someone has behaved the way they have.

This research will be focusing on those businesses that have IS0 14001 and will be looking at whether this was undertaken by SMEs and a proactive, strategic decision or whether it was a reaction to pressures from either within or outside of the business.

Freel (2000) states that a number of studies have demonstrated the issue of there being poor management in smaller firms, if this is the case then it may be expected that smaller firms will also be poor at managing and therefore reducing their environmental impacts. This idea is supported by research carried out by Merritt (1998) which found that SMEs had little knowledge in the field of environmental management and that they had not introduced formal practices to manage the environmental performances of their businesses.

Whilst it has been found that most firms irrespective of size appreciate to some degree the importance of good environmental practices, there is a lack of awareness of how this can be best achieved, particularly in SMEs (Greenan, Humphreys & McIvor 1997). The over reliance on voluntary initiatives such as formal environmental standards is unlikely to integrate well with the style of management in the majority of SME as discussed previously (i.e. have no formal plan or formal long term strategy). For example the up-take of voluntary formal standards, such as IS0 9000 and BS5750 has been very low with SMEs (North, Blackburn & Curran 1998).

In terms of managers looking first at other businesses and deciding whether to adopt similar actions themselves, it has been perceived that larger organisations have a greater impact on other businesses as they are seen to have greater resources for identifying valuable practices and therefore make more profitable adoption decisions (Bikhchandani *et al*., 1998). However, Terlaak & King's (2007) empirical study exploring the adoption of ISO 9000 with a sample of 13,710 US manufacturing facilities found there was evidence for a SME having a greater influence on other organisations than a larger one when it comes to the adoption of ISO 9000. The reason being that if a business sees that a smaller business has benefited from adopting the accreditation then they are likely to presume they can benefit also. Whereas a business comparing itself to a larger organisation who has adopted ISO 9000 may presume that due to having less resources they will not benefit in the same ways as the larger organisation.

Managing the environmental aspects of their activities in a systematic and preventative approach implies, for most SMEs, a considerable effort in terms of human, financial and technical resources, regardless of their industry. In developing an EMS SMEs face a number of financial costs: costs relating to necessary technical measures to guarantee the improvement of environmental performance; costs relating to EMS implementation and costs incurred in obtaining third-party verification (Biondi et al., 2000).

Hillary (1999) found from a review of 33 separate studies on SMEs and corporate environmentalism that internal barriers to EMS adoption were more important than external ones. The lack of human resources rather than financial ones is the major internal barrier to EMS implementation and becomes increasingly important as the size of the company decreases. She also found that another internal barrier is that EMSs are an interrupted and interruptible process in SMEs and that in general SMEs were largely ill-informed about EMSs, how they worked and what benefits can be gained from their implementation. Finally, there are practical problems with EMS implementation that include how to undertake an environmental aspects and impacts assessment, particularly how to assign significance to different aspects of the business.

Hillary found from the review that the external barriers to EMS adoption were the inconsistencies in and barriers from certification and verification systems and the high costs associated with being certified to ISO14001, many SMEs faced little motivation for EMS adoption and are uncertain of the benefits. SMEs find it difficult to get consistent, quality information with a lack of sector specific guidance. It was also found that the environment is not a core business issue in the majority of SMEs.

Delmas (2001) has shown that involving external stakeholders in the design of environmental management systems becomes a valuable organisational capability which is difficult for competitors to imitate. However, overall, most SMEs do not have the resources or specialised knowledge to enable them to develop environmental management systems. In many cases SMEs have less interaction with as wide a range of stakeholders as larger businesses. As has been stated SMEs often have less interaction with regulators, many will form part of a lager business' supply chain and will therefore not sell directly to a consumer, thus having less interaction with this

stakeholder in these cases. Many SMEs are seen to consider environmental aspects as a delicate and confidential matter. They worry that any information regarding potential or actual environmental damage could have negative effects if it is released to their various stakeholders. This is one reason why SMEs are reluctant to publish information through their environmental statement (a requirement of ISO 14001) (Biondi et al., 2000).

ISO 14001 was designed to provide correct implementation of an EMS to a wide range of businesses, some of which would be large, complex organisations. This has made ISO 14001 a very detailed and complex guide to businesses. Certain areas may be seen to be too complicated for SMEs who generally have less expertise in environmental issues than many larger businesses. This is because ISO 14001 was also designed for a wide range of businesses in various industries and could not possibly be made to suit all businesses. This leaves many areas quite general and requires further clarification. This means that SMEs' in comparison to larger firms lack of resources and expertise makes ISO 14001 implementation difficult (Biondi et al., 2000).

1.2.5.6 Reasons SMEs implement ISO 14001

From the discussion of SMEs and environmental management, it may appear at first that there is little reason why SMEs would wish to or have the resources to attain ISO 14001. However, in spite of the various issues, a growing number of SMEs have managed to obtain ISO 14001.

Previous research suggests that businesses may use environmental beyond-compliance to increase their market share and profits by differentiating their products and may use ISO 14001 to demonstrate their green credentials (Chapple et al., 2001). They may also do this to reduce the threat of mandatory regulations (Segerson & Miceli, 1998). Chapple et al., (2001) aimed in their study to identify the characteristics of UK businesses attaining ISO 14001. They found that ISO firms on average are larger firms with higher export and a higher number of employees then non-ISO firms. Their study supported work by Porter and van der Linde (1995) and Denton (1995) which showed that international competition acts as a catalyst to obtain voluntary beyond-compliance standards such as ISO 14001. This may also be due to international supply chain pressures. Interestingly their research also highlighted that while larger firms were more likely to

have ISO 14001, very small firms were also often holders of ISO 14001. It seems that middle-sized firms are least likely to obtain this accreditation (Chapple et al., 2001).

Biondi et al. (2000) found in their research that perceived benefits of SMEs obtaining EMS were organisational and managerial efficiency, continuous monitoring of compliance and improvement of the enterprises image. There is evidence that ISO 14001 has taught some SMEs how to improve their overall management approach: being able to plan improvement strategies, implement the necessary actions and verify them by means of a thorough assessment has been a positive result for many SMEs. There were also cases of SMEs in their research that were able to make economic benefits from obtaining ISO 14001, however the research shows that these are the exception and are only offered as examples of best practice. These economic benefits were only possible due to optimising resource use (such as reducing waste). The research found no cases where there were economic benefits due to improved competitive positions after EMSs were implemented.

Holt et al., (2001) found in their research ways in which EMS implementation could be made easier for SMEs, these were: technical support for SME personnel; training initiatives for SME internal personnel; financial support and/ or economic incentives for SMEs; simplified ISO 14001 requirements and/or guidelines targeted at SMEs; the possibility of a whole area (e.g. an industrial district) and not just a single enterprise, obtaining environmental certification.

Business-environmental initiatives for small firms have consequently tended to focus on the provision of information and advice (Rutherford et al., 2000). Voluntary schemes are sold to SMEs by highlighting the business case for reducing environmental impacts and emphasising the financial gains that can be made. However in a study of UK SMEs in the construction and restaurant industries Revell & Blackburn (2007) found that many owner-managers were not convinced of the business case for taking actions to reduce their environmental impacts and that these managers were more concerned with the day to day pressures of running their businesses. Therefore, Revell & Blackburn conclude that the policy of promoting voluntary initiatives to SMEs (at least for those in the construction and restaurant industries) is unlikely to be effective. However, it should be noted (as Revell and Blackburn do) that this may not be the case in other

industries, therefore one of the aims of this research will be to investigate managers' from SMEs in different industries perceptions and reactions to legislation and voluntary initiatives.

A key aspect of any environmental management system is the management and more specifically the leadership, especially when this leadership drives the environmental change.

1.2.5.7 SMEs and environmental leadership

Environmental leaders in the corporate arena face a challenging set of demands that differ from those faced by their corporate peers in other, more defined and established departments, such as finance, sales and marketing. First, they must achieve regulatory compliance. Second, they must go beyond compliance to recognise business opportunities whilst taking on prudent business risks. Third, they must work skilfully with a wide range of external stakeholders, not all of them friendly. Environmental leaders, then, require an extraordinary range of knowledge, diplomatic and political talent, dispute-resolution abilities, basic business skills and a humanism in their decision-making that reaches beyond this quarter's balance sheet (Piasecki, et al., 1999). This challenge is especially significant for any "green champions" in SMEs where the day to day survival is more important than long term strategic goals and it is common for SMEs to have a manager who deals with environmental concerns as part of a wider remit (e.g. production or quality).

However, the dominant management paradigm is orientated towards achieving the goals established for the business company. Managers have their own goals, but the main reason for their employment is to achieve the goals of company stakeholders (Schaltegger, Burritt & Peterson, 2003). Therefore they must exercise power and influence sceptics, board members and shareholders in developing a set of values and principles and in attempting to get the business to adopt a management system such as ISO 14001.

Fuller & Tian (2006) suggest that the environmental activities of a business may be determined by the values and ethical perspective of the management of the business. Graafland et al. (2003) found that SMEs rely heavily on their management having an active dialogue with its

stakeholders where they are able to identify what ethical issues are of importance to them, Fuller and Tian state that this is consistent with "social constructionist theory of modern society" (2006:288). They go on to discuss the idea that social control is an important and powerful form of governance of smaller businesses yet social capital (mutual obligation, reciprocity and trust) provide SMEs with power and can act as a tool to understand SMEs and their ethical behaviour. Fuller and Tian (2006) studied profiles written by 144 owner-managed businesses employing less than 30 employees for a UK small business award. Through analysing the managers' description of their activities they established that for the managers of the SMEs the nature of their day to day business was very personal with a great deal of direct contact with their customers. They therefore concluded that the reputation of the business to its stakeholders forms a large part of shaping their environmental activities. This may be the case, however a criticism of the research methodology is that by the sample being from SMEs who have entered a business award it is likely that these businesses take active steps to promote their image to benefit their reputation with consumers and stakeholders, therefore their findings are not that surprising. What would be of interest would be to compare these SMEs with others who have not undertaken activities to raise their public profile.

In discussing the role and effectiveness of leadership in determining why some SMEs are willing and able to obtain ISO 14001, whilst others are not, this study will look at Prakash's research undertaken in 2000 where he researched two case studies (both large US firms). The theoretical question he was attempting to answer was "why do firms selectively adopt beyond-compliance environmental policies?" Selective adoption meaning that a firm adopts only some but not all policies with similar characteristics, or different firms within the same industry respond differently to a given policy.

One of the key findings from the research was the role of leaders and power within the organisation. Prakash defines power as the ability of manager A to influence outcomes in the wake of manager B. Etzioni (1988) identifies three types of power – coercive, material and symbolic. Coercive power is based in control over instruments of coercion (e.g. physical intimidation over workers), materially powerful managers control instruments of material power (e.g. control of compensation and promotions), symbolic power suggests that managers control normative symbols that bestow prestige (e.g. manager could control allocation of

responsibilities). Prakash views material and symbolic power as relevant to his research. If businesses are to serve the interests of dominant actors then the policies of businesses should reflect the domination of these interests. Adopting environmental policies which may not generate profits through a power-based route is predicted to generate conflict. Policy sceptics will accept such policies not because they buy into their logic; rather, they accept that these views are from hierarchical superiors (policy supporters) and therefore as subordinates they will conform. Hierarchical superiors may force the adoption of non-profit making policies but such interventions do not necessarily lead policy sceptics to change their views of these policies. Within the context of this research, power may be used to force beyond-compliance policies into practice, however, an SME is likely to have a less structured management system and have a much flatter hierarchy, therefore there may be less opportunities for managers in SMEs to have the power to force beyond-compliance policy adoption unless they are one of the very few at the top of the hierarchy.

Similar to power-based theories, leadership-based theories also suggest that certain managers play key roles in creating or modifying institutions (Barnard, 1938; Follett, 1940; Boulding, 1963 and Miller, 1992). However, unlike power-based processes, leaders are consensus inducers. They have political savvy and yet, more ennobling and ethical goals (Lipman-Blumen, 1996). Policy consensus may not occur spontaneously, it may require the intervention of a leader. Leaders have the ability to build a shared vision and to foster systematic and long-term patterns of thinking through dialogue (Selznick, P. 1957; Senge, 1994 & Weick, 1995) Managers may need to motivate the employees to surmount their narrow, short-term self-interest. Lipmun-Blumen (1996) identifies three styles of leadership; direct (managers tightly define their goals and achieve leadership by outstanding performance), relational (managers lead by collaborating, contributing and empowering people to achieve respective individual goals) and instrumental (managers employ personal relationships and organisational politics to achieve their goals, while allowing others to shape the pathways to those ends). Prakash sees instrumental leadership style as being important in terms of the adoption of environmental policies (beyond-compliance). With regards to SMEs it is possible that with a smaller workforce, and usually a less structured management hierarchy that a leader would have a better ability at creating consensus through their personal relationships with the staff. This research will identify any cases where an individual's influence

has been the key to ISO 14001 has been implemented and will investigate how this individual achieved this, whether it was through power or their leadership style.

Friedman and Miles (2001) see the existence of a "green champion" in the business as the key motivator in many best practice examples of corporate environmentalism in SMEs. Similarly, Walley & Stubbs' (2000) study of SMEs research highlighted the importance of an environmental champion. Their research found various tactics being employed by an obvious environmental champion, evidence such as networking, sense of audience, agenda transition and greenjacking that all proved central to SMEs who improved their environmental performance. They highlighted that further research was required to highlight how these environmental champions might be operating, initiating and sustaining green initiatives, in varied organisational settings. This research will be looking at the role of leadership and green champions and will be attempting to address how they are operating (if they are in fact present).

As part of the broader investigation into the factors leading to some SMEs obtaining ISO 14001 this research aims to identify within a number of SMEs where the initial interest in improving environmental performance came from and who the many actors in this process were, it is anticipated from the literature that some businesses are likely to have an environmental champion. If such individuals are uncovered then the way they promote and spread their values and therefore promote the improvement of their environmental performance will be investigated.

1.2.5.8 Supply chain pressure on SMEs

Darnall et al. (2008) highlight some of the issues in the existing literature around EMSs, and found as has been discussed previously that EMSs mainly focus on creating and documenting environmental policies. Whilst they may promote change they do not actually require businesses to improve their environmental performance. Where there is evidence that an EMS has brought about improvements in an organisation's environmental performance, some have found that this improvement is likely to only occur in the business operations and not extend to their supply chain (Handfield *et al.*, 2004). A supply chain consist of all parties who are involved in fulfilling a customer request, including the suppliers, transporters, warehouses, retailers and customers themselves (Cox, 1999).

Over the past decade there has been a growing body of evidence that some large businesses are taking steps to improve the environmental performance of their supply chains, an example of this was found by Beske, et al., (2008) who undertook a survey of 111 suppliers of Volkswagen AG in Wolfsburg, Germany and found that 78% were certified according to ISO 14001 and of these 51% expected their suppliers to be certified according to ISO 14001.

This section will discuss supply chains and the ways in which some SMEs are facing pressure from their customers to implement ISO 14001.

Handfield & Nichols (1999:2) define supply chain management as

"The supply chain encompasses all activities associated with the flow and transformation of goods from raw materials stage (extraction) through to the end user, as well as the associated information flows. Material and information flow both up and down the supply chain. Supply chain management (SCM) is the integration of these activities through improved supply chain relationships, to achieve a sustainable competitive advantage."

Supply chain management usually takes into consideration issues of minimising end cost, efficient logistical aspects and timely delivery of goods (Cox, 1999). Vachon & Klassen (2008) feel that environmental management in the supply chain has been an under researched area meaning that there is no widely accepted framework to characterise and categorise environmental activities in the supply chain. Businesses improving the environmental performance of their supply chains typically undertake activities such as green purchasing, product stewardship and reverse logistics (Vachon & Klassen, 2008) assessing the environmental performance of their suppliers, requiring suppliers to undertake measures that ensure environmental quality of their products, and evaluating the cost of waste in their operating systems (Handfield *et al.*, 2002). A formal definition of Environmental Supply Chain Management (ESCM) is "introducing and integrating environmental issues and concerns into supply chain management processes by auditing and assessing suppliers on environmental performance metrics" (Handfield et al., 2005:7) The emphasis so far in ESCM has tended to mainly be on larger businesses being responsible for improvements in environmental performance with a hope that they will apply

pressure to their supply chains and pressurising smaller businesses to adopt environmental initiatives and management systems (Wycherley, 1999).

When a business makes supply chain decisions it implicitly accepts the generated waste stream. Some businesses are unsure about the legal liability they face for their supply chain and would rather be ignorant about problems with their suppliers. These types of businesses create barriers to environmental supply chain management and overlook the benefits of cooperation, strong relationships, support and the importance of good environmental documentation. ISO 14001 recognises this and places a high priority on documentation of processes and supply chains (Cascio, 1996)

Hill (1997) argues that whilst there is potential for businesses to exert pressure on their suppliers to improve their environmental performance, this has rarely been seen. This could arguably be because of poor information sharing within the supply chain, Young (2000:65) states that "only when organisations in the supply chain exchange information backward through their channels will supply chains discover more efficient, environmentally sound and profitable disposition solutions". However, Hill's observations are over a decade old and it will be of interest to this research whether this is still the case.

Hall (2000) argues that larger firms who do invest in environmental supply-chain innovation do so as a means of reducing their exposure to risks associated with their suppliers' poor environmental performance. A growing number of studies have shown that more and more business managers are looking for ways to improve their supply chains and are using their supply chains to gain competitive success. As companies focus more on their core business activities they will rely more on their suppliers for non-core activities. With a growing importance being placed on supply chains, environmental risks can also be seen to pass along them (Handfield et al., 2005). Handfield et al. (2005) found that a supplier's environmental performance can be an order winner, while cost and quality are typically order qualifiers, what they mean by this is that environmental performance can win business for a company when they are similar to others in terms of quality and cost.

Hall (2000) argues that smaller firms are relatively unaffected by environmental pressures and therefore do not regard environmental concerns as important. Although many smaller suppliers are not under pressure from other environmental stakeholders they may be under considerable pressure from their customers, the larger firms they supply products to. The dominance of a powerful customer firm can have important implications for environmental supply-chain innovation. However, suppliers are frequently not under the same types of levels of pressure as their larger customers and therefore have fewer incentives to engage in environmental innovation and performance improvements. Large firms are often under pressure (or wish to pre-empt potential pressure) to address their environmental performance such as those attributed to their suppliers (Hall, 2001).

Through a survey, Biondi et al. (2000) found various reasons why SMEs obtained EMSs such as ISO 14001. These include the need to comply with increasing legal requirements; the desire for competitive advantage and the need to satisfy customer requirements. In their study, the majority of SMEs were suppliers to multinational corporations. These multinationals were starting to ask their suppliers about their environmental credentials and whether they had an EMS in place. It was found that the relationship between proactive large companies and their suppliers (SMEs) represents one of the most powerful forces for SMEs obtaining EMSs. If larger companies are willing to support their smaller suppliers then both should greatly benefit from this cooperation. However, what this research does not examine fully is how important supplier's environmental performance was to larger customers and the level of effect larger customers asking questions about environmental performance had on the suppliers. This research will look to investigate this.

Research of West Midland based manufacturing SMEs by Williamson et al. (2006) found evidence in their interviews with managers of them responding to supply chain pressures and obtaining ISO 14001, this was found in 11 of the 31 SMEs that took part in the study. The type of responses they got from managers when asked why they had/or were getting ISO 14001 were "being forced into it really. One of our major customers wants every supplier to be accredited" (p. 323) and "commercially we had to get the [ISO 14001] standard to deal with blue chip companies". So clearly there is evidence of supply chain pressures influencing SMEs, however Williamson et al. also found supply chains could prevent an SME reducing their environmental impacts, the example given being a small business being unable to change to a more sustainable

raw material due to the demands of its customer. As this study is reasonably recent and of West Midland SMEs it will be interesting to compare to this research's findings which will also focus on West Midland based SMEs.

Vachon & Klassen (2008) state that there is not enough evidence of the business benefits of making supply chains more environmental responsible. There is however a relatively greater number of studies that have looked at collaboration amongst organisations which has demonstrated business benefits. Collaboration will undoubtedly involve the sharing of knowledge and cooperation which have been seen to be resources that can produce competitive advantages. These advantages can be financial savings, and improved quality and productivity with case study evidence supporting the link between collaboration and improved productivity (Geffen and Rothenberg, 2000), whilst there has been some evidence from surveys of improved product quality (Gavaghan et al., 1998) and financial performance (Carter et al. 2000).

Vachon & Klassen (2008) own study looked at whether environmental collaboration between different businesses in a supply chain can produce positive business benefits. They took a sample of 366 North American manufacturers with at least 90 employees and found that environmental collaboration can have a significant positive impact on both manufacturing and environmental performance. The collaboration was found to occur with primary suppliers and major customers and was typically joint environmental planning activities and cooperation in finding solutions to environmental challenges.

One question that remains unanswered so far is whether an EMS is required to effectively improve the environmental performance of its supply chain. Darnall, et al. (2008) studied the effect an EMS has on a business also taking action to improve the environmental performance of its supply chain. They analysed data from a 12-page survey developed by the Organisation for Economic Co-Operation and Development (OECD) which in 2003 was mailed to environmental managers of 3746 US manufacturing facilities with 50 or more employees and that reported data to the Environmental Protection Agency's Toxic Release Inventory. 489 facility managers completed the survey with almost half of the sample being either small- or medium-sized enterprises. They found that businesses that were in the process of adopting an EMS implemented GSCM practices 13–22 percent more frequently than businesses that had not

considered EMS adoption, although they also found that these businesses were no more likely to track the cost of waste in their supply chain. They found that this trend was even stronger results when businesses had already fully implemented an EMS with them implemented GSCM practices between 7 and 29 percent more frequently than businesses that had not implemented an EMS. Darnall et al.'s (2008) findings showed that 58 percent of ISO 14001 adopters assessed their suppliers' environmental actions and 57 percent required suppliers to undertake specific environmental activities as compared to 40 percent and 36 percent of non-certified facilities, respectively. They also found that businesses with more mature EMSs did not adopt GSCM activities any more than businesses with less mature EMSs.

The integration of supply chain pressures and environmental pressures is a potentially useful means to address and reduce environmental impacts. This is an especially useful mechanism for smaller, lower profile firms that often lack reasons to invest resources in environmental performance improvements. In this way smaller firms may be being driven by the same institutional mechanisms as larger firms.

There are differing views in the literature on the degree of influence larger businesses are having on their suppliers' environmental activities with Revell and Blackburn as recently as 2007 asserting that "neither supply chain pressure nor consumer demand are driving environmental reform to any great degree amongst SMEs" (2007: 407). Therefore it is important that this research looks into the role of the supply chain in SMEs decisions to adopt ISO 14001.

1.2.5.9 SMEs and business support organisations

There is growing evidence that there is a need for SMEs to focus on their environmental performance and attempt to make improvements. One way this is being done is with business-support networks. In the past these networks have been described as being good at highlighting the need for change amongst SMEs but have failed to address how this can be done (Hooper, et al., 1998).

Shearlock et al.'s in 2001 studied the role of business-support organisations in the Northwest and found that there was little direct environmental assistance offered by these organisations (such as business link centres and chambers of commerce). One reason suggested is that there is a general ignorance of the environmental impact of SMEs amongst members of the business support network.

Larger firms have the capital to employ external consultants or may even have in-house expertise in environmental matters. In contrast, most SMEs have multi-tasking managers who often lack environmental expertise. Much support comes in the form of literature and guidebooks on improving environmental performance. Unfortunately many of these are generic and fail to address specific issues the business may have. Investing hours digesting a highly technical guide to answer a very simple question is often seen as not being an efficient use of an SME manager's already overstretched resources. From previous research there seems to be a growing tension between the pressure for SMEs to improve their environmental performance (from legislation, supply chain pressures, stakeholder demands) and the manager's resistance or inability to change because of resource, knowledge and information constraints (Holt et al., 2001).

Palmer (1997) noted that SMEs are unlikely to reach for help unless there is external stimulus. Also SMEs are unlikely to approach external support if legislative compliance is investigated due to the fear of non-compliance being uncovered. Although there are a large number of environmental business-support services, little empirical research exists to prove whether these initiatives are assisting the vast majority of SMEs to become more environmentally responsible. The Small Company and Environmental and Energy Management Assistance Scheme (SCEEMAS) which was initiated in 1995 was discontinued due to a poor take up of its services just a few years later. Smith and Kemp (1998) found that nearly a third of SMEs in their study felt trade associations could persuade them to change their environmental practices. However, membership levels for SMEs in trade associations has been low. Environmental support organisations stated in research by Hitchens et al., (2003) that their services (even free services) had a poor take up rate by smaller businesses. They highlighted the need for external expertise, especially where the technicalities of the environmental initiative are outside the scope of the business of the SME (Hitchens et al., 2003) The lack of some environmental business-support services mirrors that of the more general business-support services for SMEs.

Holt et al.'s (2001) research found that the quality of information being received by many SMEs form environmental business-support services differed greatly between different support organisations and by region. SMEs were also found to be less likely to contact groups who had connections to regulatory bodies due to a fear of possible prosecution. Organisations such as Business Link were criticised by many SME managers as using environmental initiatives as just another revenue generating exercise for paid consultants.

Holt et al (2001) argue that it is irrefutable that SMEs are not, on the whole, substantially improving their environmental performance. Nor are they seeking out assistance to make improvements due to a lack of willingness, ability or confidence, therefore it is these support bodies which must approach SMEs in an appropriate manner. It is important that the environment should not become another burden that SMEs have to face leaving them in a disadvantaged position in comparison to larger firms.

The SMEs in the study by Merritt (1998) generally agreed that they required external assistance to meet their environmental responsibilities, but this assistance should be locally accessible and include best-practice case studies relevant to the size and sector of the company. More work needs to be done to demonstrate to SMEs the cost savings they can make, including the avoidance of potential costs represented by environmental liabilities (Smith et al., 2000).

This research will look at the role of support offered to SMEs as the literature suggest that it may have a crucial part in the successful implementation of ISO 14001, however many of the key pieces of research in this area are from some time ago. As well as talking to managers from SMEs various environmental support organisations will be interviewed so that a comparison between what support is available and what is needed specifically by SMEs can be discussed.

1.2.5.10 Benefits for SMEs to adopt ISO 14001

SMEs and larger firms obtaining ISO 14001 and hopefully improving their environmental performance are part of a long, ongoing process. In order for this process to begin ideally there

should be a motivation for this to occur and ideally perceived business benefits to persuade or force SMEs to change their attitudes and activities in relation to the environment.

A proactive approach, which incorporates environmental issues into strategic decision-making, may require expertise and financial resources beyond the existing capabilities of most SMEs. Businesses have always been faced with a wide range of competitive market conditions, which threaten their survival. In many cases, being required to improve environmental performance may be perceived to add to this threat. However, Greenan et al in 1997 felt that there were growing demands on business to improve their environmental practices and these will continue to grow. Therefore, not only is it ethical for a company to improve its environmental performance, but it may also be sound business practice (Greenan et al., 1997).

The DETR (1998) outlined a number of new opportunities including the ability to create new markets, develop new products, increase business competitiveness and build customer trust through the provision of "green" goods.

Businesses may wish to go beyond-compliance and adopt ISO 14001 for the following reasons: to pre-empt and/or shape environmental regulations if they themselves adopt such policies (Fri, 1992; Khanna & Damon, 1999), reap first-mover advantages (Nehrt, 1998; Porter & van der Linde, 1995). Similarly, technologically advanced firms could raise the cost of entry for their rivals, the assumption being that higher standards will lead to more stringent regulations (Barrett, 1991). However, the above alleged benefits all relate to business in general and on the whole the assumption is that these are larger businesses. The literature on SMEs suggests that these benefits may not be as applicable to SMEs with less long term strategies then larger businesses that typically have more formal management structures. This research will investigate if there were perceived benefits to adopting ISO 14001 with the SMEs in this research's sample and whether these perceived benefits have become a reality.

Further evidence of the benefits to SMEs of improving their environmental management is shown by research involving over 500 SMEs from across Europe in a EU pilot project to implement EMAS. These SMEs worked with consultants and many found tackling their environmental issues in a systematic and structured way brought about positive benefits and integrated well with

existing management systems (Hilary, 2000a). However, with the literature suggesting many SMEs have limited financial resources it may not be possible for many SME managers to justify employee a consultant, this research aims to identify different paths SMEs took to obtain ISO 14001 and the associated benefits for these companies.

Hillary (1999) in her review of 33 previous studies found several benefits for SMEs who adopted EMSs and become more environmentally responsible, she found that efficiency, financial savings, communication channels, skills, knowledge and attitude all improved in SMEs adopting EMSs, key benefits were the attraction of new business and customers. She also found that SMEs benefited from assured legal compliance and the company's image and relationships with stakeholders improved.

Hitchens et al. (2003) study which consisted of surveys and interviews showed that despite competitive advantages, which may take the form of increased profit, growth, associated R&D, skills and modernity, there was no convincing evidence to suggest that any of these were important when a company considered improving their environmental performance. Strong environmental performance is not constrained by the initial competitive status of the business. Also, their research suggests that a business' current environmental performance has little bearing of their ability to adopt environmental initiatives. The most significant finding was that improved environmental performance is not associated with a worsening economic performance, in fact there was found to be a positive financial benefits as businesses improved their environmental performance.

Another benefit of an SME being more environmentally responsible may be the possibility of it bringing about innovations. Innovation can be seen as either "product" or "process" innovations the difference being defined as "product innovation refers to the development and introduction of new or improved products and/or services that are successful in the market whereas process innovation involves the adoption of new or improved methods of manufacture, distribution or delivery of service" (Neely et al. 2001:114). Innovation can be seen as a three-stage process that consists of the original idea, the development phase and the exploitation of the developed idea (Meredith, 2000). The arrival of environmental concerns into a business may add another dimension to the need to innovate. Meredith argues that SMEs have to be aware that

environmental legislation can be instrumental both in opening up new pathways of innovation and in closing others down. An SME taking minimal action, for example, fixing end of pipe temporary technology as opposed to adopting more radical innovation of integrated processes or redesigned products may delay the inevitable and may prove more costly in the long run.

Patton & Worthington (2003) state that properly designed environmental standards can trigger innovative responses and these can give rise to "innovative offsets" which can lower the total costs of production or improve product value. However, their research which used a quantitative survey and case studies of the UK screen printing SMEs found that the strategic nature of environmental activities was far from obvious with few SMEs, being able to give examples of new products developed, new markets exploited or new custom created because of the introduction of environmental improvements. One limitation of this study is that is concentrated on one very specific sector and method of manufacturing, it may be that "innovative offsets" are more likely to occur in other sectors with other manufacturing processes.

Overall past research has shown some SMEs to benefit from attaining an environmental management system, however it has not been the case for all and there appears to be a difference between perceived and actual benefits. One of the key aims of this research is to identify what motivates SMEs to attain ISO 14001 which includes looking at whether motivations are due to the perception of business benefits and seeing whether these benefits have become a reality.

1.2.5.11 Factors preventing SMEs from implementing ISO 14001

Overall, the literature review has outlined the different factors that can affect SMEs and influence their decision and ability to implement an environmental management system as well as looking at the potential benefits of doing so. The literature review will now give an overview of the factors that may prevent or make it difficult for SMEs to implement ISO 14001.

It has been stated that many SMEs are unaware of environmental regulations that affect them and fail to comply with them. Unlike a growing number of larger businesses, for SMEs anything more than compliance can be unrealistic due to their lack of resources and ability to react rapidly

and flexibly to pressures (Eden, 1996). Greenfield & Roberts, (2000) claim that the main reasons why SMEs do not incorporate environmental considerations into their business activities are that there is a lack of training and awareness, a lack of legislative support, there is little sector/industry specific support and solutions, there are expenses involved and environmental management standards are ill-suited for SMEs.

Hillary (1999) sees the barriers to EMS adoption as being that SMEs find that more resources than are expected are required (e.g. cost, time and skills), SMEs felt that the costs for consultants were high whilst the quality was poor. SMEs also viewed the identification of non-compliance with scepticism, especially if action could not be taken easily to rectify it. SMEs also felt dissatisfaction with past environmental initiatives where benefits had not materialised as expected.

One factor that may prevent or make it less likely SMEs will implement an environmental management system could be down to the role and influence of stakeholders. Stakeholder theory views firms as designing policies by taking into account the preferences of multiple stakeholders (Prakash, 2000). Freeman (1984: p.46) defines stakeholders as "any group or individual who can affect or is affected by the achievement of the organisation's objectives" The term "stakeholder salience" describes how the level of stakeholder influence depends on the interplay of three potential stakeholder characteristics: power, legitimacy and urgency (Mitchell et al., 1997). As has been stated for smaller businesses there may be less pressure from stakeholders as they may be less likely to face environmental regulators, are less likely to face pressure from NGOs unlike larger businesses are. One exception to this may be larger businesses who the SMEs are suppliers to which will be investigated in detail in this research.

A number of studies have found that the main reason SMEs are less likely to go beyond-compliance in terms of environmental responsibility is that they are not subject to such an extent of external stimuli that prompt them to take environmental initiatives compared with larger businesses (van Hegel, 1998). In a study of 77 SMEs that were helped to apply ecodesign principles to their products, the question was raised as to why certain SMEs turned out to be successful whereas others lagged behind. It was found that the proactive SMEs were most motivated by internal stimuli (opportunities for innovation, a drive to increase product quality

and the desire to seek new market opportunities) rather than by external stimuli (customer demands, governmental regulation and industrial sector initiatives) (van Hemel, 2001). The answer to why this may be could be that's SMEs are not sufficiently subject to convincing external stimuli: the existing regulation focuses on larger industries, as do consumer organisations and environmental agencies (Dogson, & Rothwell, 1994).

A lack of employee willingness to change can also be a strong barrier to improving environmental performance. Petts et. al., (1998b) found evidence of opposition to change from the shop-floor and middle management. Reasons for this opposition were the difficulty in recognising the environmental benefits of change, perceived increase in work and the problem people had in relating the environment as an issue to their specific work task and responsibilities. Some managers found ownership of the issue difficult as, unless personally motivated, they could not see that additional time and work was required.

Empirical research by Revell & Rutherford (2002) found a disengagement with environmental issues amongst owner-managers, this has been attributed to: feelings of limited responsibility towards the environment due to their perception of their business only having a small negative impact on the environment and their belief it is the responsibility of the government; little literature about environment best practice and a lack of expertise in this area, resulting in reactive rather than proactive responses to environmental problems; little ethical business management with economic performance being seen as more important than environmental performance; regulation is resisted due to its perceived high costs and poor understanding of legislation; managers resistance to voluntary initiatives due to fears of it not being a level playing field; poor uptake of environmental management systems due to lack of awareness, resources and external pressure and a poor perception of the possible benefits. It has to be noted that this research took place almost a decade ago and with issue such as climate change being more prominent in the media and on the political and regulatory agenda many of these owner-managers may now not be so disengaged in the issue. With the growing awareness and media attention it will be of interest to this research to identify if these barriers listed are still present amongst current SME managers.

As has been discussed previously, many SMEs are not seen to identify or appreciate any potential business benefits of implementing and Environmental Management System and/or reducing their

negative impacts on the environment. The majority of SMEs in a study by Gerrans and Hutchinson (2000) did not view the environment or environmental programmes as a potential source of competitive advantage, a marketing issue, of importance to their customers or as a factor when they are purchasing from their suppliers. Once again, this research was undertaken some time ago and it will be of interest to this research to see if this is still the case. Finally, in research with SMEs it was found that 36% could list no benefits from pursuing positive environmental actions (Hillary, 2000a).

1.2.5.12 Summary

The literature review has identified how the environment has increased in importance for the majority of large businesses; however, it would appear that this has not occurred to the same extent with SMEs. For SMEs it has been identified that there is often little perceived benefit, little motivation and are a range of perceived barriers that stop them from attaining ISO 14001. However, an increasing (although still small) number of SMEs are now doing this, the question for this research is why.

As was stated at the start of the introduction the main objective for this research is to outline the possible reasons why some SMEs decide to obtain ISO 14001 whilst the majority do not. It will do this by identifying common characteristics amongst SMEs with ISO 14001 and look at the various motivations for this action. It will compare this to SMEs who have not yet obtained ISO 14001 and identify common factors as to why one group is has attained the EMS whilst the others have not.

From the literature review a wide range of factors has been identified that may influence whether or not an SME pursues and succeeds in attaining ISO 14001, these factors are shown in the model below:

Figure 8: Influencing Factors for SMEs to Attain ISO 14001Based on Existing Literature

The above model shows two groups of factors that based on the literature review may in some way influence a SME going through the process of attaining ISO 14001. The first group of factors are "drivers" which may motivate an SME to attain ISO 14001, these are: competitive advantage; regulatory compliance, supply chain pressures and leadership. Apart from supply chain pressures there are no clear strong motivations in the literature why SMEs would do this (the majority of research looks at the barriers), therefore the other three factors have been chosen as the most commonly attributed factors for all businesses (regardless of size). This research will identify whether these factors are relevant for SMEs. With many of the past pieces of research being fairly dated (research in the area of environmental management amongst SMEs is still far less common compared to research into larger firms) it will be interesting to see whether any of the motivations in the model that predominantly apply to larger businesses may now also be present in smaller businesses, especially with environmental issues being higher up the public, political and regulatory agendas.

The second group of factors has been categorised are enablers. These four factors from the literature review all mean that the SMEs are able to overcome potential barriers (that have been discussed in the literature review) and mean they have the necessary resources to implement the EMS. These are: leadership, financial resources; internal expertise and manpower and external support. There is evidence that the presence of these factors (or at least one of them) in a SME

may make it more likely it will be able to attain ISO 14001. As well as being a possible driver a leader or "green champion" may be required to enable the business to attain the EMS. A leader may not necessarily be the one within the business that instigates implementing an EMS but from the literature and especially in an SME it would appear to be necessary for the business' leadership to support this. Equally, from the literature review it would seem that for SMEs - having the financial resources, expertise and manpower available are necessarily to successfully achieve ISO 14001. Without one or more of these (or even with these) it may also be necessarily for SMEs to have external support available. Without these enabling factors even if drivers are present and the SME's management are motivated to attain ISO 14001, an SME may not be able to attain the accreditation. The enabling factors are not discussed a great deal in the literature discussing larger businesses perhaps due to the fact that it is assumed larger businesses have the expertise and resources available to them or if are able to access them. These factors are therefore far more crucial to SMEs where, as has been stated, there is often less long term strategic planning and more focus on the day to day results of the business.

This research will investigate SMEs with and without ISO 14001 in order to investigate whether there is evidence of drivers and/or enablers pressuring and assisting SMEs to attain an accredited EMS. If they are present, then the findings will outline which are most important for SMEs and how these factors interact to drive and enable the process of gaining ISO 14001.

2. Methodology

This chapter will outline the research design and methodology used. It will outline how the design has changed due to various issues and outline the process that was undertaken to engage with businesses then collect and analyse data.

2.1 Research Design

According to De Vans:

"The function of a research design is to ensure that the evidence obtained enables us to answer the initial question as unambiguously as possible" (2001:9).

With this in mind this study will now outline how the methodology will go about answering the research question. As outlined in the literature review the main aim and research question for this study is what factors drive and/or enable small to medium-sized enterprises to achieve ISO 1401. Supplementary research questions being what challenges do small to medium-sized enterprises face when trying to implement the environmental management system and what benefits (if any) are there to having ISO 14001. As the literature review produced a list of factors from the research into this area these factors will be used to form the basis for the research methodology.

Despite the statistics from the Department for Business, Enterprise and Regulatory Reform (BERR, 2007) demonstrating that SMEs are a significant group of businesses in terms of the number of them, how many people they employ and their turnover, research into their environmental activities has remained not as great as the focus placed on larger businesses. With this area still being an emerging field of study, most research has been quantitative in nature and focused on describing SMEs environmental activities and looking for overall trends and far less studies have focused on uncovering the motivations in detail for SMEs to undertake activities to reduce their environmental activities (Revell & Blackburn, 2007).

Within the area of SMEs and environmental management Moore & Spence (2006) identify a number of gaps in knowledge on this subject. One gap is whether the sustainability tools used by large businesses can be successfully used by SMEs, another is whether taking actions to reduce environmental impacts is financially advantageous for SMEs and another is the importance of network relationships amongst SMEs. This research aims to fill some of these gaps in the knowledge, firstly by identifying whether SMEs are able to successfully use ISO 14001 as a sustainability tool and assess how well suited the accreditation is to their businesses, secondly by identifying if managers of SMEs are aware of financial benefits of the accreditation and finally by investigating the role of supply chain networks and business support networks in motivating and enabling SMEs to gain the accreditation.

The data required for this research to meet its aims will need to be able to be used to test the model developed from the literature review. It will be predominantly the perspectives of the individuals within small to medium-sized enterprises who have responsibility for environmental management. Data will be collected that reflects the experiences and attitudes of these individuals of environmental management and specifically ISO 14001. The data will therefore be qualitative in nature, filling some of the gap of why and how some SMEs have attained ISO 14001 whilst the majority have not.

Specifically with regard to the aims of this project and in order to test the model there will be two main types of data that are required, motivators and enablers.

The data required from the SMEs with ISO 14001 was:

- motivations that led SME to attain ISO 14001: this data was collected through asking the manager to give a narrative on their experiences with the business. This will be reliant on the manager being present within the business before they had ISO 14001 and it is reliant on them being able to recollect accurately the incidents that led to this. Data collected is likely to be more reliable when there have been specific incidents that have led to the business getting ISO 14001. In the analysis of the narratives it will be identified where managers have not been clear what motivated them and the business and where there were no such significant incidents. In order to get this narrative managers were simply asked

when they had got ISO 14001 and when they had first discussed this within the business, they were then asked to discuss what led to the decision. Where possible the managers were left to tell their business' "story" of attaining ISO 14001. It was important at this stage not to prompt the interviewee unless necessary in order not to influence or bias their answer in order to fit the model developed.

- barriers faced by the SME: the narrative given by the managers also needs to provide data on any barriers that the SMEs faced. Once again this is reliant on the manager being able to remember and identify and physical (e.g. lack of resources) and perceived (e.g. no idea of any benefits) barriers. Again, managers were asked to give a narrative, this time on the process from first discussing ISO 14001 to successfully implementing it. Within this data there was generally a greater need to assist the manager and give some possible barriers (from those identified in the literature review). This data was required to identify whether barriers faced were similar to those faced by SMEs without ISO 14001 and if so the research could then look at how these SMEs overcame these barriers.

- how SME overcame barriers: In order to make a meaningful comparison between SMEs with and without ISO 14001, the final data required form these interviewees was regarding how they overcome barriers they faced. The reason for this data being needed is that it may be that there were factors present and attributes of these SME that have enabled them to attain ISO 14001 which others without it do not possess. The managers were asked in relation to the various difficulties they were faced what occurred in the business internally and externally and what, if any support was available.

For SMEs without ISO 14001, the issue of recollecting past perceptions and experiences was not such an issue, instead they were asked about their current perceptions and the businesses current situation. The data required:

- absence of motivating factors – managers were asked if they were aware of what ISO 14001 was, and if so they were simply asked why their business had not got this. Managers were then given time to give as much information as possible with little aid or prodding from the interviewer. Where the manager failed to give reasons they were then

asked if any of the factors found in the literature review had occurred in the business (e.g. had there been any pressure from customers?)

- perceived and actual barriers – past literature looking at SMEs and environmental management predominantly looked at the barriers they faced that meant ISO 14001 was not suitable to them or not achievable. For this research the barriers are required in order for a comparison with those with ISO 14001 to be made. This data was collected again by allowing the manager to give a narrative of their experiences of environmental management and they were also asked for their own perception of environmental issues and environmental management. They were asked to give both their perceptions as well the actual barriers (e.g. resource issues). On the whole, again where necessary interviewees were assisted by being given possible barriers but this was only done where necessary and any more direct questioning was made part of the natural conversation between the interview and interviewee rather than a straightforward question and answer.

As well as collecting data from the interviews with the various managers, any documentation and data relating to the SMEs environmental management will also be collected for the analysis. Tours of factories will also be undertaken in order to see any environmental initiatives that have taken place and to gain an appreciation of the scale of potential environmental impacts the companies may have.

In terms of the questions that were and were not asked of the managers in order to get the necessary data, on the whole as has been stated, managers were given the opportunity and encouraged to give a detailed and where possible uninterrupted narrative of how their business came to or did not attain ISO 14001. Interviews were structured in such a way that if required, they were asked specific questions regarding the different enabling and motivating factors as well as perceived and actual benefits and barriers however on the whole the directness of these questions depended on how forthcoming the managers were. On the whole most of the managers were able to give specific and fairly detailed accounts of their business' activities relating to environmental management. In the narrative analysis it was identified where it is uncertain what motivated and/or enabled the SME to implement the environmental management system.

Creswell (1994) states that qualitative research's aim is to understand situations, events, roles, groups or interactions. This study will be investigating in detail a number of SMEs analysing their perceptions and activities with regard to ISO 14001; the role of the manager in charge of its implementation and maintenance and the groups of workers and their interactions in deciding to obtain the accreditation. A qualitative approach will enable this research to reflect on the decision making process that was involved in the SMEs deciding to obtain the accreditation and will reflect on the process of accreditation. Creswell (2003:199) states that qualitative research enables a researcher to focus on the process and not just the end result stating "qualitative research focuses on the process that is occurring as well as the product or outcome".

The reason why qualitative research will address the research questions more effectively then quantitative methods is that it enables the research to embark on a investigative process whereby analysing the words and actions of the environmental managers it can make sense of the social phenomenon of ISO 14001 by describing, classifying then comparing and contrasting the object of study. Unlike quantitative research it aims to achieve a deeper understanding of how SME managers perceive the accreditation and the challenges it brings, Creswell (2003:199) highlights this point by stating "the focus of qualitative research is on participants' perceptions of their lives and experiences and the way they make sense of their lives" (p. 199). As this study is based on the list of factors that came from the literature review; qualitative methods will enable the research to adjust the topics under investigation. If it becomes apparent that there are different factors influencing the business' activities then these can be investigated also, it would be difficult to do this with quantitative research. As the research method is based on investigating the factors established in the literature review this study is employing a deductive approach, in that the there is a set of assumptions and concepts that the research will focus on and that will be used when analysing the data.

The nature of the enquiry that this research will be undertaking is explanatory case studies. According to De Vaus (2001) when undertaking explanatory case studies it is necessary to first analyse each individual case creating a full picture of that cases situation, actions, beliefs etc. and then once this has been done for all cases for a comparison to be made. In explanatory case studies the analysis of each case should be based around a set of theoretical ideas and concepts with each of the cases testing or building theoretical propositions. In this research study this

would mean each case will be analysed against the set of factors identified in the literature review. By doing this it becomes possible to make comparisons, possibly generalisations and they test the theories under investigation.

The data that is collected will be used to as a means of theory building. In the literature review the conceptual model was developed in order to demonstrate the possible motivating and enabling factors leading to a SME getting ISO 14001. The data collected will be used to demonstrate motivations, perceptions and experiences of the environment managers in this study. The data will be analysed to show what factors led one group of SMEs to attain ISO 14001 whilst a second group were not. This data will be use to build upon the past literature and the model developed from it. The model demonstrates what factors influence and affect SMEs behaviour but it does not show the relationship between the factors or demonstrate the process SMEs goes through to attain ISO 14001. Wacker (1998) states there are various forms of theory building research, the one that most closely fits this study us analytical conceptual research which is described as to "serves as a forum for expressing new conceptual perspectives on theory to better explain and integrate underlying relationships" (p375). The aim of the study is for the data collected to build upon this model to develop it to show the "what", "why" and "how" SMEs attain ISO 14001. These three elements of research are seen as crucial by Meredith (1998) in their discussion of the merits of case study methodologies.

Case studies have been argued to be one of the best methods of undertaking theory-building research, Meredith (1998) argues that theory-building requires not only the "what" and "hows" of a situation, but if a theory is to be developed and built upon then it must also ask "why". Meredith sees a limitation of many rationalist methodologies as not seeking to understand why but instead focusing on the quantity of data, the apparent robustness of their research methodologies and the generalisability of their findings. Meredith states that a range of scholars (including Richardt and Cook, 1979) believe that rationalist methods are most appropriate for testing or verifying existing theory whilst case studies are most suited to generating or extending theories. Therefore, as stated this research as it is seeking to identify the "why" of the situation under study, is using case studies as a method to develop and extend the existing knowledge, theories and the conceptual model developed in the first chapter.

2.2 Research Methods

The main data collected will be from transcribed interviews with key individuals within the SMEs. The main reason for this is due to the limited data available within this companies. Whilst it is appreciated that a strong case study methodology utilises various tools to gather data, such as observation and document analysis, as will be discussed in detail and has been documented in previous research, the experiences in this research were that SME managers were reluctant to take part and talk about issues around environmental management. It is felt that it is unrealistic to spend any considerable time with each company and on the whole the experience of the researcher was that there was little documentation to analyse. Most of the SMEs in the study did not discuss environmental issues on their website and apart from the EMS manual and environmental policy, most of those with ISO 14001 had very little other documentation on environmental issues. It was decided that a survey was not utilised as it would not fully answer the aims of the research which were to gather the personal accounts of key individuals. It was expected that a survey would just reiterate what most other research (which is mainly surveys) has said. In each case as well as conducting the interviews, a site tour was also undertaken and the SMEs EMS manual, policies and any data on environmental performance were reviewed.

The data collection comprised of recorded semi-structured interviews with 12 SMEs, 8 had ISO 14001 and 4 did not. Each of the 12 SMEs were located in the West Midlands and Staffordshire. The initial aim was for all of these businesses to be based in the West Midlands however due to significant issues gaining access to SMEs the sample was extended to include Staffordshire. Staffordshire was chosen as it had become apparent that access to SMEs would be possible through a business support network based in this county. The SMEs were identified from published sources (e.g. trade directories) and from contacts made through business support organizations (Groundwork and Staffordshire Business Support Network) as well as through talking to a large manufacturer about their supply chain.

The interviews were pre-arranged and conducted with either the managing director and/or the director/manager responsible for environmental issues or in some cases production and/or quality. The interview questionnaire was constructed from the literature review, for those SMEs

with ISO 14001 the semi-structured interview was scripted around identifying the reasons they attained the accreditation and identifying challenges in the process as well as benefits from having the accreditation. The interview questionnaire for those SMEs without the accreditation was based more around a discussion of their perceptions and experiences of quality standards with the aim of teasing out any beliefs, challenges and barriers. The interview questionnaire was focused around the different factors identified in the research model in figure 8. Each interviewee was asked about the business and then asked to describe when and how they started the process of achieving ISO 14001. The interviews were then followed by prompts for the interviewee to develop their "story" detailing their experiences and attitudes. Whilst the researcher had the list of potential factors in mind, these were not used directly as prompts, instead if they had not been mentioned yet, then the interviewer would ask a more general question around the factor. On the whole the interviewees led the discussions around their own feelings and experiences. All of the interviews were conducted on-site followed by a tour of the business where for those SMEs with ISO 14001 the manager pointed out the activities that had been undertaken during and since ISO 14001 implementation. The interviews lasted between 45 minutes to 90 minutes depending on how forthcoming the interviewee was and how much time they were able to allocate to the interview (in many cases it was necessary for me to assure them it would not take more than an hour for them to agree to take part).

Interviews were recording on a Dictaphone. Only 1 interviewee requested not to be taped and for this interview notes were taken by the interviewee. After each interview was complete, it was transcribed on a computer, and analysis was done manually (i.e. a computer package was not used). An example of an excerpt from an interview transcription can be found in the appendices. A narrative of each company was produced from the transcribed interview in order for the "story" of each SME to be given. Each full transcript was analysed with any key factors being identified, these predominantly were the motivating and enabling factors. These factors included (but were not exclusively) the factor highlighted in the model developed from the literature review. In the analysis the most common and significant factors were identified, these were discussed in detail using quotations as evidence. These factors were then used to develop a new conceptual model of the factors that motivate and/or enable an SME to attain ISO 14001.

The research design for this study has changed during the course of the study. Originally it was planned for the study to focus in depth at four cases. These cases would differ in terms of whether they had ISO 14000 accreditation and whether they were part of a supply chain as this was seen to be one of the key factors. The characteristics of the four companies can be seen below:

Figure 9: Preliminary Research Design

	Part of Supply Chain	**Not part of Supply Chain**
ISO 14001	COMPANY A	COMPANY C
NON ISO 14001	COMPANY B	COMPANY D

The aim was to study each case in detail undertaking interviews with various members of the management team, observing meetings and analysing any relevant company documents. It soon became evident that this research design was going to be challenging to accomplish as when approaching various small businesses in the West Midlands the manager in charge of the environmental management system was sometimes (although not often) willing to speak to me but due to the businesses limited resources and what I suspect was some suspicion of the research they were not wiling for me to interview several member of the management or workforce or visit the company to observe the activities. It also became apparent that it would be difficult to gather data in the form of company reports, policies and websites from the cases (many of the SMEs did not produce publicly available reports and some did not even have websites). It became evident at this stage that a new approach would be required and therefore a larger number of cases were chosen with the manager responsible for their environmental accreditation being interviewed. As the main focus of the research is identifying the factors that motivate and/or enable SMEs to adopt ISO 14001 the main focus for the sampling would be SMEs with ISO 14001.

Even just requesting a minimum of one interview from each SME still proved difficult, it definitely appeared that small businesses did not want to talk about their environmental activities, even those who had the accreditation. Added to this was the fact that I was seeking out SMEs with ISO 14001 which were very much the minority of cases. As stated in the literature review there are just over 7000 organisations in whole of the UK with ISO 14001, considering the majority of these are larger businesses and this research was only focusing on two counties within

the UK, the number of SMEs in my sampling area with ISO 14001 was fairly low. Added to this challenge was the fact that there were no publicly available lists of SMEs in this area with this accreditation. Therefore in order to gain access to a sample of SMEs I approached an organisation called Groundwork who work with businesses of all sizes and offer free or subsidised support in improving their environmental performance. From this meeting I had a list of a small number of SMEs with the accreditation and my contact at groundwork contacted them first to introduce me and hopefully gain their trust. This led to me getting access to three SMEs all based in the Birmingham (Companies A, B and C). Interviews were conducted with these SMEs. Whilst interviewing the manager from Company B they gave me the details of a contact of theirs at a large multinational automotive manufacturer whom they supply paint to, the manager thought they may be of interest to my report.

As It was already becoming clear from the first few interview that supply chain pressure had some form of role in motivated SMEs to become gain ISO 14001 It was decided to arrange a meeting with the environmental manager of the large automotive manufacturer to discuss the role of the customer on top of the supply chain who is trying to make their suppliers get the accreditation. This meeting was conducted and during it I was given the details of one of the company's suppliers who they said may be of interest to my study. This SME was in Staffordshire which was outside of the research boundary of Birmingham which I had originally decided all of my SMEs would come from, however as this SME was a supplier of the large automotive manufacturer I felt that it would provide the research with interest data as I could compare it to the other supplier, also I was all too aware that it was going to be a challenge to get SMEs to take part in the research so did not feel I could pass this opportunity by. On interviewing the manager from this company I was given the details of another company in Staffordshire whose manager I interviewed. This SME manager gave me the details of an Environmental Network they were a member of called Staffordshire Business Environmental Network (SBEN). I arranged an interview with a manager from SBEN to discuss their perceptions of their role in assisting SMEs with ISO 14001 and reducing their environmental impacts. This discussion also led to me getting the details and access to two more SMEs. The final SMEs that had ISO 14001 and was willing to take part in the study came in response to emails, letters and phone calls I had been making throughout the data collection process to a great deal of companies I had found in

business directories. After a considerable amount of time and effort I had a sample of 8 SMEs with ISO 14001 that would form the focus of this research's analysis.

The sampling technique was mainly an opportunity and snowball sample. Ideally I would have been able to select SMEs from a sampling frame that meet various criteria however this was not possible and the resulting sample of SMEs with ISO 14001 ended up being of different sizes and from different industries. De Vaus (2001) states that when undertaking research using case studies it is necessary for the researcher to select their sample in order for the sample to be of relevance to the research question and in order so that useful comparisons can be made. De Vaus states that the cases do not need to be representative of the population they came from as with case studies it is not possible to generalise the findings to the population. Instead it is necessary to select cases in order to be able to contribute as much to the theoretical discussion as possible. The cases selected with ISO 14001 came from a mix of sectors and sizes and had different experiences of the environmental accreditation, by their stories being told and analysed they are adding to the theoretical discussion, especially with there being so many cases of SMEs with an EMS being highlighted and discussed in the literature.

The details of the 8 SMEs with ISO 14001 are listed below:

Figure 10: Sample of SMEs with ISO 14001

Company	No. employees	Sector	Location
A	32	Metal Presswork	W. Midlands
B	40	Paint Manufacturer	W. Midlands
C	220	Information Services	W. Midlands
D	100	Wire Manufacturer	Staffordshire
E	85	Solvent Manufacturer	Staffordshire
F	100	Print Management	W. Midlands
G	60	Metal Manufacturer	Staffordshire
H	77	Metal Presswork	W. Midlands

Whilst the main focus of the research is on the factors that motivate and/or enable SMEs to obtain ISO 14001 part of the focus of the study is also on the question of what challenges do SMEs have to overcome to be accredited. In order to address this question further I targeted SMEs in Birmingham and Staffordshire that did not have ISO 14001. Although there were obviously a greater number of SMEs without the accreditation in the West Midlands and Staffordshire, the willingness of managers from SMEs without the accreditation to talk about this was even lower than I had experienced before. This is perhaps not particularly surprising as if managers from SMEs with the accreditation are apparently unwilling to discuss environmental issues with me, it is even less likely that a manager from a company without it would do.

Through persistent mailing and calling I managed to gain access to four SMEs, 3 of which were based in the West Midlands and 1 in Staffordshire. There details are below:

Figure 11: Sample of SMEs without ISO 14001

Company	**No. employees**	**Sector**	**Location**
I	35	Sealant Supplier	Staffordshire
J	20	Chemical Consultants	W. Midlands
K	55	Metal Presswork	W. Midlands
L	21	Wire Manufacturer	W. Midlands

Whilst it was a slight concern that there was a smaller number of SMEs without ISO 14001 in the study, early analysis showed that these cases whilst interesting were on the whole supporting the existing literature on the challenges of and barriers to implementing ISO 14001 and therefore it was not felt that four more cases (to even up the two groups) would actually add a significant amount to our understanding of SMEs and ISO 14001.

During the interviews it became clear that an influential factor in this research was external support. Therefore I decided to contact Envirowise who offer support on environmental issues and legislation to various businesses and interviewed a member of their staff about their perceptions of the role assisting SMEs with ISO 14001. This meant that overall I had interviewed 8 SMEs with ISO 14001; 3 SMEs without ISO 14001; 3 Business Support Organisations

(Groundwork, SBEN and Envirowise) and 1 automotive manufacturer who is a major customer of two of the research's cases.

It is important at this point to identify that by accessing SMEs via organisations like Groundwork there may be a certain degree of bias in the findings. Those SMEs selected this way have had an intervention to some degree and been assisted to implement the environmental management system. Whilst the effects of external support are being studied, it may be that by recruiting businesses this way leads this factor to appear more important in the process of achieving ISO 14001 then it actually is for most SMEs.

In order to limit the effect of this bias, where an SME was recruited to the study by a support organisation, the interviewee was careful not to focus on the role of support in their questioning. Therefore, the role and importance of support could more easily and reliably be identified I those SMEs where it was crucial to them attaining ISO 14001.

Also, to ensure a balance in the experiences of the different SMEs, a number of the SMEs without ISO 14001 also had contact with some of the environmental support organisations, therefore for these SMEs support from Groundwork and the other organisations was not in itself enough for them to get ISO 14001.

Of course it may be that external support is a crucial factor and that there will not be many (if any) SMEs in the study who were able to attain ISO 14001 without such support, therefore it may be impossible to remove any such bias. Overall, looking at the interviews conducted and the manager's responses, the majority were very frank in most areas of discussion (e.g. many identified where they had not been complaint with environmental regulations). Many were fairly critical of support that is available and therefore, whilst the research cannot be certain of this, it is felt that the majority of interviewees gave fairly balanced opinions on the support received.

When analysing the interviews I began by transcribing each of the scripts (this was done soon after the interview was conducted). Then I would go through the transcript and apply coding. The different codes were the various factors that had come from the literature review and were

thought to drive and/or enable SMEs to obtain ISO 14001. I also coded any challenges that the businesses faced and then gave these sub-codes for the different types of challenge. Finally I coded anything that was unexpected or could not be coded into one of the categories.

With this coded data I then wrote an account for each SME constructing a narrative of the business activities, situation, and the manager's actions, perceptions and beliefs. I outlined the managers' quotes alongside an interpretation and discussion. Once a narrative had been produced for each case the cases were compared to each other and similarities and differences were discussed. The 8 SMEs with accreditation were compared as one group then the 3 without as another group. Then the two groups were compared to highlight any differences between them.

The data that has been collected and analysed aims to build on the existing research and theories identified in the literature review. The data is going to be used to identify which (if any) of the factors identified in the literature review motivate and/or enable SMEs to achieve ISO 14001. The aim will be to identify if some of the factors are more important than others and if amongst this studies sample of SMEs there are any factors that were not identified in the literature review

Further details of all interviews conducted can be found in the appendix.

3. SME Narratives

This chapter will give an overview of the interviews that took place with the individuals from the various SMEs. The interviews are given as narrative accounts which have been categorised into various sub-headings. The aim of this chapter is to demonstrate the experiences of these SME managers through their own words. For each company their experiences and the perceptions of the managers will be given to highlight the processes the businesses went through in order to attain (or not) ISO 14001. For those SMEs with ISO 14001 the managers accounts aim to highlight why the attained ISO 14001 and how they achieved this. This will then provide the data required to develop the model presented in the literature review to identify the factors that motivate and enable SME s to attain ISO 14001. For those SMEs without ISO 14001 the accounts aim to highlight whether there have been any motivations for them to do this and what barriers have potentially prevented them from doing getting ISO 14001.

Without this chapter it is felt that the research would not benefit from the more detailed unique viewpoints of the managers, especially with these companies being SMEs and therefore one may expect there to be greater individual differences in experiences and attitudes then if it were comparing larger businesses.

Following this chapter an analysis is made which the two groups of SMEs (those with and those without) will be analysed separate as groups to identify common factors and then the two groups will be compared to identify if there are any factors which have led to the two groups differing in terms of attaining ISO 14001.

3.1 Narratives of SMEs with ISO 14001

After each narrative is a summary of the main factors involved in the company attaining ISO 14001. At the end of this section is matrix which gives an overview and comparison of these factors for the 8 companies with ISO 14001.

3.1.1 Company A

Overview of business

Company A has been in existence for 28 years, they manufacture sanitary wear, pipework and fittings. Their main products are made from stainless steel, brass and aluminium. The company employs 32 people of mixed skills. According to their general manager they are "currently experiencing the worst trading conditions this company has ever known". He has only been at the company for 18 months and it has gone from being "exceptionally busy at times to fairly slack at the moment…..and not making much money at all".

Awareness of environmental impacts of business

The general manager showed some appreciation for the business' main impacts on the environment "we use packaging which is not sustainable, we use obviously raw materials and gas and electricity" however on the whole he saw the business as having very little impact on the environment stating "for a manufacturing company we don't shove gases and noxious fumes into the atmosphere……we don't really as I say have any major impacts on the environment".

The general manager's personal feelings towards the role business has in reducing their impact on the environment is shown by him stating "I believe everyone has a responsibility towards the environment…..we have a responsibility as a business as all other businesses to help with that improvement ……I believe that we all have an obligation to our kids and the next generation and the next generation after that. Whether we can change it or not is a different matter but what we can do is commit to doing our little bit both at home at and work to try and make an improvement, to try and make it better, whether we will or not is a different matter".

Decision to achieve ISO 14001

The company achieved ISO 9001 accreditation in 2005 and ISO 14001 in 2006. Before this the company had no quality accreditations. The decision to attain the standards was taken by the Managing Director who decided to "bring in some new blood with some new ideas and some

new methods" by employing a quality manager and a new general manager. It was not the MD's original desire to implement ISO 14001, "the MD had already spoken to Groundwork [an environmental support organisation for businesses], he expressed an interest in putting in an informal environmental management system" and it was the hiring of new staff that appears to have prompted this process to begin. The general manager had implemented a formal environmental system at his previous employer "when I joined the company I carry around with me certain pieces of baggage and one of those pieces of baggage was an EMS system which I discussed with the MD and the two girls from Groundwork and decided then to have a formal EMS rather then something that was informal".

Process of implementing ISO 14001

It is clear from talking to the general manager that even though he had implemented ISO 14001 at another business there were still challenges the business had to overcome in order to implement the accreditation standard. The most significant challenge was their limited resources "a lot of it was committing the time, although to be quite honest, most of the time committed to it was mine". Clearly before the general manager joined the business there was a lack of awareness of ISO 14001, motivation and expertise which had prevented the business from pursuing this, with the general manager claiming "if I hadn't been introduced into the company when I was……..as a business we wouldn't have been looking at ISO 14001 we would have been looking at something small based on informal procedure, it is committing the time".

As well as time, money was another resource that proved a challenge, "most small companies, particularly companies of our size can't afford most of the things" and when the general manager discussed how they had brought spill kits for seven hundred and fifty pounds (a requirement for their business obtaining ISO 14001) he commented that the issue they faced was "do we spend it on a spill kit or improving a piece of kit and 9 times out of 10 its spent on a piece of kit". So clearly there is a conflict between spending money on improving the manufacturing equipment of this business or on improving their impact (or potential impact) on the environment.

The general manager reinforced the problem they have in terms of sparing their resources to introduce and maintain ISO 14001 throughout the interview, it seems for a small business like

this which is clearly facing a financial issues that ISO 14001 and reducing environmental impacts is “a time issue, when you struggling, you're trying to get work out of the door you can’t commit time and money to that type of thing”.

Benefits of ISO 14001

According to the general manager the company has changed quite dramatically over the last 18 months “we set about throwing everything, all the rubbish away and clearing the place up, but most of the stuff we’ve introduced will have no benefit unless we get some business”. The general manager’s perceptions of the benefits of these changes including the implementation of ISO 14001 are mixed.

The specific changes have been to increase the amount of waste that is recycled, now recycling or reusing nearly all the paper and cardboard they use; emergency spill kits have been put in place; they have set targets and objectives for the reduction in energy usage and in production of scrap and woodwork and they have also registered now as a hazardous waste producer.

ISO 14001 does not appear to have been a requirement for their business, in fact the managing director sees it definitely as something far from required, “quality standards are different, in a sense they are a must, they are a given, if someone comes into this company they expect us to have the quality standards, they don’t expect us to have ISO 14001, to that extent it’s a bit of the icing on the cake”. So although seen as a positive thing, they perhaps have not become a norm that this small business has seen as needing to get like the larger businesses perhaps do.

In terms of business benefits the general manager gives a mixed message of stating that the changes that have been made are not an “added value exercise” but then goes on to say that “in a sense its added value as our customers are now saying what are we doing about the environment?, where are our quality standards? and if we want to go out and get new business we need to be able to say, look at us, this is who we are, this is what we can do and by the way we work to these standards.” So there are some perceived benefits to these changes but they do not seem particularly significant to the business, when asked if having this environmental accreditation had positively affected profits the reply was “at this moment in time no”. There was

some perceived benefit for future business with the general manager stating “if customers are looking for new suppliers then they will look for companies that have all the flags all the whistles and can actually say we got this standard and we got this standard. It is or can be a selling point for the business in the future provided we can get some new business.” Clearly from this there is no apparent benefit to having the accreditation at the moment and it does raise the question of why the business in a financially difficult time would spend the money and time on this if it does not bring a return.

Supply chain pressures

This business experienced no significant pressure from its customer to get the accreditation, the manager states “we haven’t had pressure in the sense of the word” “just after we had published a environmental statement, we were asked by one of our major customers what we were doing on the environment and we were able to send a copy of our environmental policy to that customer and she was over the moon, we were the first supplier to them to actually respond and say that were committed to doing this with the environment.” So clearly it has helped with this customer of theirs, but there were no customers in their supply chain who applied pressure to them before they had obtained it , as shown form the following statement “there is no one who said you have got to; it was a conscious decision to go down that route”

Experience of environmental legislation

When questioned about environmental legislation and regulation the general manager stated “we’ve never had a prosecution, we’ve never come anywhere near a prosecution…….the managing director is so pedantic he’s very forensic in everything there is and if a new regulation comes out he will sit and scrutinise that and then he will say this is what we got to do”. The general manager detailed how there are records for waste going back fifteen years, so clearly even before the general manager arrived at the business, regulations and keeping in-line with new legislation was a priority for the business,

External Support

The general manager discussed the help given from a business support organization called Groundwork. The general manager when discussing the person from groundwork who he worked with describes her and the assistance given as being "very, very supportive and she was probably as pleased as anyone when we actually got the certificate". They helped perform the audit and give advice on what changes would be required. Other support was sought from Envirowise, a similar business support organization which offers various forms of information on environmental matters, however, the general management did not find them as helpful stating that "their response time was pretty poor really." On the whole the "hands on" assistance was seen as being "purely down to groundwork"

The general manager felt that there was support and help available, but that on the whole it was mainly just promoting though bailouts, stating "everyday something comes through the post" and his view of this type of assistance was not that positive, **"**I've been in senior management positions for several years now and I guess the initial reaction is another flyer put it in the bin……I guess that's most managers approach to incoming mail, it's like junk mail you just bin it. So you just treat it in that way". The business also uses trade organizations as a source of information and guidance, organisations such as employers' federation, they are members of the chamber of commerce, members of the Birmingham group trading association.

When asked about what factors effect obtaining support the general manager stated "the whole thing hinges on cost....if someone comes along and says we can do this for you and it's going to cost, we aren't going to do it". The general manager sees this issue as affecting many businesses their size, stating "there's companies that I know that would love to go down the ISO 14001 route but won't even entertaining it, because it means somebody's actually got to be committed to actually writing that manual, to working with people like Groundwork to talking to people like yourself and that's a cost".

Attitudes to change

When asked about how the SMEs employees reacted to ISO 14001, the general manager stated "throughout the company the change has been very good, the most difficult thing to change are not normally the people on the shop floor, its normally senior managers and directors of the company, and I would be lying if I said there wasn't some initial resistance to that". This resistance was primarily down to the perceived cost of implementing ISO 14001. The attitudes were changed apparently by the new general manager's previous experience and the availability of free assistance and training.

Main factors that motivated and enabled company A to attain ISO 14001

- The company already had ISO 9001
- Desire from top management to look into environmental management
- Previous experience of ISO 14001 by general manager
- External support and expertise

3.1.2 Company B

Overview of business

Company B opened in 1978 and was very small since then they have continued to grown, they currently employ 40 people. The business makes specialist coatings, mainly for engines in aeroplanes and does not make household paints or emulsions, according to the general manager ninety-five percent of what they make is solvent based.

Awareness of environmental impacts of business

Before implementing the ISO 14001, the general manager described his business as "a terrible company" in terms of their environmental performance. The main environmental impacts of the business are characterised by the production manager as being " a big wheelie bin outside that

gets emptied fifty-two times a year, we've got a fourteen cubic yard skip, hazardous waste skip that's emptied three times a year and we last year we have had three hundred and twenty-two litres of VOC emissions". The production manager is aware of the various impacts but is not able to tell me which is the most significant.

The production manager describes the activities of smaller businesses reducing their environmental impacts as "its only the big boys that are playing ball and the little companies are just trying to make a living, they're too busy doing to do this to do that" but he does see an important and positive effect that small companies can see if they make changes "if you take a step back and invest the money I think it can pay dividends for them really".

Decision to achieve ISO 14001

The general manager was very clear about why the company implemented ISO 14001, he states "the main thing that made us have ISO 14001 was that our biggest customer is [international manufacturer] and they are pushing all their suppliers down the supply chain turning them green".

The production manager made it clear that they had no choice but to pursue ISO 14001, "if you haven't got it they don't want you. It was a do or die situation". Their main customer asked the business to get ISO 9001 and then two years later they starting "pushing" for ISO 14001.

The company had not really heard of ISO 14001 before it was made a criteria for bring a supplier of their main customer, according to the production manager "well there's lots of different stakeholders and interested parties, but nobody mentioned it, nothing at all" and it may be due to the industry this business is a supplier to as to why this pressure is now in place "it's only the aerospace customers who ask for 14001".

Process of implementing ISO 14001

When the business were told that they needed to work towards obtaining ISO 14001 they were invited to a workshop by their customer that highlighted what the business needed to do. They

sold the idea of accreditation not only by the implied threat that they would lose business but also by highlighting the benefits of it in terms of financial savings, this can be demonstrated by the production managing stating that it was made clear that "we need you to do this if you are going to continue to supply us and they put it over in a very positive way".

The main challenges for this business to implement ISO 14001 were "financial, man hours and also the difficulty with the legislation" according to the general manager. The biggest challenge was apparently dealing with the environmental legislation which the business must be up to date with to successfully obtain ISO 14001.

However, gaining ISO 14001 was made easier for this company by the fact that they already had ISO 9001. When the production manager first got involved with ISO 9001 he found that the "funny quality speak" was difficult to understand. Language like "objectives and targets, implementations, monitoring and measuring". By the time they needed to look into how to get 14001 the production managers states that "because we had already got into the swing of 9001 it helps you".

Benefits of ISO 14001

In terms of their environmental activities the general manager states the business "had absolutely nothing so everything to gain". The production manager highlighted the main improvements that have come about, these being: halved the number of hazardous waste skips; halved their normal waste that the council removes; VOC emissions have approximately halved.

According to the general manager when discussing the environmental expertise within the business "we had a new factory manager come in who had come from a large company…..he had already put in the quality systems in two maybe three other places".

The business had no accreditations and did not even comply with environmental legislation before attaining ISO 9001 and 14001, now they are seeking out even more accreditations "we're actually finishing with 9001 and we're going on to the aerospace standard which is higher which is called AS9100". So it could be argued that gaining accreditations such as ISO 9001 and 14001

raises the idea of accreditation and rather than just being a box ticking exercise it develops into a culture of compliance and accreditations.

The savings from having ISO 14001 has surprised the production manager and the staff of the business "people thought it's not going to save much money but I don't think people realised how much we're wasting". The savings have been mainly due to the reductions in the amount of waste they have removed, reductions in gas, electric and water usage, also their insurance premium has come down.

However for the production manager there is a one very clear example of why ISO 14001 has been worthwhile and that has been in avoiding prosecutions due to causing damage and polluting their local environment. One of the requirements for ISO 14001 was that they rebuild a bunding area (concrete area with deep foundations to prevent any spilt chemicals leaking into the ground) to store barrels of various chemicals and solvents. As they are next to a river they have always had a bunding area however before ISO 14001 it was not sufficient. Introducing ISO 14001 meant that when the business suffered from a serious fire (this occurred not long after ISO 14001 had been achieved) at the business they had an emergency plan in place so the fire brigade knew exactly what was being stored and how to deal with it. More importantly the new improved (and now legal) bunding area meant that the 150 barrels each containing 200 litres of solvents that were stored on site did not go into the river and when the fire had been dealt with only one metre of concrete had to be removed rather then it seeping deep into the ground. The production manager highlights the importance of ISO 14001 for this company by stating that "just on 14001 for that event we saved money by probably not being fined by the environmental agency so it already paid its due back to us within a year of having it".

Experience of environmental legislation

The main attitude towards and awareness of environmental legislation before ISO 14001 was implemented can be characterised by the following comment "people really didn't care before" an example of this being the general ignorance towards some of the more basic duty of care of waste that are legally requires, "I don't think anyone on the shop-floor knew there were two different types of drains".

The general manager goes on to say “the legislations changing almost weekly, monthly and it’s extremely hard to keep up”. Even with a legal register which is a requirement of ISO 14001, the production manager does not feel this necessarily means that a company is fully compliant “you can do as much as you like but I never think anyone is actually one hundred percent compliant but very nearly”.

Support

As well as their customer offering some support in the form of the workshop, the business also benefited from support from various business support organisations. Groundwork gave support mainly in the form of seminars which helped overcome the challenges of conforming to the legislation. The support from Groundwork became available through mail-outs which the production manager received by chance around the same time as they were informed the business needed to adopt the accreditation. The production manager felt there was a lot of information and support available “there’s plenty of help out there from the Environmental Agency, Envirowise, NetRegs, the Carbon Trust” and he felt that there was plenty of help from these organisations “once you start asking they can’t help you enough”.

Attitudes to change

According to the production manager when asked about the employees attitudes to the accreditation “it’s had a very positive effect culture wise in the factory and warehouse and everybody likes recycling and its had a good culture change in here”.

The general manager claims that “the directors aren’t very keen on it, they are a bit miffed because locally here…it’s a dirty horrible place and we a nice clean company and other places they are not working legally”. The manager describes the various way its neighbours, (other SMEs) pollutes its local neighbourhood and the river that runs adjacent to the business. This has led to the directors resenting the fact that they have to pay out to improve their company’s environmental performance when others do not. But overall the directors can see the positive changes and savings that have come about and are continue to invest in improving their

environmental performance an example being that they are actively trying to improve the level of environmental expertise in the company, the production manager states that "the company's sent me for NVQ4 [National Vocational Qualification, Level 4 (of 5)] in environmental management".

Main factors that motivated and/or enabled company B to attain ISO 14001

- customer pressure
- manager had previous experience of IS0 14001
- already had ISO 9001
- external support and expertise available
- compliance with legislation and potentially avoided fines
- financial savings through resource efficiencies (unclear degree these per perceived at start of process)

3.1.3 Company C

Overview of business

Company C are a land research business, who work for various clients researching land and amongst other things converting paper documents to electronic format. The interview for this company was conducted with the manager responsible for, in his own words "quality management system, environmental management system, health and safety and I am just starting an information security system." The business operates over several sites employing approximately 220 people, with the main site where the quality manager works employing 100 of these employees in an office setting.

Awareness of environmental impacts of business

As an office based company the quality manager does not regard the business as having much impact on the environment, he states that "It's not like we are a manufacturing plant that's pouring out tonnes of CO2 or you know, tipping oil down the drains and things like this, the

direct impacts on people and the environment is quite minimal" however he does state that "I suppose you could argue that if all the smaller companies got together it would be, it would create a bigger impact". But overall throughout the interview he reiterates in several ways that he does not view the business as having any significant impacts on the environment, an example being "as a business we know we are quite minimal and that we are not under any illusion that we are going to save the world".

Decision to achieve ISO 14001

The manager stated the business obtained ISO 14001 due to "a lot of the businesses we deal with……tend to find in the tendering process is that they've got a list of standard questions. Have you got ISO 9000 quality system? Have you got an environmental management system? Have you got a health and safety management system. They tend to be the three biggest questions". According to the manager this need was picked up by the sales department of the business who said "perhaps we are going to have to go down this route as we don't know how many tenders we are losing through not having an environmental management system in place". What is perhaps surprising is that ISO 14001 is put solely down to this tendering process and yet the company does not know whether not having ISO 14001 would lose them any business.

Process of achieving ISO 14001

When the idea of ISO 14001 was first put forward there was some initial reluctance and resistance with the manager stating "being an office based business haven't really got a lot of areas that can benefit from us having 14001, so initially we were not really for it, we were against it really". Overall the quality manager sees this process as not being too difficult for the business and they achieved it with 12 months. One of the reasons for this apparent ease appears to be down to the fact the quality manager already had implemented ISO 9000 and therefore states that "because we've got our 9000 system as the core of this, we've bolted on if you like the elements that were missing from the 9000, the difference from the 9000 and the 14000, we sort of bolted those things on". Added to this is the fact that he has experience of ISO 14001 as he implemented an environmental management system at his previous employer which was a manufacturing business.

At the start of the process the quality manager puts training with Groundwork as another of the keys to the accreditations successful completion “I had some training with Groundwork UK, a six week course who sort of put me on the right path”.

The main areas which the ISO 14001 addressed were “our energy management, so lighting, gas, electricity, water and we looked at transport as we’ve got a lot of people who travel the country, we look at paper usage”. One of the key areas of ISO 14001 is setting objectives and targets “we are looking at a 5 to 10% reduction in paper usage this year and everything so far is on target. In paper usage it looks like we are going to exceed that quite dramatically”. The success of this objective being on and perhaps beyond the target is down to in the managers own words “a lot of awareness training”.

Before ISO 14001 was pursued by this business the quality manager describes the businesses environmental policy and performance as “the environment was never really talked about”. So therefore it is clear that there has been a dramatic shift in the company’s actions even if the quality manager still sees the business as making very little difference to the environment.

Challenges in implementing ISO 14001

The quality manager when discussing auditing describes how “the first auditor came along and did our audit for stage 1 and said “yep, great, not a problem go for stage 2”. Stage 2 come along and he sat there and said “hmmm not so sure you should have gone for stage 2 yet”. So we had a bit of a discussion and we said “well it was on your recommendation we went for stage 2” well he said “no, I’m not quite happy with this, I’m not quite happy with that” and he give us a long list of things he wanted changing, which we did and he came back in and said “yeah, no problem” and signed us off.” It appears that a consistent approach from the auditing was missing and this affected the businesses progress.

Another major challenge was the resources required to make environmental improvements, the quality manager describes their approach to managing the businesses resources as “the one thing we said at the beginning was that we are not going to be foolish about this, not going to start

getting rid of stuff and it costing a fortune if it's of no benefit to us as a business" and went on to say "got to try and make this work for us and if it costs too much then it's not worth having".

The final major challenge for this firm was the idea of continual improvement, ISO 14001 states that there must be a process of continual improvement and in audits this is looked at to check it is being done. This business viewed continual improvement as something achievable by delaying environmental initiatives and therefore slowing down the process of change. The quality manager states that "one thing that we were really conscious of was that we could make lots of changes overnight, some quick fixes and made us look great, but you've got this continual improvement element of the standard and we said to the BSI guys right at the beginning "what's the point in us doing everything we can in the first six months, then you come along and say show us your continual improvement" we got nowhere to go". This demonstrates either a misunderstanding by the business of what the purpose of continual improvement is or it is a shrewd move to enable them to maintain the accreditation with less effort then if they did all initiatives and process changes as they came about, from the way the manager spoke about the accreditation It would appear to be the latter.

Benefits of ISO 14001

Apart from the possible advantages in tendering for new business, the quality manager summarises the benefits of having ISO 14001 as "we couldn't really see any benefits to us... what we have found since its in place is that we are really benefiting from it anyway, so it has been winning situation on both sides".

In terms of actual measurable business benefits the quality manager states that "I wouldn't say there have been any increased profit that we could link to it, but there's been lots of internal savings, our paper, last year we used 11 reams of paper per person on this site, this year we are probably looking at about 6, about 50% reduction in paper usage. Now it's not a great deal of money but it's a couple of thousand quid." Here there are clear, measurable savings which individually may not seem like a great deal, but with the business looking at more and more areas of its operations these savings are increasing, for example the quality manager states that they are starting to look at possible transport savings, stating that "a quarter of a million pounds we spent

last year n transport costs, now if we can bring that down then there's significant savings there, because that's big money, it is quite difficult because of the nature of the work we're in, we have to go to some remote places and driving is our only option, but there are opportunities for savings there." Clearly, the business views these savings as a significant benefit that the quality manager suggests were not evident at the start of the accreditation process.

Evidence of the resources efficiencies and financial savings can be seen in the two tables below, two of a number that the quality manager produced, each demonstrating reductions in resources.

Figure 12: Company C Paper Usage Data

	Reams of paper purchased / year	**Price/ ream**	**Cost**	**Total paper use (reams/ person/year)**	**Cost (£/person/ year)**	**Reams of recycled paper purchased/year**
2005						
A4	1280	1.79	£ 2,291.20	11.6	£ 20.83	0
A3	40	3.99	£ 159.60	0.4	£ 1.45	0
Total	1320		£ 2,450.80		£ 22.28	0
2006						
A4	390	1.048	£ 408.72	3.5	£ 3.72	390
A3	0	0	£ -	0	£ -	0
Total	390		£ 408.72		£ 3.72	390

Figure 13: Company C Recycling and Waste Disposal Data

	Annual waste recycled (kg)	**Total annual waste disposal (kg)**	**Recycling rate (%)**
2005			
SITA (Private waste company)	495		
Totals	495	4,455	11%
2006			
SITA (Private waste company)	660		
Hazardous	66		
Totals	726	4,686	15%

The manager did not make it clear that ISO 14001 had itself led to these efficiencies and savings however throughout the interview and when talking about resources he discussed how ISO 14001 had focused the company' attention more on such issues. Therefore, it is possible that ISO 14001 may have raised awareness of such issues and therefore brought about benefits.

Experience of environmental legislation

On environmental legislation, the manager states "I have a day job and the last thing I want to do is sit there trawling through the internet looking for changes in law", therefore as a solution the manager goes on to say that "we actually use Groundwork to provide a legal audit service for ourselves, it is one of the aspects of ISO 14001 that we don't deal with".

This business being compliant has meant that some of the savings in other areas (e.g. paper usage) which have just been demonstrated are reduced by some increased costs "we've seen costs go up with waste disposal, that's going up £6 per person this year", however the quality manager does not view these costs too negatively and justifies them by stating that "at least we are complying with regulations with disposing of our waste correctly, which is what everyone should be doing anyway."

The quality manager sees external support with legislation to a key element in their success at implementing ISO 14001, he says that "it teaches to pay somebody else to do it and I think that's where most small businesses will benefit is if they can outsource that side of it, because I think it is too much of a minefield".

Support

The quality manager describes how he came to use Groundwork's services "I was doing some research looking for a local consultancy to come and give us some help and we had a couple of guys come in, local from Birmingham, consultants, who wanted stupid money……I came across Groundwork on the internet…… and got a really, really good price in the end. So the consultancies didn't stand a chance." This demonstrates the need, especially for an SME of

inexpensive, affordable help. The manager made it very clear that without this affordable assistance the business would not have been able to keep up with the legislation and therefore jeopardise their accreditation.

As well as using Groundwork, they have also used Envirowise a source of information. In general, the quality manager found that most support offered was in the form of newsletters and that these were often not appropriate for his or the business' needs, he states "the trouble we find is that a lot of these newsletters that come out, a lot is really high level environmental information, a lot of it is about businesses sticking out 50 million tonnes of CO_2 and such like."

Attitudes to change

The quality manager found little resistance from his employees at the start stating "people were quite keen on it. It was quite surprising to us, we didn't think many people would be that interested in it, when we started rolling out awareness training, people within the training were really keen for it, really up for it, throwing loads of ideas into the pot and what we could do to improve things".

One possible reason for the lack of resistance from the employees is put down to the type of people the business employs "a lot coming out of uni and coming to work here and we have a lot of people working here during their term breaks from uni, doing research projects. So they are coming from a background where a lot of this stuff is talked about anyway." Clearly, an office like this with a specialised service will perhaps face less resistance due to the education that their staff have already received before joining the company.

Added to this is the fact that a lot of the employees have a greater interest in how the business is doing in terms of their job security, they also have an investment in the business "a lot of the employees are shareholders as well, so that has a big impact on the way business is run. So these changes that are being made they see it as a benefit to them as shareholders". This shows that employees who have already had exposure to the idea of environmental responsibility and who have an investment in the business are perhaps more likely to be accepting of environmental policies and procedures then those who have not.

One of the keys to getting the employees on board according to the quality manager is also to get them involved directly in the changes "we've got 5 or 6 focus groups for various things… we've got an environmental forum". The manager goes on to state how he feels that the environment has gone beyond a "bolt on" to their quality system and is now a much deeper part of the business operations, stating that the employees "don't realise that it is so embedded into their job role and their task that they just see it as a norm".

Main factors that motivated and/or enabled company C to attain ISO 14001

- perceived customer pressure through tendering process
- already has ISO 9001
- manager had previous experience of ISO 14001
- availability of external expertise and support
- highly responsive and engaged employees

3.1.4 Company D

Overview of Business

Company D is a Stoke based manufacturing company who, in the words of the engineering and quality manager "manufacture harnesses, anything to do with wires and cables with connectors on the end of it is what we do……the main one (customer) for us is in aerospace".

The business employs around 100 people and has a turnover of five million pounds. The manager being interviewed as well as calling himself the engineering and quality manager also called himself the "environmental champion". He went on to say "I don't have any environmental credentials, I know nothing about environmental issues, I have varied responsibilities, typical of anybody in a small to medium-sized enterprise, I am responsible for quality, engineering, all of those things".

Awareness of environmental impacts of business

According to the quality and engineering manager the main environmental impact that he is aware of is “the cleaning processes, we do a lot of soldering, therefore we do a lot of cleaning of soldered joints and getting stuff out of them, but it’s all mainly localised cleaning on the bench, so it’s the use of solvents. We have solvents around the business and then we have lots of soldering irons so we use a lot of electricity from that area and they’re the main impacts that we have within the business”.

Decision for implementing ISO 1400

The main reason for this SME going down the ISO 14001 route is not made particularly clear, the quality and engineering manager states that “it's been driven primarily just by me within the business” and goes on to say that “it's not a strategic thing that we got into.” So it was personally driven and not a strategy that was developed by the managing directors. This personal drive according to the manager was apparently brought about by him joining a group called the Staffordshire Business Environmental Network (SBEN). He describes this organisation as being for local businesses of all sizes that “have morning meetings where they discuss environmental issues or latest legislation and stuff like that”. He is very clear that this was what started his businesses change in environmental management. This lead to him being introduced to ISO 14001, he states that “it was through that, just my own personal interest that I got in touch with some consultants who just going down the route of this ACORN project and we just sort of stumbled into it in that way”. The ACORN project he talks about is a project which offers a staged approach for smaller businesses to obtain ISO 14001. He describes it as “an idiots guide to ISO 14001”.

Process of achieving ISO 14001

The process of obtaining ISO 14001 through ACORN took approximately 12 months and involved the following “first thing we did was set up a green team, so we asked for volunteers from all areas of the business and got those in place... then going on to try to identify the impacts... nice and simple I could get everybody in a room and we could go through it and out of

that we got a very, very good understanding very quickly about what our business was". This system according to the manager made ISO 14001 very simple and manageable, he praises it as he says "it worked very well for us, because it was nice, simplistic, take the jargon out of it, make it so that people can understand, give them the opportunity to do some colouring in and they understand it then. It worked really well for us".

One thing that also assisted him with its implementation was that he already had ISO 9000, this meant according to him that he has "tried to amalgamate them as much as possible" this made it much easier and meant "all I had to do was bolt on a few bits and pieces from the environmental stuff, so yes it did help a lot".

When asked how he became an environmental champion and therefore started this process he could not answer, he says "I couldn't tell you, it may have been that SBEN had a few free breakfasts, so I just go along for that….so I don't know how or why, I just sort of got into this thing and just started to think that we should do it and champion it". It seems that he just came across it and took it on-board with his role. However, whilst he demonstrates knowledge and enthusiasm for it, he also points out that it is just part of his job role "the reason I am the environmental champion here is that I am responsible for it and if it falls apart it won't be "it fell apart because we didn't care enough", it will be "it fell apart because I failed". So it's one of my responsibilities so that's why I will always champion it here." But he also states "it's only a small part of what I do, the quality, engineering is much more important to me than the environmental thing....If I hadn't been going to that thing we would still be in business, still be doing what we are doing now, just without ISO 14001".

Challenges in implementing ISO 14001

It was very hard to draw out of the manager any elements of the process of the accreditation that create issues or problems, He describes the process as having "no challenges for us at all really, cause one of the easy things for us is we are reasonably clean as you go around, we're nice, we're clean".

Benefits of ISO 14001

A benefit of ISO 14001 that the manager describes is the potential for an increase in business, he states “we see it as a marketing possibility for us” he goes on to state that “a couple of our significant customers who have said that they would like their suppliers to have ISO 14001, it has not necessarily opened a couple of doors for us but it has given us an easy passage through tenders having ISO 14001, One of our main customers now like to encourage their suppliers to have ISO 14001 but they have not mandated it at all. None of the large organisations are making it mandatory at this point in time, it’s just like a benefit to us”.

In terms of competitive advantage, the manager is very aware of where they stand compared to their competitors “there’s a lot of competitors out there that can do the same sort of stuff, or similar sort of stuff and we try to differentiate what we do, but we are better than our competitors, none of our competitors have ISO 14001, so we are ahead of the game now. Which is something that helps us in marketing terms and in getting business and securing business”. So overall, whilst at the start of the process it was not a strategic decision, it is clearly now being seen as a key part of their business strategy.

In terms of the benefits to the environment, he sees the improvements as being “it definitely has improved the environment of our workshop, people are aware of our environmental issues… a third of the plastic we purchase goes to landfill, because we are changing over all the time and a large amount of different types of plastics so segregation is quite expensive, but we are focusing on that this year and trying to see if we can improve that, we had initiatives to reduce the amount of water that we consumed and we were successful with that”.

When questioned about any financial benefits of having the accreditation the manager states “I don’t think we’ve saved any money by doing it, I think we’ve certainly drawn back from the brink of being open to any sort of summons from a legislative point of view”. He goes on to describe how he feels that the lack of savings is due to the small environmental impact the company has, stating “because we weren’t significant environmentally, we had no significant impact anyway, we weren’t very dirty, we weren’t using any lots of solvents, we weren’t pouring

them down the drain, you know we weren't doing anything really significant, all its done is make our environment better and make us feel better about ourselves".

Experience of environmental legislation

One of the benefits discussed above is that the business has potentially avoided any prosecutions due to failing to comply with legislation. This SME was apparently not complying with legislation before they started the accreditation process "we were not complying fully with legislation, mainly in the areas of chemical, we use quite a few different chemicals, but it's always very small volumes of it and so we stockpile it in the storage area and get rid of it once a year or once every six months or whatever, but understanding the legislation about what can be disposed of to landfill, what is hazardous chemicals, what has to be controlled by COSH regulations and all of that stuff, so it was very good from that point of view".

Support

An example of support helping the business is described by the quality and engineering manager as "through SBEN we are getting all the support we need, there's a company called ECO3 and they have been very good, they have been getting funding from the government and they have been coming along, giving us training".

Attitudes to change

The quality and engineering manager is the self proclaimed "environmental champion" and has guided this accreditation process from the start, but this process has not been fully accepted by the businesses employees and management all the way through, he claims that at the start of the process "everybody paid lip service to it, yeah I got support of the managing director, he put the money forward for it, but that was the end of it then, it was just right get on with it". He doesn't feel that everyone has "brought into" completely, he states that "the green team have brought into it but the rest don't really care about it, but they recycle and I do believe they feel good about recycling".

The manager states that although management is more brought in now, that if he were to try to implement ISO 14001 now, it may be far more difficult, he states "things are more competitive and our business is now more focused on different things, given the situation now with this company I don't believe that I could sell it to the management team now".

Factors motivating and/or enabling Company D to attain ISO 14001

- role of manager as "environmental champion"
- availability of external support and expertise
- already has ISO 9001
- potential marketing tool
- some pressure from customers
- complying with environmental regulations and potentially avoiding fines

3.1.5 Company E

Overview of Business

Company E is a Staffordshire based manufacturer of adhesives and solvents. They have been in existence for over forty years and currently employ 85 people. It's turnover is around eleven and a half million a year. They have achieved both ISO 9000 and 14001 accreditation.

The interview was with the compliance manager, in his own words he describes how he joined the business and eventually took this role "I joined the company from Shell as a health and safety manager….. the managing director decided to go for 14001 so I became the health and safety and environmental manager and then the quality manager retired and I took on his role as well, so I'm now the quality, health, safety and environmental manager which we call QUENSH".

Awareness of business' environmental impacts

The compliance manager when asked about the company's environmental impacts had a clear understanding of what these were "ours are definitely emissions to air and landfill". As well as

being aware of what their most significant impacts are they also measure these with key performance indicators (Kips), he states “we measure monthly out what tonnage we send to landfill and we measure annually the air emissions” the reason for these is the need to comply with local government, according to the compliance manager “we come under the local authority and what they do is they require us to comply with their permit system and part of those are measuring the emissions to the atmosphere”.

Decision to implement ISO 14001

The compliance manager appears to have a very clear idea of why the company decided to obtain ISO 14001, he puts it mainly down to pressure in their supply chain “there was a drive on from the larger companies, mainly the automotive industry to raise awareness of 14001... that’s how we came by it really”.

He did not see ISO 14001 as being essential to maintain business with larger companies in their supply chain instead he states “the larger customers will ask if you’ve got 14001, and if you haven’t it’s not that they won’t deal with you, it’s that they say they may come and audit”. However it was perceived by this SME that this may occur in the future with the compliance manager stating “we thought at one time that everybody would be saying we are only going to deal with environmentally friendly companies that have 14001”. However the compliance manager does go on to state that he is uncertain just how important ISO 14001 is to their customers “I often wondered if we said no we haven’t got it whether or not they would deal with us, because at the end of the day I think they would just go for the economics of it.”

Process of achieving ISO 14001

The compliance manager states that the managing director “went to a seminar….and he actually got, the best way to describe it is a road to Damascus job because he suddenly saw the light and decided that he was not going to leave the world, an unenvironmentally unfriendly world to his offspring, so he embarked of 14001 with a vengeance, so I’ve always had top management support, total support.”

According to the compliance manager the process of achieving the accreditation took about eighteen months. The process began with a consultant being brought in, however the compliance manager did not feel that the consultant was value for money or even competent, he states “the consultant was poor, the consultant put in procedures by cut and paste from another company and part of our procedure referred to a Redditch branch which we haven’t got”. The compliance manager says that the consultant was sacked but it had still cost them a “lot of money”.

It was at this time that the compliance manager took over “I took it over and……I did a diploma in environmental management…..It’s a NBOSH Environmental diploma certificate, so I not only get the letters after my name but I also know what I am doing as well” these diploma was paid for by the company and demonstrates a commitment from the top management into the environmental management process, the compliance manager states that “the course was about 5 grand, so maybe more, and there’s my time on top of that, it was a good commitment by the company”.

When discussing the business as a whole and the accreditation the manager states “it’s throughout the whole company and it was driven by the managing director and when I did my diploma of course I got converted to it as well, so it’s that type of ethos. You can only do it throughout the company; you can’t do it on your own”. This commitment through the company has apparently faced little resistance or challenge in terms of getting all employees on-board, the compliance manager goes on to state that “its everyone, in fact it was probably easier to implement than the health and safety legislation when I came in because when I came in nobody wanted to wear safety specs and I had a real battle getting people to wear safety specs and I don’t have any problem getting people to put lids on containers... it wasn’t hard”.

In terms of achieving ISO 14001 the compliance manager states that having ISO 9000 did not help with its implementation, the reason for this being “we put 14001 in as a parallel system”.

This business use BSI for its auditors, they state that “we picked BSI because they are the most stringent”. They view auditors rather than being something they just need to pass each year as a tool that they are paying for and therefore should get as much benefit from as possible, the compliance manager states “it’s 600 pounds for the auditor to come on site... 600 pounds to me

means I want you to find a gap, that's what it means... I'm not comfortable with the approach of sitting pretty and just getting the badge, cause 600 quid a lot of money".

The compliance manager does admit that the audits are a challenge, especially the element of the accreditation that requires continual improvement, according to the compliance manager "It's not as easy as it was because all of the low hanging fruit has gone, so we repaired all the leaks in the compressed air line. But then, the way I look at it is, if you ever stop continually improving you go out of business anyway. So you've always got to continually improve and this is just another area you've got to continually improve in".

Challenges in implementing ISO 14001

The compliance manager when discussing the challenges of achieving accreditation states that "the issue for most companies is the issue of resources, whether or not they've got the time or the people to do it." He goes on to state that "it was purely time, everything else was quite logical in what we were doing and it wasn't difficult to follow it was purely someone to be able to sit down and do it." .The main challenge for this SME appears to be the restricted resources it has, part of this lack of resources was the lack of expertise in this area "when we were implementing it and I kicked this consultant out so I got no guidance I really struggled to see how we were going to do certain things, but then it became obvious". Other than this issue of time and expertise the compliance manager saw the process of accreditation as fairly straightforward and it was not possible to find any more difficulties or challenges that he and the company faced.

Benefits of ISO 14001

This SME obtained ISO 14001 in order to maintain business from its customers in its supply chain therefore it is logical that the main business benefit of having the accreditation would be the continuation of business with its customers and on the whole this was the case with the compliance manager stating that "some of our customers want it, they want you to get it, and maybe it is that when our salesman goes in to a company and we go in at the same price as everyone else then maybe, the larger companies, the more forward thinking companies would look to see what sort of accreditation you've got." However this was not the only benefit, he goes

on to state that “we saved on electricity, there were ongoing things as well, we saved a huge amount of money on solvents with better management of solvents”.

Experience of Environmental legislation

In the compliance manager’s own words before the company started to work towards the accreditation “we didn’t know anything at all about environmental legislation”. When questioned about non-compliance the compliance manager stated that before there were areas where they uncovered they were not meeting environmental legislation, however when questioned for more details he asked for the tape to be stopped and discussed an example of their non-compliance but asked for the specific example not to be mentioned here. What did become apparent and he was happy to discuss is that this non-compliance was apparently evident in most adhesive and solvent manufacturers, however during the process of attaining ISO 14001 this issue was addressed and the business now complies with all legislation.

The compliance manager when asked about any benefits to having accreditation and therefore meeting legislation did not feel it was a significant advantage over their competitors without the accreditation, he states “there’s an advantage, I wouldn’t say it’s a big advantage, but it just makes things smoother, a little smoother”. However, this does not mean that the compliance manager does not view compliance as important, as his job title demonstrates he actively is looking at any changes to legislation and what they need to do to stay compliant, they rely heavily on the website “Netregs” and in his own words the compliance manager states “I’m not only looking at what the current legislation is but I’m looking to see what else is in the pipeline. That’s a good way of doing things, because it means you can plan, so for some people it would come in and hit them in the back of the head and then they’re struggling then to find how they’re going to do it, but we’ve already, we’ve already done it haven’t we”.

For the compliance manager compliance with regulation is so important that they not only work towards ISO 14001 but also ISO 14004, according to the compliance manager “14004 takes you beyond 14001, well beyond it, well passed compliance and well passed what you would normally, reasonably expect people to do for the environment. But we like 14004 because 14004 is more stringent but you get more benefits from it, so if you look at the aspects and impacts of

14001, 14004 says yeah but can't you go beyond that and you look at other things as well and that's what we do".

Support

The compliance manager's view of support is not a particularly positive one, when asked whether he finds the support offered by the Staffordshire Business Environmental Network (SBEN) who was the source of this SME as a contact for this research he replied "not really, we are quite ahead of the game". However, that does not mean that he sees no benefits in SBEN's work, he states that "SBEN hasn't taught me anything but if I've got some of the people that work for me, they can't do the environmental diploma the same as I did, but if they need to know a bit about waste management then I send them along to the SBEN seminar and at 30 pound for, its brilliant, absolutely brilliant, I can't fault it".

The compliance manager goes on to discuss Envirowise and questions the expertise they can offer a business like them, he states "I don't know if it's different now but I would have definitely questioned the competence of people who were offering the support, even to Envirowise, right you get someone from Envirowise and they are going to do you an energy survey, they haven't got the expertise for this type of building, they might be ok to go around an office but they don't understand temperature differentials in reaction vessels, there's lots and lots of areas where they are very generic and can only give obvious advice".

The compliance manager has seen an increase in the support available, however he does not feel it is all worthwhile even if it is not too draining on the businesses financial resources "you get pressured all the time by companies who say they could get you a grant to do this, we could do it for you for nothing, but it isn't for nothing cause it's my time is taken up and that's a cost…….there are a lot of people taking advantage of it"

The compliance manager has now had 14 successful audits and is now at a stage where they can act as a good example to others, the compliance manager explains how they now help other companies "we will actually mentor other companies, if they are struggling to get 14001, I'll have them here for an hour or a couple of hours and they'll tell me what they are struggling with

and we'll help them out with it." when questioned why they are a mentor, the compliance manager replies "it costs us money to do that, but it's part of contributing towards the environment, it's good to help other people to get it, to obtain it."

Factors that motivate and or enable company E to attain ISO 14001

- top level leadership on board
- pressure from customers
- manager a "green champion" with expertise in area
- financial savings through resource efficiencies (although this was not clearly perceived as an advantage before getting ISO 14001)

3.1.6 Company F

Overview of Business

Company F is a print management company, the interview was conducted with the quality and environmental manager who described the main function of their business as "we have a small sheet printer ourselves where we print things like letterheads, business cards, compliment slips but the vast majority of our print work is done by our supply base which is obviously carefully managed by us" she goes on to state "we have large blue chip companies like (names a few examples) who basically place a print management contract with us for design, print, storage and distribution of their goods". The company has been in existence for over 30 years and has just over 100 employees.

Awareness of environmental impacts

The environmental manager claimed the business' main environmental impacts were the "disposal of waste, both hazardous and non-hazardous". This awareness has meant that in this area the company has set various target, the environmental manager explains that "a lot of our objectives and targets have been looking at waste minimisation and cutting down what we are sending to landfill, increasing our recycling basically".

The quality and environmental manager does however state that they viewed their overall impact on the environment as being proportionate to the size of the business, this is demonstrated by her saying "we probably thought compared to a lot of companies we probably have not as big an impact as like a building company or something, we're not doing anything particularly nasty industrial wise or anything." However this has apparently begun to change "I don't think we even thought about it before or even recognised that no matter what your business is or indeed at home as well, you have an impact on the environment and you should be doing what you can to minimise that really."

Decision to achieve ISO 14001

The main motivations for the business to go the route of ISO 14001 seems to be a combination of supply chain pressure and personal motivation from the quality and environmental manager. In terms of customer pressure she states that "larger customers asking more and more requirements for environmentally friendly products ……. and also coming in for tenders as well, it used to be five years ago you got a couple of questions on whether you've got an environmental management system, you now get a couple of pages of questions so it was becoming increasingly more important for business and existing customers as well".

In terms of her own personal motivation, it is clear throughout the interview that she has a great deal of pride in what she has achieved in assisting the company to achieve ISO 14001, regarding first going for ISO 14001, she states "I decided it was something I wanted to do so between my director and I, we kind of lobbied the board to go for, well to develop a environmental management system".

Another motivation was to keep ahead of potential environmental legislation, she states that "the amount of legislation there is now and coming up in the future, I think the board recognised in both respects it pays to be one step ahead".

Process of achieving ISO 14001

According to the quality and environmental manager it took “about eighteen months” to get the accreditation” once the decision had been made to go for it. After the pressures from the supply chain and her own personal motivation to get the accreditation, it came down to the board of directors to make the decision on whether they were going to go for it. It apparently took a year and a half from first pursuing this to get the go ahead. When the company finally decided it was going to try and achieve the accreditation they sent the quality and environmental manager on a course with groundwork.

Challenges of achieving ISO 14001

The accreditation process was not seen as particularly challenging by the environmental manager, mainly due to an apparent lack of significant changes needed, she states “because we haven’t really had to change any of our working processes or our industrial processes it hasn’t actually been that difficult it’s just taken quite a long time”. The main challenge appears to have need on resources, especially financially “the accreditation itself has probably cost around three grand and I think the consultant has cost around ten grand and my time obviously as well”.

The main challenges in getting the accreditation that were mentioned by the environmental manager were generally to do with the business itself rather than the actual accreditation. Firstly it was a challenge getting all of the employees on-board with the accreditation “although some people they think it’s a good idea they don’t really want to put a lot of effort into it or they don’t want it to cost them any money, so some people are a bit more sceptical about it than others and I think one of the major obstacles was winning, winning people round and probably changing, changing how everybody thinks about what they’re doing and why they are doing it and what they’re throwing away”.

Secondly there was the challenge of actually being able to make changes, the environmental manager explains that “other setbacks is approval processes throughout the business where I can’t

always act on something I want to do, I have to wait for approval from the board which takes time to do so there's been frustrations in that respect as well."

It seems that the quality and environmental manager has found elements of the company and her job frustrating when trying to implement changes and work to achieve the accreditation, this is especially highlighted when she states "I guess because this isn't my main job, I spend twenty-five percent of my time doing this and seventy-five on the other, if the other part of my job gets busy then that has to take priority because that's making money for the company basically and this isn't directly, so that's, that's been a frustration for the business and for myself I guess as well".

There has appeared to be a slow change to the attitude to the environment in this SME "you are never going to get everybody interested and enthusiastic about it, but if you can just get a few people interested in it who kind of work it in the main office then they are going to spread that enthusiasm to everybody else, but it takes time".

The process of introducing ISO 14001 into the company was complicated by the fact that it was decided to also implement ISO 9001 six months after starting on ISO 14001. The environmental manager admits that the way they went about getting the two accreditations was unusual "I think most people get quality first or have got quality already, then get the environmental on top of that but we sort of tackled it the other way round really", however it seems that having made progress with one of the ISO accreditations made it easier to get the other "I don't know how many times I've read the standard through you know, I could quote clauses and stuff, but it definitely helped me, I knew the language and I knew what was expected cause there's quite a lot of crossover between the two standards, yeah, yeah it did help".

Experience of the auditing process

The quality and environmental manager's view of the auditing process appears to be on the whole a positive one "it's been really good actually, we're obviously nervous about the external auditors

coming in but I was also looking forward to it as well because I had put a lot of work into it and I wanted someone to say "yeah you've done a good job"".

The auditing process is viewed as being supportive of the work she has done rather than just testing it for non-conformance and part of the environmental manager's positive view seems to be down to the auditor, "our auditor was brilliant, he was very thorough and he asked some searching questions…..they make suggestions where they felt appropriate where we could improve things, very non-judgemental just more there to help you so yeah it was very good actually".

Benefits of achieving ISO14001

The environmental manager indicated that there had been clear benefits for the SME from the implementation of ISO 14001, she states "we've cut our paper usage, we've cut our electricity usage, we've increased paper recycling at head office by three hundred percent, umm got to work out what the cost savings on waste disposal of on that yet, but down in our print factory we've saved over three thousand pounds a year on waste disposal costs".

Whilst the environmental manager made it clear that had been business benefits since implementing the environmental accreditation, she did feel that they were limited in the changes and therefore savings that could be made due to the nature of their work, she states "most of our processes are office based and there's only so much you can do to minimise waste and that but for companies who are producing something there's so much opportunity to minimise waste from right from the start that other companies can probably start making money from it".

The environmental manager also sees ISO 14001 as a potential business benefit in terms of increased revenue and new business. As they have not had the accreditation for that long, they have not really used it for this purpose but the environmental manager states that they are starting to look at ways they can make the accreditation increase business, she states "there is going to be a push on publicity and telling our customers about it".

As well as financial benefits to the business, the environmental manager feels that another benefit from the accreditation is an improvement in the way employees and management communicate with each other, she states “I think the biggest benefit for the company’s going to be a better flow of information and communication throughout the company basically, which has come from the quality and the environmental side”. The reason for this according to the environmental manager is that “a lot of companies departments don’t really communicate with each other, you know they moan about other departments and the problems they’ve got with them but no one really talks about the problems and how we can solve them so I think that’s probably going to be one of the biggest benefits”, she feels that communication has improved in various areas since environmental committees were introduced.

Whilst there is a clear indication from the environmental management that there have been both environmental and financial benefits since the implementation of ISO 14001 this is limited by the fact that the SME’s main business is the management of printing projects and therefore most of the products they produce for customers are outsourced by printers. The environmental manager almost brushes over the fact that the actual printing can be done by companies who’s manufacturing processes are unlikely to be done by companies with ISO 14001, she states that "it’s difficult to say really buts it’s certainly a possibility in the future, I know a few of our suppliers who’ve got really big customers like (names multinational) have been told that their supplier base needs to be 14001 accredited by the end of this year, so it could get to that point but not at the moment but yeah I could see how it could get to that point in the future”.

Experience of environmental legislation

On environmental legislation and regulation the environmental manager states the business was “reasonably unaware with regards to environmental legislation” this unawareness meant that when they went for accreditation they discovered areas of non-compliance “as it turned out we weren’t legally compliant but it was things like not having the correct paperwork and stuff rather then we were chucking stuff down the drain”.

One example of a regulation the company was not compliant with was the hazardous waste regulation, however the manager states that this had never been raised by any regulators "we've never had anything raised against us, there's never been any prosecution or anything like that".

As you would expect since achieving accreditation this has changed with an increased awareness of the regulation, she states "we're probably more aware things like the water resources act and what we were discharging down drains and stuff because that has to be looked at anyway and yeah we are a lot more aware now".

Support

As well as the groundwork training the quality and environmental manager attended she also says that she relies on assistance from Envirowise, she states "where I've needed it for specific topics to do with legislation and packaging and stuff we've called up Envirowise cause they run a free help line, don't they, where you can get support and even free visits as well, so we did have, we've had a couple of visits from Envirowise actually and I've spoken to them a number of times on the phone. So yeah we've taken advantage of that free help there from the government".

She seems fairly positive about the help she has received, however she does has one criticism and that is the fact that it is not always easy to find this help, she states "if I hadn't of been on groundwork's training I wouldn't have known about Envirowise... the helps there but I don't think many people know it's there".

Attitudes to change

The quality and environmental manager states that she had fairly good support from the management and directors of the company throughout the process of accreditation once it had been decided that the business was going to go for it, however she also claims that some directors are more interested and supportive than others, she states "we've had a management review with most of the board, we didn't include a few of them because they're not so interested (laughs) but yeah I think directors are starting to take more interest in it now and they do recognise that it's an important win that we've got it now".

In terms of support and enthusiasm to reducing the business' environmental impacts this SME is based in both offices in the head office and the shop-floor in the small printers, the environmental manager acknowledges that there are differences in attitude towards the business' environmental responsibilities, she states "down at the printing most people are just working on the shop floor and a few of them have been really interested, but a lot of them just want to do their job and go home". However she goes on to state that while some employees are more interested than others they are still all doing what is asked of them, she states "they're all doing what they're asked and you know to be fair to them they're coming up with ideas and you know I get a phone call most days going "can I put this in the paper recycling?" not just from them (points to offices nearby) but from people out there (referring to the shop-floor)"

Assessment of ISO 14001

On assessing ISO 14001 the environmental manager states "I think most people haven't got the resource to invest, to employ somebody to do that job and I think it probably happens like it has with this company in a lot of companies where you've got a person who's interested in doing it and it kind of goes from there really".

However whilst she is positive overall about the accreditation she does feel that it does not necessarily mean that a business will become any more environmentally responsible, she states "you don't have to be particularly environmentally responsible to get 14001, you just basically have to show that you recognise what your impacts and aspects are and you're doing something about it or starting to do something about it, it doesn't really mean that your super green as a company" she goes on to state "I think you could probably do quite a lot less then we have and be accredited still" therefore it is clear that she has certain misgivings about how environmentally responsible the accreditation may actually make a business.

Factors motivating and/or enabling company F attaining ISO 14001

- pressure from customers
- manager being a "green champion"

- keeping up to date (and ahead of) environmental legislation
- potential marketing tool
- availability of external support and expertise
- financial savings through resource efficiencies (unclear how much had been saved and whether these were anticipated at the start of the process)

3.1.7 Company G

Overview of business

Company G are a SME with 60 employees who manufacture metal roofs. The interview was with the manager responsible for quality and environment. The company has had ISO 14001 for just over a year but has apparently always been fairly active in reducing their environmental impacts.

Awareness of environmental impacts

When questioned on the businesses environmental impacts the environmental manager stated that "there's no other issues we have, oil is our major issue". This was the only issue raised by him as being significant although he did go on later in the interview to mention raw materials and waste. Overall this was typical of the entire interview where it was hard to get the environmental manager to focus on the business' specific actions.

Decision to implement ISO 14001

The environmental manager when questioned on the reasoning for attaining ISO 14001 stated "we had in the past always been fairly environmentally friendly with aims not to break any regulations, rules, laws or whatever, so to that end we over a number of years have been improving systems". In terms of developing this into obtaining ISO 14001 he states "it came to a point when we said well we do all this work shall we go for ISO 14001". As well as there being motivation from within the company to do this, there was also some external pressure, the environmental manager states "we were getting more and more people beginning to ask us if we've got this".

The environmental manager compares the need to obtain ISO 14001 with the need to have a quality accreditation by stating "it was becoming very much like 9000 became, where you had to have a quality thing. But where more building, especially in cities was being done by councils and these corporate bodies was becoming more environmentally aware and I think there was more demand coming in from customers then, "do you have it?". And it's like all those things, it does help that you are environmentally responsible and you do the right thing".

Process of achieving ISO 14001

The environmental manager describes the start of the process of accreditation as "myself and one of the other employees went on a course to see what it actually meant, it was a temporary course, over 1 day a week, 2 days a week, something like that. And that was run by Groundwork", he goes on to describe the content of the course as "each week dealt with a different part of the requirements, so and you were taught various skills. Then coming back to the site we looked at what did we have in place and what did we have to do". The manager describes the training as being essential.

After the training, the a challenge for the environmental manager was the paperwork that went along with the accreditation, he states "although we had a lot of information regarding transfer notes, waste licenses, we had all that sort of stuff in place, we found out we had quite a few short comings in a lot of these areas, so we had to set up a legal register which we didn't have". He goes on to describe the challenge of actually writing the management system manual stating "I would say that that was where the hardest part, was actually getting our system written and then all the backup supporting manufacturing systems…..that was the people on the shop-floor being trained, contractor training, ensuring contractors coming onto site knew if there were any issues or anything."

Another challenge in this process was the amount of manpower that had to be devoted to it, the environmental manager states "from point of view of manpower it took up quite a bit of time, I'd say full time it would probably equate to about three months" The people involved in the process were, according to the manager "myself, my colleague who mainly did the legal side, he actually

did the legal register and he also looks after the site itself, he does patrol round the site and then….there's also an administrator and she's responsible for keeping all the licenses up to date". As well as the manpower draining time that could be spent on other tasks, there's also a drain on the financial resources of the business, he states "there are expenses with it obviously, pay for your audits, you've got to have the manpower paid for that's going to do the various tasks".

The process of obtaining ISO 14001 was made easier according the environmental manager because they already had a quality management system in place, he states "the other good thing about that was that it just laid out very, very similarly to the 9000 so in that respect we were fairly familiar with that".

The environmental manager sees the implementation of ISO 14001 as being a success, he states that everyone in the company has taken it on-board to some extent, stating "because we've been doing it so long, everybody knows what their role is, you know I don't have to go down and check on them, when the waste oil tanks are full, the guy comes up tells the maintenance co-coordinator, they get the oil company come in, he deals with them when they come on site, so its all, everybody does their bit". He then states "unless people are going to do it for the right reasons, i.e. they care about the environment, then if it's just a business tool then it's probably not the right reasons to be doing it as I would say".

Benefits of ISO 14001

The environmental manager stated that there had been one clear benefit from having ISO 14001, he stated that "there's considerable saving in both the whole effect on the environment from the landfill and financially from us big saving as the landfill cost went up we were decreasing our stuff so we were starting to generate savings". He also explained savings with plastic recycling rather than sending to landfill, he explained "we then started to recycle plastic cause we get an awful large amount of that coming in, so we brought ourselves a compactor……a little bit of investment in the compactor and we could get rid of the plastic so that wasn't going to landfill". Apart from the financial savings of less waste going to landfill the environmental manager did not state any other benefits.

Experience of the auditing process

The environmental manager describes his experiences of auditing by stating "I think we had two pre-audits, the initial audit and then the audit for the certification, yeah we found difficulty understanding what it was they were trying to get to because you know a different auditor, different aspects on different things and we were finding it difficult".

In terms of continual improvement, which must be demonstrated during the audits the environmental manager states "It will get more and more difficult, I mean at the moment its reasonably easy…….as we go further into it, it will become more and more difficult because we're already doing nearly everything we can".

Experience of environmental legislation

The environmental manager explains how the accreditation pays for itself, he states "basically you're subject to these rules and regulations anyway and if they come along and find you're not doing something then yes it does pay for itself".

For the environmental manager the most significant environmental impact (as already stated) is oil, and it has been necessary to make significant changes in order to stay within the existing legislation and not face prosecution. He states "our biggest issue is oil, we use oil in our hydraulics systems, the power presses, the machines etc. and basically cause we're an open site like we are, this is actually a public highway so all these drains actually drain into a balancing pond then go on into a stream, this stream then meanders its way down about a mile away, a mile and a half away to site of special scientific interest, so from that point of view we needed to do that, because what you don't need is bad publicity and a massive fine".

However, this is not something that was introduced with ISO 14001, instead it has been taking place over time and has taken a great deal of work, the environmental manager states "we've taken on a lot of things that previously probably a lot of other people don't do, We've got drain kits in place over the grids so if there's a spill of any of these lorries that come onto the site, we have a bunded area where all these loads from trucks is kept and where waste oil is kept, all

transfers go on within there and wherever we've needed bunded areas we've had to build them" he goes on to state "it's been a long time doing it, you know we haven't done it in a matter of weeks, it's probably been about 10 years. As I said a lot of things we were doing beforehand and most of the stuff was not of a value high enough to do capital expenditure, that wouldn't have made sense so we've tended to do it out of revenue so that's why we've done it bit at a time".

In general the environmental manager feels that there is a lack of effective communication of new environmental legislation, he states "like most legislation usually the first you hear about it is some auditor tells you about it or it comes up in a conversation, I think it's very, very poorly communicated".

Support

This business has mainly benefited from support from Groundwork and Staffordshire Business Environmental Network (SBEN). On groundwork he states "they tend to be quite good, they did some audits for us early on, you know some pre-audits just to give us some feel of where we might be and what have you, so in certain areas they're quite good but they tend to deal mainly with start-ups, if you understand they keep doing the training courses and that but there doesn't seem to be much advancement from that".

On SBEN he states "generally we go to seminars, training, visits that they put on, they've been here once for a visit, we allowed them to come here one time, and the training things they do are excellent but again sometimes it's being available to kind of do these, but they're very good, some are only 10 pounds, you know even the ones that are full days training are only 60 quid, you know that's four or five hundred pounds worth of training, so excellent value and you get some really good stuff from it you know. We probably use SBEN a lot more than we would Groundwork".

The environmental manager states that they have used consultants before, however on the whole he is not entirely comfortable using them, he explains "we have a big fear of consultants doing the system for you, because it isn't your system. They will probably have a sort of generic system and all they are doing is applying these to all sorts of companies and very often there's a lot more

in there then there needs to be, and it becomes a cumbersome system". He states that the key to support is the value they get from it, he states when discussing consultants "that's the only reason we don't use them, it's not the cost, well it is the cost but its value for money".

View of smaller businesses' role in reducing environmental impacts

The environmental manager has seen benefits to companies such as his reducing their environmental impacts, he states "although in some of things in environmental it may appear to have no added value fundamentally it does, its either reducing your long term risks, preventing major mishaps with bad publicity coming from that". He goes on to state that it should not just be about the financial savings but there should be a motivation to make businesses more environmental responsible, he states "I think basically it is making sure you are environmentally friendly, you know, the way to be doing business is not to be crapping up the environment".

In terms of actually getting ISO 14001, the environmental manager makes it clear that it may only be beneficial if it is a requirement of continuing to get business from customers, he states "it depends what it's going to give them, if they're already being environmentally friendly and they're doing all they can, unless it's going to specifically give the access to contracts that wouldn't be able to get to I don't know".

Factors that enabled and/or motivated company G to attain ISO 14001

- pressures from customers
- legitimising current behaviour
- availability of external support and expertise
- already had ISO 9001 in place
- financial saving from resource efficiencies (unclear how much his was seen as a motivation at start of process)

3.1.8 Company H

Overview of business

Company H is a metal pressing company based in Birmingham that has 77 employees and has had ISO 14001 since 2006. The interview was conducted with the manager responsible for health and safety and the environment.

Awareness of environmental impacts

When asked about the company's impacts on the environment, the HS&E manager states " I suppose like everybody else energy is one of them, definitely energy, I mean we are pushing through something like 6 hundred tonnes of steel and I mean when you have to make six hundred tonnes of steel and there's a lot of energy involved". The other main impact described by him was waste, he states "we have a lot of steel waste... there are a number of hazardous wastes that we generate, mainly oil contaminated parts, clothes, rags whatever, by nature of the company we use a lot of oil, that is a problem". Apart from energy and waste the environmental manager does not see there being any other significant impacts on the environment.

Overall the environmental manager does not see the company as having a particularly large impact on the environment and see the business as being fairly environmental friendly, he states that "the company is basically already reasonably environmentally friendly anyway"

Decision to achieve ISO 14001

On why they gained the accreditation the environmental manager states "we are part of the automobile supply chain and being in that supply chain, I think it's fair to say we don't really have an option". He goes on to state that "you've got to be a company that is showing that you are caring about your environment and that you're do everything in your power to have an environmental management system that's certificated by an accredited body to show that you are doing what you say you are doing and so that you are complying to all the legislation and most importantly you care about the environment and they don't want to be associated with any

company down there supply chain that is a) ignorant or b) bloody minded and saying we are not getting involved". Clearly from this manager's point of view this pressure from the automobile industry means that in order to get business you have to have the accreditation, he makes this even clearer by stating "we've had a couple of customers who in their brief to us was "you will be a company operating an environmental management system by a certain time, we would expect you do it in the next 18 months/2 years" or whatever it was. They didn't exactly say we're not going to deal with you but they made it quite clear they would not be happy to continue doing business with us should we not have something in place".

The environmental manager explains how the business initially decided to gain the accreditation "we initially had a visit from somebody who was offering a wonderful (said in a sarcastic tone) computerised procedural system……and this guy happened to come in on day and said I can help you get certified in an environmental management system, ISO 14001 in particular if you would like to sort of come along with me, you will get government funding" The chairman then approach the HS&E manager (who at the time did not deal with environmental issues as part of his job) and asked what he knew about the accreditation and this started the process of becoming accredited.

Process of achieving ISO 14001

As has been stated, the process of becoming accredited to ISO 14001 began with someone from an external company, coming in and offering funded assistance implementing the system. The environmental manager states that although this offered assistance started the process he actually used another support organisation called BusinessSustain who he had used when he worked at another company , he states "I decided to go back to the company I had dealt with before which is called BusinessSustain, they are a company who are in league with Coventry City Council and they do environmental consultancy, which again is funded through the accelerate programme", he goes on to explain how this help is actually driven from part of the automobile industry stating "Ford driving environmental improvement programmes through the supply chain….to go out and look at all of the SMEs that were supplying the Ford Motor Chain…..we're in the supply chain to Ford indirectly through Jaguar so we had that offer to physically come in and set up an environmental management system".

According to the environmental manager the process of getting ISO 14001 was made easier by his previous experience of implementing the accreditation, he explains "my previous company had actually gone through the same process with some of the same people so to me it was like a repeat exercise. Importantly for me the company I had worked with previously was a pressing company of a similar size, owner managed, nothing was really different, everything was like a replica of what I'd been through before, so it was great".

The manager does not take on the environmental aspects of the company alone, he has set up an energy team, he describes this team as consisting of "the people that can make a difference and make decisions about things. We've got the electrician , we've got the technical manager, the technical director, myself and an energy consultant from BusinessSustain, who was the same guy I used five year I used to do the consultancy down at my old company".

As well as having ISO 14001 the company already had TS 16849 which is the automotive industry's quality standard, this incorporates ISO 9000 quality accreditation which they already had achieved several years ago. When asked if having these quality systems in place had made it easier to achieve ISO 14001 the environmental manager replied with a negative, he stated "we discussed integration of the two systems but we felt at the time, my experience of it previously was to keep it separate, so we thought well we won't rock any boats and confuse anyone on the shop-floor trying to get them to take it a step further, at that stage we decided that we would keep them separate". The manager could not see that having ISO 9000 and then TS 16849 in place made it any easier to get ISO 14001, but was now looking to integrate the two systems explaining that "we've got to because BSI are pushing us to integrate the two systems because they see the overlap and we are duplicating things and we have got to look at integrating the two things".

Challenges of achieving accreditation

The environment manager states that there were significant issues that had to be addressed to get ISO 14001, one issue is described as "we've got a fairly disastrous situation in what we call our yard, where all our scrap bins with oil and water contamination…….we've got a couple of metal skips in the yard, two large roll on roll off containers that we put our metal cuttings in. We buy

metal in coils then it gets fed into a press then you cut out of that strip whatever you need to make the component, then there's waste which gets put into a scrap bin. Much of that material that goes into the scrap bin has oil in it, soluble oil in many cases, they are both open to the elements, when it rains we have a river of white water running down the yard, into the street and into the drains, which was not good news so we had to do something about it". In order to address this issue the environmental manager states that they "did a lot of investigation into what can we do, can we cover over the yard, can we put some canopies over the two skips. In the end we got a company in and they said they had done something similar to this before, basically they put a channel, gully all the way round the bin, what comes out leaches out of your bin, runs into the channel, the channel runs into an underground subtask that gets fed into a tank and then every now and then when it gets full up someone comes in and take it all away". This challenge was not just a challenge in terms of complying with environmental legislations but also in terms of the expense, the environmental manager states "it cost us a lot of money but it could have cost us a lot more had we been fined". The manager states that it cost about twenty thousand pounds to make these alterations.

ISO 14001 has meant that environmental issues are higher on the management's agenda and there is progress in reducing their negative impacts, he states "I did mention it about three years ago that we ought to look at the compressed air set up here but at that time there were other fish to fry, lot of expense and they said no, but this time round, with the help of carbon trust with interest free loan and the savings that we could make in terms of not having to service seven compressors, but only one that was saving the company in the region of about two and a half to three thousand pound a year... it was a no-brainer for the management team, as soon as we put that to them, they said right do it, and it went ahead straight away, we did it".

A final challenge discussed by the environmental manager has been looking at their supply chain and trying to work with their suppliers to try and reduce their environmental impacts, he states "I've sent out some letters to some of our suppliers, smaller suppliers who have said we're not doing anything at the moment, so I've asked questions like "Why not?", we don't think we need to or we can't afford to and we're only little anyway so it doesn't affect us". The manager states how important they view the impact of their supply chain as and discusses the ways in which they are helping their suppliers by stating "some of the smaller ones, bit naive, bit reluctant, or can't

afford, or think they cannot afford and we've obviously tried to help them in some way, we've pointed them in the right direction, and said look we didn't pay for it all, we got a lot of it funded, the help that we got, so why can't you get it".

Benefits of ISO 14001

The environmental manager sees there being several successes in the business due to ISO 14001 being implemented, one example being "some of the things we've already done in terms of energy is we had seven/eight compressors in the company…….. The manager demonstrates just how big a success this has been by stating that "we reckon we should get in the first year about six thousand pounds saving, we reckon about three thousand pounds worth of energy savings thereabout and as I say three to three and half thousand worth of servicing savings".

The environmental manager also states what the benefits are of changes made to the waste skips in the yard, he states "this is to do with water pollution, if we hadn't have done then we could have been fined up to fifty thousand pound" This was seen as a real risk, especially with this year's heavy rain "there was one stage when we were having our thirteen and a half litre tank emptied every two or three weeks with ninety percent water cause it was contaminated with water".

The manager was also able to see that ISO 14001 gave them a competitive advantage when it came to generating new business, he states that "when we go for new business and we tell them we have got 14001 we are the type of company that most of the potential new customers would like to be associated with, so that in itself is great". He emphasises the importance of the accreditation in generating business by stating "it has a distinct advantage, especially getting new business and obviously retaining the existing, cause although probably 5 or 10 years ago companies have been told they would have to get ISO 14001, a lot of companies have gone you're not going to threaten me, you don't do it now and they do take it off you, because they only want to be associated with companies that are genuinely wanting to be environmentally friendly".

As well as new customers appreciating the fact they have the accreditation, he also identifies that various stakeholders view the accreditation as important, he discusses how "stakeholders that we have in this business are happy that they are not going to be told all of a sudden that (names company) has been shut down cause they have just polluted the whole of Birmingham's water supply, so all of those sort of issues, you know, your neighbours, your shareholders, all of your stakeholders are happy that we have business systems of some description in place that basically says to the world that (names company) are under control".

As well as benefits financially, the manager feels that ISO 14001 has resulted in a significant reduction in their impact on the environment, he reiterates how they "were regularly polluting the water courses, we don't do that anymore, we've got it under control. So yeah that was one of them, obviously having the compressor in terms of energy that's a fairly large change in terms of energy savings"

Experience of environmental legislation

The environmental manager describes environmental regulation and legislation as "its easy, ummm its fairly straight forward, if you put something in place to control what you need to comply and you've got reasonable disciplines in". The only main problem they have faced is with one particular piece of legislation, he goes on to discuss that "hazardous waste has been a bit of an issue as we have got one or two items that are difficult to categorise in terms of the European waste catalogue numbering system, we had a few problems on that, nothing really, I mean that was the major one".

In terms of complying with ISO 14001 views auditors as "pretty good, very practical…….I find them very, very good really, they are not here to knock you over the head when things aren't going as they should be, they are very helpful, they understand, they give you time to do things cause at the end of the day they want to encourage people to be environmentally friendly, the last thing they want to do is go down knocking everyone down and making them think well why should I bother".

Support

Without the help of one of their consultants, the environmental manager feels it would have been very difficult to gain the accreditation, he states that "it would have been very difficult, because having somebody [BusinessSustain] that is programmed to come in and you know you're stuck with them for 5 hours, 6 hours... you need to have somebody driving you, cause in this type of industry there are lots of people with lots of hats on and it's easy to get distracted and not focus on the thing that you should be focusing on".

The only other organisation that gives the business any hands on support is E9, the organisation who first suggested they try and attain the accreditation, but this is not anywhere near as much hands on support as is given by Business Sustain. The environmental manager has had no support from Groundwork, although he has heard of them and gets literature from Envirowise which he puts in the staff canteen for the employees to read, should they wish to do so.

Factors motivating and/or enabling company H to attain ISO 14001

- pressure from customers
- availability of external support and expertise
- manager's previous experience of ISO 14001
- compliance with environmental regulations and avoiding possible fines

3.1.9 Summary of SMEs with ISO 14001

Overall, the above narrative accounts have demonstrated the differing accounts of how this sample of SMEs have attained ISO 14001. The below figure gives an overview of the various factors that have motivated and/or enabled them to attain ISO 14001. In the data analysis chapter these factors will be discussed in detail and a model will be developed to highlight which are the most significant factors.

Figure 14: factors that motivated and/or enabled companies A to H to attain ISO 14001

	A	B	C	D	E	F	G	H
Pressures from customers		X	X	X	X	X	X	X
Already attained ISO 9001	X	X	X	X			X	
Previous experience of ISO 14001	X	X	X					X
External support and expertise	X	X	X	X		X	X	X
Top management commitment	X				X			
Presence of "green champion"				X	X	X		
Compliance with legislation		X		X		X	X	X
Financial savings		X			X	X	X	
Highly engaged workforce			X					
Potential marketing tool				X		X		

The above table demonstrates that by far one of the most common experiences of these SMEs is pressures in some form from their customers to attain ISO 14001. Also equally common amongst the same number of SMEs is the role of external support and expertise in motivate and/or enabling the companies to attain ISO 14001. The other factors demonstrate that different SMEs have faced different motivations to attain ISO 14001 and have faced different challenges to become accredited. Over 50% already had ISO 9001 and the same percentage found compliance with legislation to be a significant challenge. Only 2 of the companies saw it as a potential marketing tool. These findings will discussed in detail in the data analysis chapter where the common themes of the process of these SMEs attaining ISO 14001 will be identified and the main factors that motivate and/or enable these SMEs to get ISO 14001 will be identified.

3.2 Narratives of SMEs without ISO 14001

3.2.1 Company I

Overview of company

Company I is a small supplier of water-based protective coatings with 35 employees. The interview was conducted with the Managing Director. Their product is primarily aimed at the construction industry and protects glass from being scratched during construction, other sectors

they sell to are the automotive, aerospace, nuclear industry. Last year the company had a turnover of approximately £350,000, the Managing Director expects this figure to double in the following year.

Awareness of environmental impacts of company

The Managing Director of company I had a reasonable level of awareness of the possible environmental impacts his company had. He begins by discussing how the product they supply is a more environmentally responsible then alternatives products "we made a very conscious decision to only deal with water based acrylic products" and goes on to state that disposal of the product once it has been used is the main environmental impact for them, he states "once the product has been used, certainly with the construction industry there is a big issue surrounding the disposal, so whilst we can guarantee the product will biodegrade within a certain period, what we have ensured is that it minimises the volume of waste".

The Managing Director explains how the manufacturing of their product is done by a US based company, in terms of the environmental impact of the manufacturing practice the Managing Director makes it clear that he does not see this as being their responsibility "with us only being a small company and only really having storage facilities here, our manufacturing is all done in the United States….as far as productions concerned, they obviously take the responsibility for any environmental issues associated with production of any form of chemicals or chemical products, so our responsibilities sit with the storage".

When questioned of whether they were aware of the US manufacturers environmental policies the Managing Director admitted that when they first started the business it was not a major concern for them "not at the time I must confess, there's a hell of a lot of things you have to take on board when you are establishing a new business". He goes on to state that there is little they can do about the environmental practices of the US manufacturer, he states "we are kind of dictated to by what the Americans do, they manufacture our product for us, yes we monitor what they do, yes we are reasonably happy with what they do, otherwise we wouldn't still be working with them as our major or only supplier".

Experience of management systems

Whilst they are not fully aware of the environmental policies of the US manufacturer, the Managing Director states how the traceability of their product is still important, but this tends to be more with the quality systems in place rather than environmental systems "traceability actually ties back to our quality system more than our environmental policy, traceability is very important". In terms of a quality system Company I has just achieved ISO 9001 and describes the process of accreditation as "very easy". The reason they decided to work towards this accreditation was that they felt it was a necessary criteria for getting business, the Managing Director states "we initially joined the Federation of Small Businesses and having looked at some of the other members, nationwide, I also noticed that the majority of them that operated in a similar marketplace to us also carried 9001……I think in terms of perception from likely clients, existing clients then I think it was a good move and a move we had to make to ensure we got a continuity of work". Overall, the Managing Director sees the process as short and straight forward "minimal amounts of work required and we achieved accreditation within a period of about five weeks".

Customer pressures

Their customers have some demands on them regarding their environmental performance, however this has not included the requirement of an environmental management system, such as ISO 14001, the managing director states "when we do undertake subcontract work for the larger contractors, we obviously have to sign up to... certain environmental responsibilities that go along side quality, that go along side risk, that go along side health and safety, but we have to certainly sign up before we've even got the subcontract to certain environmental responsibilities". This has lead them to produce an environmental statement to satisfy their customers' demands and the Managing Director claims this statement is not just a statement but has a real intention, he states "we've had to extend in written form our environmental policy to satisfy even getting an early looking at getting work with them, I'm not saying we have paid lip service to it, 'cause we have taken it very seriously, but we certainly had to put more meat on the bones of our initial environmental statement".

Experience of environmental management

As far as them actually trying to achieving ISO 14001, the Managing Director states that this is something they would like to do and states that all businesses irrespective of size should do so, he states “I do think they should take responsibility for their environmental actions, which includes accreditation”. The Managing Director also states that he feels that ISO 14001 will become a requirement to do business in the industries they work within, he states “I think if you looked at the larger construction companies they won’t go anywhere, can’t go anywhere without a decent and thorough EMS and as I mentioned before, to work as a subcontractor to them, irrespective of trade, I don’t think you will find that many small subcontractors will get work in the very near future, and rightly soon”.

Barriers to attaining ISO 14001

Having the available funds to achieve ISO 14001 was the one major challenge preventing them from doing so according to their Managing Director, “assistance with funding that would be helpful. I don’t think we need much assistance, I think we are aware enough certainly of what we need to do and are already doing, so I really only see it as a funding issue”

The Managing Director states that he is not aware of any organisations such as Groundwork or SBEN that offer assistance with environmental management except for the Federation of Small Businesses, when asked if he has received any literature from such organisations he states “no we haven’t, that’s purely down to the fact that we haven’t turned our attentions to it yet, once we do then we will get assistance in from whatever body is most qualified to do so”. Part of the reason for this lack of awareness is perhaps down to the fact that they do not receive any information from these types of business support organisations “no we don’t, we haven’t received anything, we certainly did some time ago with regards to quality assurance, but no I really don’t believe that we have”.

What is clear from the interview is that there is a desire from the Managing Director to attain ISO 14001 and that once the lack of funding is removed they will pursue this, he states “as soon as I

reckon there's the level of funding in place then we will do it and we will make sure we do it thoroughly"

Overall, the Managing Director seems to have a fair appreciation of his company's environmental impacts and appears to be personally and commercially motivated to achieve ISO 14001. However it is questionable how much of a difference this would make to the business and their products' environmental impacts as the Managing Director acknowledged in the interview that their product would continue to be produced by the US manufacturer and they had little influence on this business' environmental performance or management systems.

Summary

- managing director has some appreciation of companies environmental impacts
- company does not actually manufacturer its product
- recently achieved ISO 9001
- no customer pressure for EMS but perceives it will become requirement in future
- main barriers are the financial cost and unaware of support available

3.2.2 Company J

Overview of company

Company J are a small company employing 20 people, the interview was conducted with the Managing Director, who described their main business activity as "we specialise in problem solving in metal working fluids, lubricants and solvent degreasers". As described by the Managing Director the company provide solutions to companies manufacturing problems and then design a product and have it manufactured by one of their suppliers.

Awareness of environmental impacts

The Managing Director made it clear throughout the interview that he felt the company did not have a significant negative impact on the environment, he states "we are very small, because we

don't make anything, we get stuff made for us... as a company we have a small footprint I guess". However he does go on to describe how the products he supplies are not particularly "environmentally friendly", he states "they are hydrocarbon or crude oil sourced, we do very little what you would call renewable products so most of them are derived from crude oil in some way or another".

The managing director states that of the three manufacturing companies they use only one has environmental policies in place, he stated "one of them has environmental policies because it works with some of the larger multinational companies but the main two I use do not have environmental policies" and according to the managing director the one company with environmental policies was not selected because of these policies but because of their quality systems.

Experience of ISO 14001

On company J's website it stated that they were interested in obtaining ISO 14001 and that they would be happy for any assistance with this, when asked about this the Managing Director played down their motivation for ISO 14001 stating "when I set up in business I had worked for a company, a larger company and I had dealings with larger companies if you like, and ISO 14001 seemed to be a driver in the industry, so I just made a point of putting it on the website".

Customer pressures

The Managing Director was then asked whether or not customers enquired whether they had ISO 14001 and he made it clear that it has not been asked of them, he states "ISO 9001 comes up but 14001 doesn't". He goes on to discuss how even ISO 9001 is not a prerequisite for most of their business stating "I would say 30% of my customers want to know that the products are being manufactured by someone with ISO 9001, so I mean we had an order yesterday and on the order sheet it actually said these must comply with ISO 9001, but even that isn't as common as you would expect". Company I do not have ISO 9001 themselves however the manufacturers who produce the products the company design do, he feels that ISO 9001 is essential for the manufacturers but not for him who just solves problems and designs the problems.

The Managing Director makes it clear due to the nature of their business they do not need and do not see them needing in the future ISO 9001 or 14001, when asked to discuss in more detail if he felt customers may make it a requirement of doing businesses with them, he replied “not at the moment, no, I can’t see it happening, I'm not sure what major companies require it, Ford for example may require it and we supply one Ford Q1 supplier and to be honest they haven’t even enquired if we are 9001 accredited, they had a very difficult lubrication problem and they are just happy for our help”. Another example is of work they do for Rolls Royce, the Managing Director states “we are doing a project for Rolls Royce at the moment and they haven’t asked if we are 14001 or 9001 or anything all they want to know is can I solve the problem”.

The only way the Managing Director feels the company would go for ISO 14001 would be if a major customer demanded it and it was financially possible and worthwhile, although he does not feel this will occur, he states “we would do it if for instance we are approaching (names larger company) if they came to us and said if you want to be our supplier you have to be 14001 then we would look at the cost and conditions of doing that but we haven’t even had any discussions with any of our customers in that line at all, none of them have shown the slightest interest in whether we have 14001”.

Barriers to attaining ISO 14001

The managing director makes it very clear that the main difficulty is the cost of doing it, he states “it’s the actually physical cash cost and also the maintaining the systems when they come to audit, if I was ever required to do it, I would look to see if it was necessary and worth it or not”

In terms of considering ISO 14001 the Managing Director states that they have not been approached by any business support organisations offering assistance, he states that Envirowise is the only organisation of this type that he has had contact with and that was for a particular issue, he states “Envirowise I’ve come across……we have talked to Envirowise once or twice about questions associated with particular products, but we haven’t discussed 14001 in any way”.

Company's view on environmental responsibilities of business

Overall the Managing Director appears to be fairly aware of environmental issues and does feel that some action is needed by businesses in reducing their environmental impacts, he states that "I think there's a place for being more environmentally friendly, but my gut feeling is that if everybody started using vegetable oil instead of mineral oil as a cutting fluid medium, it would just put the price of vegetable oil up and I know with biodiesel you can't grow enough rapeseed oil to actually power all the cars in the world, you just can't do it, so I think there's got to be a balance, it's got to be more than just doing it cause it looks good".

The way he feels that businesses should become more environmentally responsible is through the Government taking action and states that it needs to be on a level playing field as demonstrated by the following statement "I think it has to be government led, and almost international led cause that gives you a level playing field, I know of a company that moved from South Wales to Poland, they were omitting 500 tonnes a year of VOCs in South Wales and wouldn't be able to now but they're still doing it in Poland without any problems and that's why they moved, because to have met the requirements in the UK the just wouldn't have been able to do it".

Summary

- managing director views company has having very little impact on environment
- company does not manufacture its products
- no customer demand for ISO 14001 and feels it unlikely will affect them in future
- they do not have ISO 9001 but companies who manufacturer their products do
- main barriers are financial cost and unaware of support available

3.2.3 Company K

Overview of company

Company K are a metal pressworks company who employ between fifty and fifty-five employees. The Managing Director describes how he has been running the business since 1990,

he states that it was “the result of a management buyout, which is by myself and my partner, so we took the company on and its probably about ten years ago or so we got some fortunate breaks if you like and we changed direction for where we were going and as a result the company is now exclusively presswork, so we make presswork components 98% for the automotive trade”. The Managing Director describes the management structure of the company as “very flat” he goes on to describe this management structure stating “there’s two directors, I’m the MD, my father is the finance director and then we basically have about five, six members of staff that runs the business”.

The business has grown recently but states how being profitable is now more of a challenge, he states “once on a project I could make thirty percent profit, now I’m lucky to make five percent….you’ve got to now work twice as hard to make the same money, it’s not an easy life by any means”.

Experience of accredited management systems

When questioned about standards the business had achieved the Managing Director made it clear that for this company it had been a necessity to obtain quality standards, he states “we’ve had various quality standards, the first one was the BS 5750 [now known as ISO 9001], we got that about eight, nine years ago. The more recent one which is TS 16949 we just had our three year recertification this year; that is the highest automobile standard you can get”. He then describes how they have been a requirement of getting customers’ business stating “if you didn’t get it you couldn’t get the work, in some cases you couldn’t even go for the work, some were a bit more pedantic than others but it very much effected what customers you could supply”.

The Managing Director states there have been other benefits of having TS 16949 other than getting new and maintaining existing business, he states “we’ve been more organised on how we control ourselves and how we review what we do, in terms of our key performance indicators, how we look to try and constantly improve what we do”.

The Managing Director feels “pretty positive” about their quality accreditation with one of the main negatives about it being the cost of the auditing process, he states “some of the assessments

are quite expensive; I think this year we spent three and a half, four thousand pounds on BSI, the guys are not cheap".

Experience of ISO 14001

The Managing Director was then questioned about whether the company had experienced any pressure to get any other standards and the only one mentioned was ISO 14001, he states "there was quite a lot of pressure a few years ago but it went off but is starting to come back now and we are starting to go down the route of thinking about it now". When questioned further about why the company did not attempt to achieve the accreditation the Managing Director stated that "the pressure went from customers, they said as long as you are going to go for it, that will do, so there was a surge in environmental things and that is starting to come back again, everyone wants to be green and reduce carbon footprint and all that crap".

Awareness of environmental impacts

When discussing their current environmental performance, the Managing Director states that he feels the business has a "very small impact". Their biggest impact according to the Managing Director is waste, which he states is recycled, he explains "we probably produce around two hundred tonnes a month of scrap metal and all that goes back and gets recycled and that is our biggest waste".

Experience of environmental regulations

The managing director states that he doubts that they comply with all legislation stating "I feel we don't comply with them all, of that I'm fairly certain, but equally we don't have too many issues either because we haven't got any particular harmful processes, I mean a bit of oil here and there is about our biggest problem". One environmental legislation that they do attempt to comply with is the REACH initiative however, the Managing Director demonstrates some contempt for this legislation feeling that perhaps it is not as relevant for them as a small manufacturer of part for the automobile industry, he explains that "we try to comply with legislation like REACH, to completely dispose for small pressed nuts stuff, this might have an

effect when the cars disposed of, really? I don't think so, it's just ridiculous, we have taken it to far extremes, it's just another raft of legislation".

When reflecting further on environmental legislation the Managing Director states that he finds certain aspects of what is expected of them as unfair, he explains that "I tend to feel what's unfair is the fact that so much work had gone through to Eastern Europe and China and I know for a fact that they haven't got the same level of legislation that we have to contend with and that makes it even more difficult to compete with".

Prospects of attaining ISO 14001

The Managing Director makes it clear that the ISO 14001 is something that they are likely to have to attain at some point in the future and that they have started looking at what will be required to achieve it, his general view of the management system seems fairly positive although he also acknowledges that "there may be more to it then we think, but I'm not necessarily a great believer that you need to gold plate everything, do enough of what you need and try and be sensible about it". He goes on to explain that ISO 14001 is "like a lot of standards, it depends how far you want to go with it, you can do anything in the name of a standard, whether you need to do it is another story, that's the tricky bit cause there is a level of interpretation required, whichever way suites you to some extent".

Barriers to attaining ISO 14001

The main challenge to not attaining ISO 14001 appears to be the unknown financial costs as well as other resources, the Managing Director states "there will be some costs; we will have to do a few things around the place that might cost anywhere between five and twenty thousand pounds or something, also some time and effort we will have to put in". Compared to their main competitors the Managing Director states that "we are a bit behind on 14001".

Perception of benefits of ISO 14001

The Managing Director does have some idea about perceived benefits of the accreditation stating

“hopefully identify possible ways of saving energy, which reduces costs and the rest of it”, “we will look at ways of reducing waste”. When asked if he felt there was any support from the automotive industry in achieving ISO 14001 he replied “absolutely none at all”.

Views on businesses role in addressing environmental issues

One of the most interesting aspects of the Managing Director is his honesty regarding his attitudes towards the environment. When discussing his personal views on businesses and environmental performance he made it clear that he does not believe that business can have that significant impact on the environment stating “I’m probably not the most politically correct when it comes to environmental issues, I tend to think a lot of it is vastly overrated and vastly overstated, I don’t believe that scientists are always right”.

He also feels that his own business can have very little impact on the environment, especially in the industry they are in, he states “I’m not going to have any significant impact, I mean unless they want to redesign cars with different engines, change public transport set-ups, what am I going to do?.....I make stuff for cars, they are not good for the environment supposedly”. As the Managing Director of a small manufacturing company his focus is clearly on the financial side of things, he states “this is the way I make a living and this is it, fair enough” however he does acknowledge that his view is becoming the opposing one to the norm, he states “you seen as a bit of a dinosaur if you don’t agree with it”.

Overall, the Managing Director of this company makes it very clear throughout the interview that they have not achieved ISO 14001 because there has not been any maintained pressure from their customers. He seems to have some a fairly limited appreciation of what obtaining ISO 14001 entails and what changes will be required to their business he also is not aware of the range of support that is available. What is clear is that the Managing Director’s priorities are to the financial survival and success of the business and acknowledges that the business is likely to have to adapt and obtain the accreditation in order to maintain their customers’ business at some point fairly soon in the future.

Summary

- managing director perceives business to have small environmental impact
- company has ISO 9001 as well as automotive industry quality standard
- has experiences pressure to get ISO 14001 in the past
- perceive it likely they will get ISO 14001 at some point in future
- perceives there to be potential benefits from efficiency savings
- barriers to attaining ISO 14001 are unknown financial costs and unaware of support available

3.2.4 Company L

Overview of company

Company L is a manufacturer of steel wiring. They are based in Birmingham and have been trading for 60 years. They have 21 employees with the business being owned by a family with a 90% stake and the remaining 10% stake being owned by ex-employees. The interview was conducted with both the production manager and the quality manager.

Experience of ISO 14001

Company L has achieved ISO 9001 but not ISO 14001. The quality manager states that they have had a quality management system for around 20 years. When asked whether they have considered ISO 14001 the production manager states "we are looking at environmental 14001, we've been going for it for 4 years now and we are actually doing everything that needs to be done, bar we don't audit, so it's just a case of putting the audits in and we've got it, but we've not got round to getting auditors in".

In terms of the amount of work that has been required of them in working towards ISO 14001 the production manager states that "a lot of work really, we've invested quite heavily in making the place safer, health and safety ties in with the environmental, bunding areas your making safer for

the employees. Quite a big investment I'd say. If you looked at our impacts and aspects they'd show a big increase in what we've done".

Having already achieved ISO 9001 has made the process of them looking at ISO 14001 easier with the production manager stating "it's kind of the same work as you have to do for 9001, just you add on".

Experience of environmental regulations

The production manager states that the process of working towards the environmental standard did not raise any significant issues with non-compliance of environmental legislation "I don't think there's anything that we've had to change, we've had emissions testing to make sure we weren't polluting the air, think everything else has been ok, we haven't had to rush out and spend money to put anything right".

Customer pressure

The quality manager states when discussing why the business considers obtaining ISO 14001 "where people ask what standards you hold…..people just tend to add on 14001 now, if you haven't got it do you intend to get it and in what period?". The production manager adds to this "we just thought it necessary with the line of work we're doing".

Being a supplier for the automotive industry means that there are expectations for them to have various accreditations and standards, the production manager states "we've always been asked about things like TS and things like that, that's the automotive standard and we don't really think we need to go for that and it was a case of, it's for first tier suppliers which we are not, when you go for things like this it gets everyone's minds going and that seemed to be the next logical step". He goes on to explain how they themselves have not yet felt this pressure to the extent that they have got the automotive quality standard "there are a lot of customers who supply the automotive trade direct, they are kind of forced to get their suppliers on board.....we've decided we are definitely not going down that route, it's far too big for a company our size".

Barriers to attaining ISO 14001

The main reasons that the company does not have ISO 14001 are issues to do with personnel, the quality manager states “I left to have a baby, so it went on hold then and it's not really kicked off since I’ve got back”. There have also been issues with consultants who were brought in to implement the management system as described by the quality manager “we used consultants, they were going to come in and look at the final piece of the jigsaw, the audits, cause he came in, looked round and he said I can’t see why you haven’t got it, we said because of the audit. He was meant to come in 2 months ago and we haven’t heard from him since”.

In implementing changes both managers admitted that there was some resistance from staff with the production manager stating “at first when you decide something, with industry people they get stuck in their ways and then hardest thing to do is to get people on board”. However the quality manager adds that their size helps implement changes as “because we are a small company everyone knows what’s going on”. The production manager adds “they all know they are important, every bit of training is an investment in them”.

Whilst the company have looked at the environmental impacts they acknowledge that there are limits to what they can achieve, one example the production manager gives is “we’ve got a pickling plant and idea is we have to wash down rods and various processes so we get a lot of waste, wash water away which we neutralise then put down drains and the hazardous waste gets taken away, but we would like to be recycling the water, rather than go down drain be using it again. But that’s a big investment so if people out there who can help with that then we would be interested”

The need for financial assistance for these types of investments is highlighted by the difficult financial environment the company is currently in with the production manager stating “just raw material this year has gone up 40% for us, and that’s without our electricity”

Experience of external support

The main support they have received on working towards their environmental performance has

been from consultants at the start of the process, they were able to get this support through funding from Business Link (a government funded organisation that support SMEs in various aspects including environmental management). The other main use for consultants has been to assist in making sure they are compliant with legislation, the production manager states that "they do health and safety policies and the legal side, for a couple of grand a year you can get something done rather than employing someone". When asked if they have heard of support organisations such as Groundwork, the production manager states that they have not.

Summary

- company has ISO 9001
- has looked into and started process of achieving ISO 14001 in the past
- experienced some pressure from customers
- some experience of subsidised external support but unaware of many of them
- perceives that they will eventually attain ISO 14001
- main barriers are the about of human resource required, engaging employees and the financial costs of making improvements to their manufacturing processes.

3.2.5 Summary of SMEs without ISO 14001

Overall, there are various common attitudes and experiences of these SME managers and there are various factors acting as barriers to the firm attaining ISO 14001, these are summarised below:

Figure 15: Characteristics of SMEs without ISO 14001 and factors possibly preventing them from attaining it

	I	J	K	L
Manufacturers own product			X	X
Has ISO 9001	X		X	X
Experienced customer pressure to get 14001			X	X
Perceives will become requirement for customers	X		X	X
Perceives financial cost as barrier	X	X	X	X
Perceives manpower required as barrier				X
Perceives will get ISO 14001 in future	X		X	X
Manager has previous experience of 14001		X		
Unaware of support available	X	X	X	

The above table shows that of the 4 SMEs 3 had ISO 9001 and that these three all felt that at some point, ISO 14001 will become a similar norm and requirement for them to do business with their customers and the 3 of them therefore all think that they will attain it at some point. The difference with company J may be because they are highly specialist in what they do and that they do not themselves manufacturer the individual products and solutions they sell to their customers. Whilst company I does not manufacturer it's product, unlike company J it does have one main range of products that it can be easily identified with and that these products can more easily be scrutinised for their environmental credentials.

The common barriers for these businesses were the perceived financial costs and that most were unaware of the support available. Even company L which had used assistance that had been subsidised did not have a great awareness for many other support organisations. The only company that perceived the human resource to be an issue was company L, this may be because they are the only ones who have attempted in the past to implement ISO 14001 and therefore may have a better understanding of what is involved. A more detailed comparison and analysis of these SMEs will be undertaken in the following data analysis chapter.

4. Data Analysis

Following on from the company narratives, this chapter will compare those SMEs with ISO 14001 and compare those SMEs without ISO 14001. Common factors within each group will be identified and then the two groups will be compared to identify reasons why one group have got ISO 14001 whilst the other have not.

The aim of this chapter is to enable the research to demonstrate whether the factors identified in the model developed in the literature review (figure 8) are present within this group of SME and responsible for some gaining ISO 14001. Specifically, the analysis will focus on factors that led the 8 SMEs to attain ISO 14001 (e.g. supply chain pressure and/or internal leadership) for the purpose of identifying the motivating factors and will investigate the process of attaining ISO 14001 to identify potential barriers and the resources required by the businesses to overcome them (e.g. finances and/or fear of prosecution) for the purpose of identifying the enabling factors. The group of SMEs without ISO 14001 are compared to highlight whether any of these have faced similar motivating factors, and if so why they did not act upon them and assess whether there are certain resources and enabling factors that they do not possess and if this is what is preventing them from attaining ISO 14001.

The chapter will finish with a number of examples of external support organisations that have been engaged with a number of these organisations and an example of a large customer of several of the SMEs involved in the study which has been perceived to exert pressure on its suppliers for them to attain ISO 14001. The aim of these examples is to look in more detail and to add context to two of the main factors that were found to influence whether an SME attains ISO 14001.

The final chapter that follows this one will identify how the findings from the data analysis compare to the existing literature and research and the implications for this study's findings.

4.1 Comparison of SMEs with ISO 14001

Now that the each SME with ISO 14001 in the research sample has been discussed in terms of their motivations for attaining the environmental standard, the process, the challenges and the

benefits and effects ISO 14001 has had on the business, a comparison will be made for all eight SMES.

This comparison will look at the main issues that have been identified in the previous section and will look to see if there are common motivations, challenges and benefits for all of the SMEs or see if they have had different experiences of and attitudes towards ISO 14001.

This comparison will look at the manager' from the various SMEs awareness of their business' impacts on the environment, the process of accreditation; possible business benefits of the standard, the effects it has had on the business activities and finally look at the main factors that have motivated and/or enabled the 8 SMEs to achieve ISO 14001 accreditation. Therefore, this section will look to address the main aims and objectives stated in the introduction and enable a comparison to be made with the model developed in the literature review.

4.1.1 Awareness of SMEs impacts on the environment

The managers of the SMEs with ISO 14001 demonstrated varying views of their business' impacts on the environment. Of all the SMEs the manager from company C (the land information service company) saw his business as having the smallest impact on the environment. Due to the company being an office based workplace and not a manufacturing plant he did not see there to be any significant negative impacts on the environment. This is despite company C being the largest SME in the research sample. Although when questioned about their impacts the manager did state that he saw the potential impact all SMEs could have as a group but he continually reiterated that his business had very little impact on the environment. This was despite him also stating various ways the company had made changes and improved their environmental performance.

Companies A (metal sanitary ware manufacturer), D (electrical wiring manufacturer) G (metal roofing manufacturer) and H (metal pressing works) all had similar opinions of their business' environmental impacts. They were all able to state what impacts they had but their opinion of their impacts was limited to just one or two sources and they all viewed their businesses as

having very little negative impact on the environment overall. The manager of company A when questioned about their impacts stated packaging as their main one, company D identified their use of solvents and electricity, company G only saw their use of oil as an impact on the environment and company H identified energy as their main impact and waste as another impact.

The manager of company F (print management company) had a clear idea about what their main impact on the environment was, stating hazardous and non-hazardous waste disposal and also stated that they had set targets and objectives for reducing these impacts. The manager although clear about this main impact did not identify many other impacts nor state other ways in which the business could improve their environmental performance. Overall, the manager from company F saw their environmental impacts as being proportionate to their size, which is small.

Only two of the managers had definite ideas of what their business' environmental impacts were. These were the managers from company B (paint manufacturer) and company E (adhesive and solvent manufacturer). The manager from company B stated waste (hazardous and non-hazardous) and emissions as their main impacts. He was even able to state how much waste (in terms of the number of bins and skips) was produced and taken away from the factory and was able to give the figure of 352 litres of VOC emissions. Although he was able to give accurate details of the business' impacts he was not able to identify which impact had the largest negative effect on the environment. The manager from company E was also clear about what the main impacts were and in a similar way to company B this was waste to landfill and emissions and like company B he was able to give figures for both as the measure the tonnage of waste they send to landfill monthly and their emissions annually. The manager from company E states they do this due to the need for a permit from their local authority in order to continue with their business activities.

One possible reason why companies B and E are both the most confident about their main impacts and actually knew how much of an impact they were having may be because of the industry they are both in, having ISO 14001 means that both companies need to comply with all environmental legislation and it may be that in the chemical industry there are stricter regulations and a need to monitor waste and emissions.

The impacts on the environment mentioned by all businesses were fairly limited to emissions, waste and energy use, only the manager of company A used the word "sustainable" and the manager of E was the only manager to mention the phrase "greenhouse gases". It seems that for these managers the focus of their environmental impacts and performance are focused on what they can physically see in their business with issues like waste to landfill and paper usage being the most predominant, this may also be because reducing these impacts brings with it financial savings, which will be discussed later in this chapter.

Overall, the various managers highlight a range of opinions on how much of an impact their businesses have on the environment and some (especially those in chemical industry) show a clear understanding of what their impacts are and how much of an impact they are having. One thing that all of the managers of the SMEs with ISO 14001 seem to have is an interest and in some cases even a passion for environmental issues and reducing their environmental impacts. Those who demonstrated the strongest passions were company D where the manager even called himself an "environmental champion"; company F who's personal interest had driven it's adoption and the business achieving it gave her a noticeable pride in what she had done and finally company E who's manager was very enthusiastic about ISO 14001 and demonstrated a knowledge of the current debates going on within the area of the environment and was sceptical about the emphasis placed on CO_2 emissions and climate change.

These findings add to the consensus of previous research that SME managers regard the environmental impact of their company to be proportionate to their size. This will be discussed further in the discussion chapter.

4.1.2 Process of achieving ISO 14001

A significant amount of time in each of the interviews was dedicated to discussing the process of achieving ISO 14001 by the various SME managers. It is crucial to do this as it sheds light on what issues and challenges they faced and how they overcome this. This will help to better understand the factors that enabled them to achieve ISO 14001 and therefore support the objectives of this research.

The company narratives of those SMEs with ISO 14001 show that there were a range of challenges that had to be overcome by many of the SMEs in the process of implementing the environmental management system and in being audited and becoming accredited. The main challenges in the process were: the demands on the businesses resources, the need for and availability of expertise; the challenge of conforming to environmental legislation, their experience of the auditing process and attitudes of employees and the culture change required. Each of these will now be looked at individually:

4.1.2.1 Demands on resources

Almost every SME interviewed who had attained ISO 14001 stated that they had found it a burden on the business' resources. The two main issues being the businesses' finances and manpower. Of all of the companies, company A stated that they had found it most difficult to justify in terms of the finances and time spent on implementing the management system and achieving accreditation. An example of this was seven hundred and fifty pounds they had spent on spill kits which the environmental manager would have preferred to spend on improving production machinery. In terms of manpower, he states that it was mainly his time being used. The reason for company A finding the drain on resources so demanding seems to be due to the fact that the business is not performing well financially and the manager makes it very clear that they would not be able to justify the resources needed if they were to start this process now.

Companies B and G both also viewed time and financial resources as challenges but neither stated that that having gained the accreditation they would not be able to justify it now. Company G estimated that the time taken to gain the accreditation equated around twelve weeks of full time work by various employees.

Companies F and C only saw the financial resources required as a significant challenge for the businesses'. Company C stated that they had limits to what they were prepared to spend in order to make changes to the business and any significant money being spent had to have perceived as having a business benefit. Company H demonstrated significant investment in reducing their environmental impacts, this was identified as being one of the most significant challenges to gaining ISO 14001, however the manager in charge of ISO 14401 was also able to demonstrate

how these costs were justified to the management team and was able to identify the payback time. The manager from Company F acknowledged that they had made a significant investment in the process of achieving ISO 14001 and had not yet recuperated that money in savings and new business. In Contrast company E did not see the financial cost of ISO 14001 as a significant challenge but did acknowledge that the manpower that it required was a burden on the business.

Company D was the only company that did not see there being any real challenges in terms of the finances and manpower required to gain ISO 14001. The environmental manager puts this down to the subsidised support they had access to and the fact that he saw the business as very clean in terms of their environmental impacts. In terms of the manpower and time required by company D to gain ISO 14001 the environmental manager did not see it as too much of a burden as he took on this role and he was the one who started the process.

Overall it is clear that ISO 14001 at least for all but one of these SMEs is seen as having significant costs in terms of the finances and manpower required to achieve it. It is also made clear by a small number of the managers that in order for their business to be able to take on ISO 14001 they had to be able to perceive clear business benefits and financial rewards once the accreditation was in place. The actual business benefits experiences by these companies will be discussed later in this chapter.

These findings are not surprising when looking at the previous research in the literature review which outlines that some of the main barriers to SMEs attaining ISO 14001 were finances and manpower, however, the difference with all of these SMEs were that they did have the money and manpower to do this. Part of this may be down to the fact that they already had the expertise internally or were able to access external support that was not too expensive, this will be discussed next.

4.1.2.2 Role of expertise and support

Through talking to the managers responsible for the 8 SMEs environmental management systems it was made very clear that one of the main challenges they faced was needing a certain level of expertise to be able to achieve the accreditation. The managers discussed three main sources of

expertise; these were experts within the SME, environmental consultants and environmental support organisations which on the whole offered subsidised assistance.

Five of the SMEs discussed individuals (in most cases themselves) who either had previous experience of implementing ISO 14001 at another company or had gained a qualification in environmental management. Companies A, B, C and H had all either themselves or had someone in the management team who had previous experience of the accreditation. Although the manager interviewed from company B had no experience himself of the accreditation he was able to achieve the accreditation partly due to the fact that the company paid for him to gain an NVQ in environmental management. Only one other company had a manager who had been trained in this subject, the manager from company E had studied for a diploma in environmental management, this was seen by the environmental manager as a significant investment by the SME as it cost in excess of five thousand pounds. None of the other managers had received training to this level. For these companies, having someone (often themselves) who had previous experience at a past employer of ISO 14001 appeared to be a crucial factor in them successfully achieving it. The main benefits appear to be that these managers were aware of how the system worked, had experience of the language of ISO (which most stated was not particular clear when you first see it) and for companies C and H, by having experience of ISO 14001 it was easier for them to identify the business benefits of having ISO 14001 which convinced the senior management to go ahead with investing in it.

Four out of the eight SMEs in the study discussed the use of consultants (who were not from business support organisations) in assisting with the process of accreditation. Company C spoke to consultants before they embarked on the accreditation but felt hat the consultants were asking for far too much money. Company G had used consultants before but questioned the value for money you get from them, he viewed them as trying to use a generic template for every business and not being able to develop individual systems for each company, it is only a matter of the value for money that put them off and not the actual cost. Company E had the most negative experience of a consultant who came into the business and when producing the documentation for the SME was clearly just using one that they had adapted from a previous client and it had information about that company on it, they sacked the consultant but this still had cost them a significant amount of money.

One of the most frequent ways consultants had been used by some of these SMEs was in keeping up to date with environmental legislations, this will be discussed a later on in this chapter in a wider discussion of the companies experiences of environmental legislation. Overall, it appears that for those SMEs who have used or just approached consultants they are seen to be either too expensive or not value for money in terms of the service they provide.

By far the most predominant source of expertise for the SMEs in this study were environmental business support organisations. Various forms of this support were mentioned by the majority of managers, the three most frequently mentioned were Groundwork (offices in both the West Midlands and in Stoke), Envirowise and the Staffordshire, Business and Environment Network (SBEN). On the whole the managers who had worked with these organisations viewed them positively. One of the key factors in them being viewed so positively was the fact that they all offer heavily subsidised or even free training and assistance.

For those SMEs who had used support organisations of this type it was clear that they were in some cases the factors that motivated them or their senior management to start the process of achieving ISO 14401 or they were a key factor that enabled them to achieve it due to the support and expertise they offered. As part of the research interviews were conducted with individuals from groundwork, Envirowise and SBEN to identify their attitudes and experiences of SMEs attaining ISO 14001. These are featured at the end of this chapter.

4.1.2.3 Experience of ISO 9001

One factor that made the process of achieving ISO 14001 less of a challenge for some of the SMEs was their experience implementing and maintain ISO 9001. Companies B, C and G had all implemented the quality standard already and found this made it easier when implementing the environmental standard. For companies B and G this was because they were already familiar with the type of language used in the ISO standards and for company C it was because they used the quality standard as the core for ISO 14001 and bolted the environmental activities onto the quality standard. For companies A, E, F and H ISO 9000 was of no assistance due to company F

having started the process of getting ISO 9000 six months after starting on ISO 14001; company A having separate managers for the two quality standards and company E and H due to the fact they both implemented the two accreditations as two parallel systems, although the managers of both companies did state that they are now looking into combining the two systems into one.

4.1.2.4 Compliance with environmental regulations

The company narratives clearly demonstrate one of the main challenges for the SMEs in this study is the element of ISO 14001 which requires them to comply with all environmental regulations. All but one of the SMEs found this to be a challenge to some degree.

The SME who found compliance to be the biggest challenge appears to be Company B, part of the reason for this in the manager's own words is because before they started with the process of accreditation they were a terrible company in terms of complying with environmental regulations and that no one in the company really cared about it. The manager states that it is extremely hard to keep up with changing legislation and that the hardest part of ISO 14001 is the legal register. He also goes on to state that keeping up to date with constantly changing and updated legislation is a significant issue for them. In a similar way companies E and D both viewed compliance as one of the biggest challenges of the accreditation. Company Es director sees complying with environmental regulations as the biggest change to his business and before they were accredited he disclosed (off tape) how they seriously breached environmental regulations. Company D also found that they were not compliant with regulations before going through the process of achieving ISO 14001 and saw dealing with legislations as one of their main challenges and views it as one of the most significant problems for any business going down this route.

Companies F and G both felt that making their business' compliant was a challenge for them but it was not as much as a challenge as for the three companies discussed above. For company F they identified some areas where they were not conforming, mainly the disposal of hazardous waste but these were not seen as being too serious and were not too difficult to remedy. Similarly company G only found that their main non-compliance was the disposal of oil and were able to deal with this reasonably easily, overall their manager viewed them as always being a reasonably

clean business but did feel that complying was not always easy due to a lack of effective communication about environmental law.

Company C found achieving compliance as too large a drain on their resources and sought assistance from Groundwork who produced and maintained their legal register. The manager felt that if they had not been able to get affordable assistance with this element of it then he is unsure if they would have been able to successfully achieve accreditation. This appears to contradict what the manager from company C reiterates throughout the interview, that they do not have any significant impacts on the environment due to the nature of the work they do, i.e. being an office based service provider.

The only companies who did not see complying with environmental legislation as significant challenges were company A and H. The reason for this according to the manager of company A was that the managing director was extremely keen on making sure that the company was compliant in all areas and therefore when the company had an audit done, they found no non-compliances. The manager saw ISO 14001 as a means of formalising and legitimising their compliance. For company H this was because the environmental manager viewed the company as being fairly environmentally responsible and where they were not complying to legislation it was clear what needed to be done and easy to remedy.

Having achieved ISO 14001, it could be expected that the businesses should now be less likely to face the prospect of any environmental prosecutions and therefore this could be viewed as benefit to their businesses. However, this was only the case for three of the SMEs which were companies B, D and G. Companies D, G and H all acknowledged that where ISO 14001 had demonstrated their non-compliances it highlighted how they could have faced possible prosecutions; although company G states that they were already addressing this issue before starting on the process. Company B has seen that the accreditation without any doubt has saved them from a prosecution as part of becoming compliant meant that they had to build bunding areas where they stored chemicals, soon after doing this a fire broke out at the site and if the bunding had not been in place the chemicals would have most likely entered the nearby river and this would have resulted in a significant fine.

Companies C and F had both been non-compliant before and could not be sure if they would have faced any prosecutions if they had not gained ISO 14001, company F stated that regulators before had never informed them that they were not disposing of waste correctly.

The only company to see a competitive advantage of being compliant was company E who having achieved ISO 14001 has now gone on to work towards another standard which goes beyond just compliance. The reason the manager is doing this is that he sees there being an advantage to being one step ahead of legislation and not having to constantly react to new legislation like their competitors.

Company A saw no benefits in terms of compliance after being accredited as they had always been compliant even before they went for ISO 14001.

Overall, a key challenge for these SMEs and potential barrier to many others, is the required of ISO 14001 that the company complies with environmental regulations. The findings back up much of the previous research that many SMEs are unaware of what legislation and regulations apply to them but it also demonstrates how these SMEs have dealt with this issue and in some cases the benefits of doing so.

4.1.2.5 Experiences of the auditing process

In order for a company to achieve ISO 14001 they must successfully complete an environmental audit from an independent third party. The opinions of the SME mangers of the auditing process ranged from it being one a significant challenge to it being a positive experience.

The company that found it the most challenging according to their environmental manager was company C. They had various auditors who have had different responses to the actions of the business and this has left the manager unclear of what is expected of them. The manager also states that they have found demonstrating continuous improvement difficult which has led them to slowing down their progress of improving their environmental performance so that they were able to always demonstrate small change that had occurred between each audit. Whilst they are not the only company in this study who found demonstrating continuous improvement a

challenge, they are the only ones who take on this strategy. The challenge of the auditing process for this company is surprising, as has been previously stated they state and would appear to have one of the smallest environmental impacts of all the SMEs with ISO 14001 and therefore one could have assumed that they would find the auditing process not as challenging as they have.

The manager from company D also stated that they found the auditing process challenging, especially demonstrating continuous improvement. He also found the idea of the auditor talking to any employees from the business (as they can do) worrying and therefore before any auditor is due he places posters around the business reminding all employees what their policies are and what they are doing to improve their environmental performance. However, the manager of company D also demonstrates the importance of the auditing process as he makes it very clear that the only reason they now maintain the standard is for the auditor.

Company E also states that the audits are one of the most challenging parts of the accreditation process and that they have difficulty demonstrating continuous improvement as all of the easier changes or "low hanging fruit" as the manager describes them were done at the start of the process. Whilst the manager states that they are a challenge, he still seems them as a useful tool for identify areas for improvement.

The other companies A, B, G and H did not find the auditing process particularly challenging, the only challenge for company G was that they were not always sure exactly what the auditor wanted form them and felt that they could communicate what is expected from the businesses for next audit more clearly.

Of all the companies, company F was the only one to see the auditing process as a completely positive experience. The environmental manager felt that it was good to get reassurance that what they had done was correct and found the auditor to be very constructive when discussing the business' progress. The reason for this view of the auditing process may be down to the fact that this company has only recently achieved the accreditation and therefore the auditing process marked their attainment of the accreditation, this also means that this company has not had to demonstrate continuous improvement which has clearly proved a challenge for some of the other companies.

Overall, the auditing process appears to have been a challenge for some of SMEs, especially in understanding exactly what the auditor expects of them and being able to demonstrate continuous improvement. However it is a challenge that all of the SMEs have overcome as they all still have ISO 14001 in place.

4.1.2.6 Attitudes and culture of management and workforce

Many of the company narratives discuss how the attitudes of the employees and the general culture of the business did not prove to be significant challenges to the businesses when it came to putting ISO 14001 in place or in the reaccreditation process.

The company who found getting the workforce engaged in environmental management the biggest challenge was company F. They are predominantly office based, with some small printers at different locations and the environmental manager found that the attitude on the shop floor of the printers was different to the attitudes of the employees in the offices. She felt that many workers in the shop floor just wanted to do their job and go home.

However she did acknowledge that the shop floor did what was asked of them in terms of following environmental policies. She had also found a lack of interest from a small number of the company's directors who did not see the business benefits from it. Overall, whilst there was a general lack of interest on the shop floor there were still some individuals from that had paid interest had made suggestions in how the business could reduce its environmental impacts.

One of the main reasons for the difficulties getting employees motivated about improving their environmental impacts was that the business, according to the environmental manager, had suffered from poor communication between the management and the workforce in the past, she attributes an improvement in this to ISO 14001. In undertaking ISO 14001 she has implemented focus groups from various departments who discuss their environmental management and what can be done, she also reports back to all employees what progress has been made. According to the environmental manager this communication of environmental issues has improved the communication channels of other areas of the business also.

Company D had some issues at the start with people only giving ISO 14001 lip service. However, as it was being implemented, the manager saw the workforce on the whole start to take a more active role and many made suggestions on the ways the business could reduce its impacts.

Companies A and B both found the general workforce to be fairly motivated to achieve the accreditation but found that it was the members of the management that were reluctant to invest in this process. In company A's case the management are reluctant to spend money to maintain the accreditation and this is mainly due to the difficult financial position they are in. In company B's case it is due to the fact that the they are based on an industrial estate with other companies that they regard as being "dirty" and therefore some of the company directors did not see why they had to invest time and money into the accreditation when their neighbours could go on acting as they were.

The managers of companies E, C, G and H all found no significant resistance from the management or the shop floor in implementing the accreditation. Company C stated that the whole workforce was extremely positive about the process mainly due to the fact that they recruit a lot of graduates who in his view are more likely to be interested in environmental issues as they will have studied them during their degrees also many of the workforce are shareholders in the company and therefore they are conscious of the business doing well financially and appreciate the need to have the accreditation in order to successfully create new business.

Overall, it would appear that the culture of the businesses and the attitudes of employees were not significant challenges and barriers to the SMEs implementing and achieving ISO 14001. One possible reason for this, may be that, as stated by many of the managers, the companies often had very flat hierarchy, with only one or two layers of management. Also, with the smaller size of the workforce it may be easier to engage all members of staff and get them involved in the process compared to a larger business.

4.1.2.7 Summary of the challenges in the process of attaining ISO 14001

From comparing the company narratives and the analysis of the interview transcripts it would seem that the main challenges for these SMEs in attaining ISO 14001 were the resources required in terms of the financial investment and manpower; the availability of expertise, complying with environmental regulations and in some cases the auditing process.

Whilst almost all companies discussed how there had been certain challenges in achieving the accreditation the overall level of difficulty in the process seems fairly low and when questioned about the overall process most managers did not see it as too challenging. Company D saw no challenges; companies E, F, G and H acknowledged challenges but started that overall it was not a difficult process; companies B and C viewed the process as being fairly difficult and only company A saw there to be significant difficulty in the process and this was mainly in maintaining it in their current financial climate.

Overall, it would appear that whilst there is limited finances and in some the relevant expertise, most of them perceived themselves to achieve ISO 14001 with not too great a difficulty, it would appear that one of the keys to this is the role of the manager themselves and access to affordable assistance.

4.1.3 Effects of ISO 14001

Now that the process and challenges of attaining ISO 14001 has been discussed in detail, the research will now focus on the changes that the businesses encountered (if in fact there were any) It is important for the purposes of this research that these are looked into, as it has become apparent from the attitudes of the SME managers that with the significant number of barriers to going for ISO 14001, only with a clear idea of the business benefits, is it possible to convince senior management to invest resources into this process. Therefore, research in this area needs to identify what benefits (if any) there are.

4.1.3.1 Financial benefits of ISO 14001

As has been stated previously, one of the reasons why the majority of SMEs in this sample undertook ISO 14001 was due to some form of perceived pressure from customers in their supply chains. Therefore one could assume that this would translate into definite financial benefits to the business, however was not seen to be the case in many of the SMEs. For companies C and F they both perceived there to be pressure due the increasing number of questions that were being asked of them regarding their environmental management during tendering processes, however neither company could be sure that they would not get the business if they did not have ISO 14001. Therefore neither company can be certain that having it has benefited their companies in terms of maintaining the business of their customers or generating new business from new customers.

Company E was in a similar situation having perceived that in the future ISO 14001 would be a prerequisite of doing business, however since achieving it a number of years ago this has not been the case and like companies C and F the manager from company E cannot be confident that ISO 14001 has generated any new business for them. However unlike companies C and F, company E did not achieve ISO 14001 for this reason but through the personal interest and motivation of the compliance manager.

Companies B, G and G all perceived there to be direct pressure for them to achieve ISO 14001. Company B from their main customer, company G from the building industry in which they do business with and company H from the automotive industry which they mainly supply to. All three companies therefore perceived that they had continued to get the business of their customers having achieved ISO 14001.

Company A before getting ISO 14001 did not have any pressures from their customers to get it, however after gaining it they were asked by customers about their environmental credentials but it is unclear to what extent ISO 14001 has generated new business that they would not have attained without it.

Finally, company D before achieving ISO 14001 had experienced no definitive pressure from its supply chain to get it. However whilst the environmental manager could not give a clear account of why ISO 1400 was attained, in terms of there being any clear strategic decision to do, it is now seen as a marketing tool and a competitive advantage. The environmental manager makes it clear that whilst it may not definitely generate them more business it is an advantage for them in the tendering processes and is something they actively market.

Overall, it is evident that there has been little definitive benefit in terms of them generating new business for these SMEs, however this is mainly due to the ambiguity of the demands of many of their supply chains. There is little evidence to suggest that these SMEs use ISO 14001 as a means to generate new business (with the exception of company D), other than the possible advantage during tendering processes, an example of this is that on the many of the SMEs corporate websites there is no mention of the company having ISO 14001. The only companies to discuss the marketing of the accreditation were company D (as previously discussed) and company F who claimed that the marketing department had plans to do this in the future but had not done so already as they had only recently gained the accreditation.

There is some evidence that many of the companies may have maintained business of their current customers due to having ISO 14001, however even this on the whole is not particularly clear and will be looked at in more detail when comparing these SMEs to those without ISO 14001 in similar sectors (especially for those in the automotive sector).

The most common perceived financial benefits of having ISO 14001 for these managers were efficiency savings. All companies except for companies A and D reported that they had seen financial savings since implementing ISO 14001. Companies B and C both stated that before getting the accreditation they had not perceived that they would see any financial savings but in both cases they had. Company B had seen savings due to reductions in energy usage, the quantity of raw materials needed and the waste generated, the manager also stated that their insurance premiums had been reduced since having it. Company C saw financial savings in energy and paper usage, quoting a two thousand pound saving in the last year from a reduction of the paper usage. The environmental manager of company C also stated that there were possibly even greater savings to be made as they are looking at reduction of the amount and method of travel

their employees make for work purposes which would result in environmental and financial benefits, especially as last year transport costs equated to a quarter of a million pounds. However, their manager also identifies costs that can be attributed to ISO 14001, but overall the manager sees these costs as necessary and feels that the savings and benefits to the environment outweigh them.

Companies E, G and H all made savings since achieving ISO 14001, company A due to reductions in electricity and solvent usage, company G mainly due to reductions in waste to landfill and paper usage and company H due to energy, waste and maintenance savings. The manager from company H was able to give very specific savings that had been made and had used the financial savings as a justification to the management team of making significant changes to their waste disposal and manufacturing processes. The manager of company G stated that the financial savings were the only definite business benefit of the accreditation.

Finally, company F demonstrated that they had made financial savings since having the accreditation, quoting three thousand pounds saved in the last year from waste disposal in the factory and also had seen savings due to electricity paper usage. However, company F saw the savings as being limited by the level of change that they could make, the manager perceived their company as having a low impact on the environment and therefore state that the only changes they can make are fairly small ones. The manager of company F sees that companies in high impact industries can make bigger changes can also see bigger savings from being having ISO 14001. The limited savings may be the reason why she has found that the business has not yet seen returns equalling the investment that the business made in the accreditation.

Overall, there were clear benefits to the majority of in terms of efficiency savings which were on the whole all attributed to having ISO 14001, as before many did not measure their environmental impacts and since having it now had targets in place and initiatives to reduce their impacts. The financial benefits in terms of maintaining and generating business do not appear to be as clear for the majority of these businesses.

4.1.3.2 Effects of ISO 14001 on businesses' activities

ISO 14001 has been shown to have been a significant challenge to many of the SMEs in this study and has required many of the SMEs to make changes to their business activities. Some have demonstrated that changes have let to financial savings. However, it is also important to consider what effects there have been in terms of reducing the businesses' impacts on the environment and comparing the various managers' overall views of the accreditation.

The main aim of ISO 14001 is to use a formalised environmental management system to continually reduce the impacts of the business on the environment. On the whole there is some evidence to suggest that this may have occurred within most of the companies as the financial savings experienced are due to reduced resource use which will logically reduce their business' environmental impacts.

What is most striking from the interviews is that on the whole this group of SMEs viewed their environmental impacts as small regardless of what industry they were in. In many cases they saw their impacts as proportionate of their size, however when discussing the changes that have occurred these same businesses on the whole list a range of impacts that they have reduced.

The managers all demonstrated a fairly similar range of environmental improvements like reduction in waste disposal and resource use with increased levels of recycling, yet only a few mentioned and were able to give figures for their companies' emissions. Also only a couple mentioned issues like sustainability and global warming, it seems that on the whole when considering environmental impacts these managers concentrate on and they are possibly only aware of issues that can be clearly seen and measured like paper and electricity usage and are relevant to their actions, those few SMEs that did discuss issues like CO_2 and climate change did not view it as something they could effect and viewed it as a responsibility of the government and not them.

The question that has perhaps remained unanswered within this research is the actual specific effects ISO 14001 have had on the businesses and whether efficiency savings are the direct result of ISO 14001. There is some evidence to suggest that this is likely to be the case for some of the

SMEs, for example supplier pressure meant a lot of the SMEs were motivated to get ISO 14001, through the process of doing this the managers themselves became more aware of environmental issue and in some cases became green champions. In these cases it is likely that the process of attaining SIO 14001 has produced changes to business due to the managers' new awareness and knowledge of environmental management. However, within the remit and scope of this research we cannot say for certain that this has occurred.

4.1.4 Managers' attitudes towards ISO 14001

The overall consensus of the managers of these SMEs is that ISO 14001 has had a positive effect on their business and on the whole most of them see the benefits that other companies regardless of size cold achieve with by attaining it. The most enthusiastic managers appear to be from companies D and E, who both not only are the main driving force in their businesses with regards to environmental management but also assist other companies with to attain ISO 14001. Company D's manager gives talks on environmental management to suppliers of its main customer and company Es manager has had managers from other companies visit his company to see the ISO 14001 in action.

Apart from issues relating to the specific challenges already identified and discussed there are a few negative comments about ISO 14001 from these managers, the most significant and damning of these is from company F where the manager does not feel that ISO 14001 requires a company to be particularly environmentally responsible, the manager states that a lot less than what they did could be done to still achieve accreditation.

4.1.5 Summary

Whilst these small businesses' come from a range of sectors some with larger and more challenging environmental impacts to remedy than others, they appear to have a great deal in common. These SMEs have predominantly demonstrated themselves as a group of businesses who have found the process of ISO 14001 to have challenges but overall not seen it as particularly difficult and the majority have on the whole attained it due to some form of perceived pressure from their customers or through a key member of management being interested in and

motivated to achieve the accreditation. Other then addressing possible requirements from customers, there is little evidence of ISO 14001 being part of a strategic plan to increase revenue from new business or to bring about financial savings through resource efficiencies (although many saw savings, very few had perceived there would be any at the start of the process).

Apart from possibly creating business through tendering processes there are also few examples where ISO 14001 is being used as a competitive advantage over other companies. Only one of the SMEs were currently marketing the fact they had it and most did not even mention it on their website. On the whole the majority claim to have seen some form of benefit from having ISO 14001, mainly in terms of financial savings through resource efficiencies.

Therefore, with reference to the model developed in the literature review it would appear that for this sample of SMEs the key factor motivating the majority of SMEs to attain ISO 14001 was supply chain pressure. There was far less evidence of it being due to competitive advantage or regulatory companionable as had been suggested in previous research.

The ways in which the business differ are mainly in the precise challenges that each company faced. It seems that each company varied in the level of relevant expertise and experience of their employees, however almost all of the took advantage of subsidised assistance and for those businesses with limited internal expertise this assistance proved to be one of the keys to the accreditation being successfully achieved.

With reference to the model developed in the literature review, it would appear each of the enabling factors were present amongst this sample of SMEs. Expertise, manpower and financial resources were all factors perceived as barriers, most of the SMEs felt that ISO 14001 would cost the business more than it would save. As suggested in previous research and the model in the literature review the majority of SMEs with ISO 14001 attained it in part due to external support. One final similarity between the SMEs experiences and the model is that leadership and the role of the individual responsible for implementing ISO 14001 were crucial in enabling the SMEs to successfully achieving it.

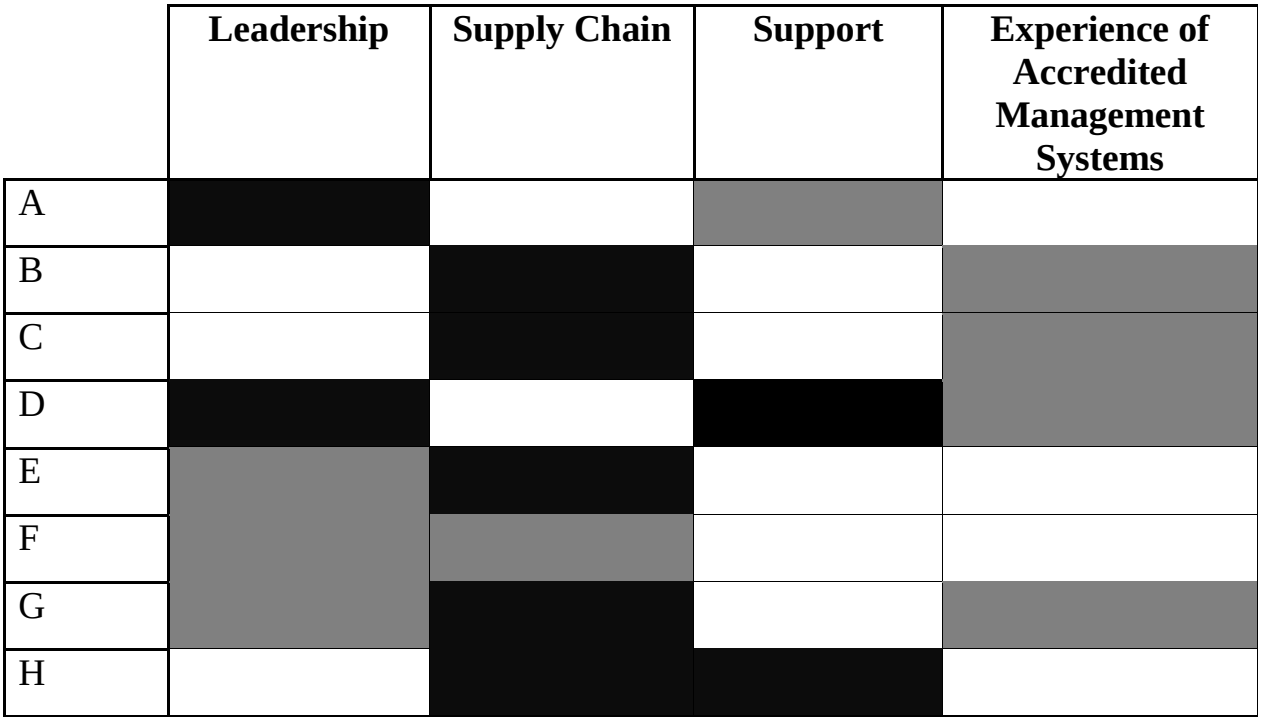
Overall, in terms of the attitudes to the accreditation and the role of businesses in reducing environmental impacts the majority of manager's are very positive about ISO 14001 and now that it is in place see benefits to various aspects of their businesses. Now that the process and challenges of attaining ISO 14001 have been analysed, the research will focus on what the common factors were that meant this group of SMEs were motivated and able to attain ISO 14001 when the vast majority of SMEs do not.

4.2 Main factors that motivate and/or enable SMEs to obtain ISO 14001

Through analysing the individual accounts of the managers from the eight SMEs it appears that the reasons why these SMEs have obtained ISO 14001 can be identified in four categories, these being: leadership, supply chain pressures, support and previous experience of accredited management systems.

These four categories and which of them are responsible for each SME achieving the ISO 14001 (to varying degrees) can be seen in the diagram below:

Figure 16: Factors Motivating SMEs to Obtain ISO 14001



It is important to make it clear that the diagram above represents the main reason or motivating factors why each SME decided to work towards ISO 14001 and does not represent all of the challenges or the key issues in the actual process of attaining ISO 14001 that have just been discussed.

Overall the diagram demonstrates that on the whole each SME implement ISO 14001 for different reasons and each had a different range of reasons. Each of the four factors will now be discussed in more detail:

4.2.1 Leadership

Leadership refers to the main motivation for the business to start the process of attaining ISO 14001 coming from inside the company, with a key member of the management team either taking charge or delegating the project to someone. Of the eight companies, only two, companies A and D had environmental leadership as a strong factor in the companies' decisions to obtain the accreditation. The manager from company A demonstrated very little strategic reasoning for them

obtaining ISO 14001, he put it down to the director having an interest in an informal environmental management system and because the environmental manager had implemented the accreditation at a previous employer he decided to implement it at this company too. In a similar way the manager from company D demonstrated very little strategic reasoning for obtaining ISO 14001 and more a personal one. He joined an organisation called the Staffordshire Business & Environment Network, he did not remember exactly why he had joined this but once he went and heard about ISO 14001 he pursued implementing it at his company out of his own personal interest.

What is interesting is that in both of these cases there is very little, if any, supply chain pressure but there is a key role in the form of some kind of support. In both cases this support is from an environmental support organisation. This support enables the business to take the first steps to the accreditation process and in company D it actually introduces the manager to environmental management systems, prompting him to become highly motivated to achieve it with his company.

Companies E, F and G all have leadership as a factor in their businesses deciding to achieve accreditation, however whilst this personal and internal motivation was present, it was not the major driving force. It could be argued though that there is some evidence that within these 3 companies whilst it was not a significant motivating factor, the role of the managers as leaders was a factor that enabled them to achieve it and that without them and their personal interest the company may not have successfully implemented it.

4.2.2 Supply chain pressures

Out of the eight SMEs in this sample the only two that did not have supply chain pressure was companies A and D who as stated had motivated management which drove the accreditation process. All of the other companies saw in some way or another a form of pressure from their customers in their supply chain.

The company where supply chain pressure was most evident was company B. The manager from this SME described how they had received a letter from one of their main customers informing them that they were looking for their suppliers to implement ISO 14001. The manager from

company B felt that in no uncertain terms they had to get the accreditation if they wanted to remain a supplier to this company and that if they did not and they lost their custom then they would go out of business, in his own words it was a do or die situation.

Company H felt a strong pressure from their customers in the automotive industry and expressed no uncertain terms that without the accreditation, they would not have maintained the business of some of their existing customers and they doubted they would have got new customers from this industry.

Company G did not have such direct pressure from one specific customer to get the accreditation, however their manager did state that in their industry, providing metal roofing to councils and larger corporations, they were being asked more questions relating to whether they had it. This has led the manager to believe that ISO 14001 has become like ISO 9000 and is now something that is expected of you.

None of the other companies perceived there to be such direct pressure to have to get the accreditation, instead they all felt that it may be or may become a factor in whether they maintain business with their current customers or generate business with new customers. Company E is similar to company B in that they are both suppliers to the aerospace industry for a large amount of their business, however they have not felt such definite pressure to have to get the accreditation. The manager from company E states that customers were increasingly asking about their environmental accreditations and this drove them to get the ISO 14001, however he goes on to make it clear that he was not sure if it was actually a requirement of their customers and therefore did not know if they would lose business by not having it. He perceived that in the future it may well be a case that it is necessary to have ISO 14001 in order to do business with larger businesses however he could not be sure of this or that they had in fact needed to get it. He did however state that if they had not got it then some of their larger customers would have come to their company to do audits and this acted as a motivation for them to get it.

Companies F and C get a lot of their new business through tendering processes, during this process both managers highlight the fact that on the tendering forms there have become an increasing number of questions about whether they have an environmental management system.

The manager from company F states that in the past they would get a couple of questions about their environmental performance and now it was a couple of pages. She also stated that some of their larger existing customers had started to ask questions about their accredited management systems.

Similarly the manager from company C states that it is due to questions about whether they have an environmental management system on tendering forms that drove them to seek accreditation. The need to get accredited was at first identified by the sales department however the manager from company C does make it clear that they do not know for sure whether they actually need the accreditation or not and he does not know how much business, if any they would lose if they did not have it. The manager accepts that part of the tendering process is ticking as many boxes as possible and this along with the uncertainty of how important the accreditation was to the customer drove them to get it.

Overall, it seems that the majority of SMEs in this study were driven to obtain ISO 14001 by pressure through their supply chains; however it seems that on the whole it is the perceived possible threat of loss of business rather than knowing that they must have the accreditation that has made them take action. Only one company felt they had to get it or they would definitely go out of business. This situation with this company will be discussed in more detail at the end of this chapter when an example of a customer's role in influencing SMEs to attain ISO 14001 is looked at in detail.

4.2.3 Support

Support proved to be one of the keys to a business successfully implementing ISO 14001, however support organisations like Groundwork and SBEN on the whole only helped the businesses in achieving the accreditation by supporting them (to varying degrees) through the processes of the accreditation. In only a few cases did they motivate the SME to go down the route of ISO 14001. Where this was evident as happening was in company H and company D. For company H it was a meeting between an individual from an organisation offering subsidised support implementing the accreditation which led the chairman to consider making the then production manager also take responsibility for environmental issues. Company D also attribute a

business support organisation with them going for ISO 14001, in this case it was very much about them going along to an event, being made aware of the ISO 14001 and with their own personal motivation going about achieving it.

Apart from company H and D, the only other companies where support of some sort influenced the business to go for the accreditation was company A. In this cases it was a combination of someone with a personal interest in the environment who came across available, subsidised support that led them to decide to obtain the accreditation.

As has been demonstrated in detail in the analysis so far, the largest influence business support organisations had on the majority of SMEs in this study was in enabling them to be able to get ISO 14001. It was mainly due to the fact that much of their support is cheaper (often due to subsidies through government funding and grants) than consultants that the SMEs were able to make use of it. The majority of the SMEs had been reliant on some form of support either in delivering training, going through the process of implement an environmental management system or ensuring the company is compliant with environmental legislation. Most of the SME managers agreed that without such support it is unlikely they would have been able to achieve ISO 14001. The role of support organisations in assisting SMEs will be looked into in more detail at the end of the chapter when three of the business support organisations utilised by many of the SMEs in this study are discussed using interviews that were conducted with business advisers from the various organisations.

4.2.4 Experience of accredited management systems

Experience of accredited management systems refers to an SME gaining ISO 14001 partly because they have already achieved ISO 9001 and therefore have progressed on to ISO 14001 or by having ISO 9001 it made the process easier and therefore enabled them to get ISO 14001. It also refers to companies where the manager has previous experience of accredited management systems (either ISO 9001 or 14001) and this has either motivated them to attain one at their new company or it has assist them in the process.

In this sample it appears that there is some evidence of having ISO 9001 influencing or enabling the company to attain ISO 14001 in companies B, C, D and G. In all of these cases this is not a major factor but is still present. In each of these cases there was some suggestion that the managers may have been more open to the idea of ISO 14001 due to their prior experience of the ISO standards. Also there was some who viewed ISO 14001 as becoming like ISO 9000 in the sense that it has become an industry norm and something that companies need to get in order do business, therefore it appears to be linked to supply chain pressures. Of all the factors, the companies past experiences of accreditations is the most difficult to be sure of occurring as it requires the most reflexivity from the manager being interviewed and as it is not a critical incident in the company's history (like supply chain pressure or support offered) it is harder to pinpoint and therefore identify. However there was a definite appreciation amongst some of the managers that ISO 14001 was becoming for SMEs like it is for larger businesses, a badge that they must wear next to their quality accreditation and investors in people.

Those managers who had previous experience of ISO 14001 clearly had greater level of knowledge of the management system, however due to the apparent dependence by almost all companies on external support it is questionable how much expertise any of these managers had in this area. It also raises the question of how easy it is for an environmental manager to implement a management system in two or more different companies and whether, especially in smaller businesses there are too many unique challenges to be able to just use their past experiences. Whilst this is an interesting and important question, it cannot be answered within the scope of this research.

4.2.5 Summary

Overall, this discussion of the company narratives and analysis of the interview transcripts of those companies with ISO 14001 has outlined the process these SMEs have undertaken to achieve the accredited environmental management system and identified the challenges they have each faced. In doing this the research has identified 4 common factors that have motivates and/or enables these SMEs to attain ISO 14001.

Of the four factors, customer's perceived demands for supplier to have environmental management systems in place appears to be the strongest motivating factor amongst most of the SMEs. Whilst affordable external support is one of the strongest factors in enabling SMEs, who on the whole lacked resources and expertise, to attain ISO 14001.

There were some factors that were identified in the company narratives and featured on figure 14 that did not feature in the previous framework. These were: compliance with legislation, financial savings, highly engaged workforce and as a potential marketing tool. Whilst these were present to some degree amongst the SMEs, they were not felt to be as strong influence as the four other factors. Having a highly engaged workforce was seen for just one company as a factor that assisted them to attain ISO 14001, however, from what else was discussed it is likely that this was not necessary for the business to do so. There was some evidence of a small number of the SMEs seeing some potential for financial savings and potential for ISO 14001 to be used as a marketing tool but there were no cases where this was seen as a particularly strong influencing factor and on the whole the managers described these perceptions as being fairly vague, for example none of the businesses had a clear plan of how they would use ISO 14001 to their advantage within their company's marketing. The final factor omitted from the framework is compliance with legislation. There were several cases where SMEs who had attained ISO 14001 had felt concerned that the process of implementing the management system would uncover non-compliance that could lead to compliance or costly remedies (as was the case for a couple of the SMEs). On the whole regulations and legislation was seen as time-consuming and highly resource intensive with the majority of SME's viewing it as a potential barrier they have overcome, some with the external assistance. The various narratives regarding the SMEs experiences of environmental regulations gave an overall picture of it being an issue for SMEs but that it is not necessary a factor that motivates them to attain ISO 14001.

This study will now turn its attention to the 4 SMEs without ISO 14001. The aim of this analysis is to identify if there are any common factors which are preventing these SMEs from either wanting to or be able to attain ISO 14001 . In the discussion chapter the SMEs with ISO 14001 will be compared to those without it.

4.3 Comparison of SMEs without ISO 14001

The four SMEs interviewed for this study each had some awareness of environmental issues and their impacts on the environment but none of them had achieved ISO 14001. This study will now compare the four SMEs in terms of how they perceive their environmental impacts and the reasoning for why they have not achieved ISO 14001.

4.3.1 Awareness of environmental impacts

In terms of their business activities and associated environmental impacts companies I and J were similar in that they both had their products produced by another manufacturer. Company I had very little idea about the environmental activities or credentials of the U.S company that manufactured their plastic coatings product whereas company J used three manufacturers and was aware that one of the these had ISO 9001 and ISO 14001. Company K and L both manufactured their own products. Comparing the four businesses in terms of their environmental awareness and how they view their impacts on the environment, Company I and J both view their environmental impacts as small as they themselves do not manufacturer their products, they do not appear to take responsibility for the environmental impacts caused by their products being produced. Company K acknowledges that their manufacturing processes have some impact on the environment however they see this impact as proportionate to their size and therefore see their impacts as small. Company L were the only ones who had reviewed their activities and had an understanding of what their main impacts were and how they could reduce them.

4.3.2 Environmental management activities

Company J is the only one of the four SMEs that does not have an environmental policy, the managing director was aware of environmental issues but due to the nature and size of the business did not feel that it was financial viable or indeed necessary to undertake activities to reduce their environmental impacts as he did not feel they had any. Company I had an environmental policy and did emphasise the fact that their product is a more environmentally friendly plastic coating then the others on the market. Company I markets the fact that their product is a more environmental responsible product than alternatives even though they are not

aware how environmentally responsible the manufacturing processes that are used to produce it are. Company K has undertaken some actions, they have an environmental policy and they recycle some of their waste. Even so, the managing director of Company K admits that he doubts his business complies with all environmental legislation. Having undertaken some of the processes of implementing ISO 14001 company L have done the most to reduce their impacts and were able to give specific examples.

4.3.3 Experience of ISO 9001

Of the four SMEs without ISO 14001 only one of those also does not have ISO 9001. Company J does not have ISO 9001 as their managing director does not feel that it is necessary for them to have this. He states that around 30% of their business does require the manufacturers of the product to have the quality accreditation and in these cases they make sure that they get the product produced by a manufacturer with ISO 9001, but as they themselves do not produce the products they have not been required to achieve it.

Companies I, K and L all have attained ISO 9001 and state that it is a requirement for them in getting business. The managing director of company I stated that it was very easy to achieve. Company K as well as having ISO 9000 also had achieved TS 16949 which is the automotive industry's quality accreditation which the managing director stated was a requirement of doing business in their sector. Company L has ISO 9000 but not TS 16949, despite also being a supplier to the automotive industry. They felt that they did not need this as they were not a big enough part of their customers' supply chains for it to be an issue. Company L had found that the work they had done towards ISO 14001 had been made easier by the fact that they already had ISO 9000 as the environmental elements could be added on to this.

4.3.4 Customer pressure to attain ISO 14001

Unlike the SMEs with ISO 14001 there does not seem to be an external stimulus for them to go through the process of implementing an environmental management system. Where 3 of the companies (and even the 4th with regards to their manufacturers) have seen ISO 9001 become the norm for doing business, they have yet to see this happen with ISO 14001. At present none of the

4 companies feel ISO 14001 is a requirement for them to do business with their customers and none of them can identify if it would win them new business.

Companies I and J have faced no pressure and it has not formed a requirement of them getting any business. Companies K and L who both supply the automotive industry had seen some of their competitors getting this and both appreciated that it was something that they will get in the future as they were getting asked an increasing number of questions about their management systems. Company L could not think of a time when it had been a definitely requirement of a customer.

Company I have had to sign up to customers' environmental policies when they are supplying their product but the managing director could not think of a single time when they were required to have ISO 14001. Similarly the managing director of company J stated that unlike ISO 9001 where 30% of business had required it, he could not think of a time when any business had even asked if they had the accreditation.

Company K was the only one that had faced pressure to get the ISO 14001. Being an automotive manufacturer this is perhaps more likely to occur then companies for companies I and J and being a larger business than company L may be why they have faced more pressure. Whilst the managing director of company K states that in the past they have faced pressure to achieve ISO 1400, he now feels that this pressure has decreased and tailed off. The managing director states that as long as they told customers they were looking into achieving it then that was enough to secure business, he goes on to state that he cannot identify any business that they lost by not having the accreditation. He does however acknowledge that he has seen this pressure starting to increase again and they are now looking into achieving the environmental accreditation.

It appears that one key difference to many of those SMEs with ISO 14001 is that none of these managers have perceived there to be strong pressure just from being asked if they have ISO 14001. Each of them appear to feel that they cans successfully continue, for the time being, doing business without it.

4.3.5 Perceived pressure on resources

Company L give the impression that they would have probably achieved ISO 14001 if it were not for resource issues they faced with the employee responsible for it going on maternity leave. Another major factor that appears to have prevented companies I, J and K from achieving ISO 14001 is the perceived financial cost of doing so. The managing director of Company I stated that the financial costs was the main challenge to them achieving it. He stated that he would like his business to be accredited however as they were a relatively new business it was not financially viable for them to do so at the moment.

Company J did not envisage that they would ever need to get ISO 14001 however, if they did then the managing director stated that the financial cost would be the most significant determinant. He stated that if a business required it then they would have to assess the cost against the business generated. The managing director of company K was not sure exactly what the financial cost would be and was not aware what other resources would be required, but the potential financial costs were seen as a possible barrier to them. The managing director of company K stated that the business was in the process of assessing this. Company L had invested a great deal of resources in work towards an environmental management system already and on the whole did not seem to find the financial costs too prohibitive.

4.3.6 Awareness of support available

On the whole all of the SMEs without ISO 14001, apart from company L, stated that they were not aware of what support was available to them in achieving ISO 14001. Neither company I or J had received any information regarding available support. Company K was aware that there was some support available but on the whole was not able to name many. Only company L had a fair awareness of some of the assistance available to them from such organisations although they do also employ a consultant to undertake some of the work ensure they meet all environmental regulations.

4.3.7 Prospects to attain ISO 14001

Of the four SMEs without ISO 14001 it would appear that companies K and L are likely to achieve it in the relatively near future and company I at some point. This is mainly due to the growing pressure they are facing from their sectors where they view ISO 14001 becoming a norm to do business like ISO 9001 did in the past. This is particularly true of companies K and L who are part of the automotive supply chain. What will be of interest is, if this is does become the case and ISO 14001 is a prerequisite of doing business, then how long can the two companies continue to do business without it and how long can the answer that they are in the process of doing it remain satisfactory to their customers.

The managing director of Company I seems keen to gain the accreditation and appears to appreciated the need to reduce the business' environmental impacts especially considering the fact they market their product by its environmental credentials. However, the company is unlikely to attain ISO 14001 for some time due to the financial cost of doing so, especially with the business having only existed for a few years. Even if company I did achieve ISO 14001, it is questionable how significant a difference it would make to the business' environmental performance and impacts as the manufacturing of the product would presumably still be done by a US firm whom the managing director admits to knowing little about their manufacturing processes in terms of its environment impacts. It seems very unlikely that Company I will ever gain ISO 14001 unless it is forced to by its customers and if there is a financial benefit for it doing so. Like Company J, because they do not manufacture their products themselves ISO 14001 may not even make that large an impact on their environmental performance.

4.3.8 Summary

Figure 15 outlined the range of characteristics of SMEs without ISO 14001 and possible factors preventing them from attaining the standard. Through the above analysis it would appear that there are three key factors that have had the most significant effect on the SMEs and meant that they have not achieved ISO 14001. Firstly, there is a lack of pressure or necessity for them to achieve this mainly due to them not perceiving any customer requirements to be significant enough to effect them doing business. Secondly, on the whole the businesses view the process of

achieving ISO 14001 as being too expensive and apart from one of the companies, they have a poor level of awareness of the possible business benefits that may come about from having ISO 14001. The third factor is the lack of awareness of the support available to them, this is particularly important due to the SMEs often not having the manpower or internal expertise required. However even with support it is unlikely Companies I or J would seek to attain ISO 14001 at present.

With reference to the previous research and the framework developed in the literature review, the above analysis of the SMEs would support the idea that supply chain pressures were key to SMEs being motivated to attain ISO 14001. It also supports the idea that SMEs have to have the manpower, financial resources, support and knowledge. In each of these companies there were no individuals who could be identified as a leader in this area of environmental champion, therefore it supports the idea that a leader has a crucial role in motivating and enabling SMEs to attain ISO 14001.

The fact that the analysis supports the previous research findings is not surprising. With the vast majority of SMEs not having ISO 14001, these SMEs in the study without it were relatively typical SMEs and therefore it would be expected they would have similar perceptions and experiences to many of the SMEs in other studies. It is the SMEs with ISO 14001 who are an exception to the norm and this is why the findings from analysis of these businesses has led to the past research and theories being built upon and developed to a greater degree.

These findings will be investigated further in the discussion chapter of the thesis, here a comparison will be made with the SMEs with ISO 14001 and they will be compared to the findings of previous research outlines in the literature review.

4.4 Examples of external support available

As has been demonstrated in the above analysis, the support that is available to SMEs appears to be crucial in enabling them to attain ISO 14001. Because this is such a key factor and the SMEs have such different experiences of varying forms of support, a number of business support organisations have been identified and interviews conducted with key members of staff who

advise businesses (especially SMEs) on environmental management. This section of the data analysis aims to add to the research by looking t the experiences and attitudes of these support organisations towards the challenges and possible benefits they have seen of SMEs attaining ISO 14001.

4.4.1 Groundwork

The most commonly used support organisation amongst the SMEs in this research was Groundwork. Groundwork is a nationwide organisation that provides subsidised assistance on environmental issues to businesses of any size and in any sector. A large amount of its funded has traditional come from government grants. Six of the SMEs with ISO 14001 mentioned getting support from Groundwork at some stage.

The most enthusiastic opinions about Groundwork's work were from company A and C. Company A stated that they were extremely hands on in assisting them and they took a very involved and active role and were extremely pleased when the business achieved the accreditation. The manager from company A saw the relatively low cost of the support offered by Groundwork as key in them being able to get the assistance and therefore get the accreditation.

Company C used Groundwork after finding the quoted rates of consultants too high. They used Groundwork for training purposes and also to do legal audits and maintain their legal documentation, this was seen as a significant challenge by the business and something they did not have the resources to do themselves. Companies B, D and F all used Groundwork for training sessions when they embarked on the accreditation process.

Company G also used them for training purposes and found them extremely useful however the environmental manager felt that the help they offered was limited to the initial stages of getting the accreditation and it did not help with the most advanced stages or when maintaining the accreditation. Overall, the managers of the SMEs who used Groundwork were all positive about the assistance given and in most cases saw it as value for money and an affordable alternative to expensive consultants.

As part of this research to develop a fuller picture of the experiences of SMEs an interview was conducted with two business advisers from the Birmingham office of Groundwork. The aim of the interview was to obtain the opinions of SMEs and ISO 14001 and how they engage with SMEs on environmental issues.

The business advisers describe the work of Groundwork as providing "funded or commercial work, so we go out to mostly small companies and help them with general environmental queries or more specific like legal audits, training, if they need any general awareness training or auditor training or implementing environmental management systems".

The way that this office of Groundwork engages with businesses is mainly through literature, they explain "at the moment we don't really have a marketing person to do that for us, so we're doing the marketing....it is a combination of people randomly seeing some publication somewhere or seeing an advert somewhere and wondering what the type of things we do and then that will lead on to something else". This approach to their engagement was perceived to be one of their main challenges and limiting the work they are doing, they discuss that "If we could get some sort of marketing strategy sorted would be great so people know we are the first people they can go to". This appears to be backed up by the SMEs without ISO 14001 who were unaware of support available, this is particularly an issue for those in the automotive industry where you would expect an organisation like Groundwork to be targeting.

Another limit to the work they do is the ways in which they are funded and a lack of stability in that funding, one of the business advisers explains "funding is an issue as there is some instability not knowing if you will be able to keep programmes running in the long term. For funding for companies there are a lot of criteria that may put some off and there are companies that we would like to help but they don't meet the funding requirements".

With regard to SMEs and ISO 14001 the business advisers have seen a growing level of pressure coming down supply chains, they state "in the automotive industry particularly, a lot of them have to get ISO from around 1999, so yeah you are getting a lot of companies who are being pushed down that route, we do work with a lot of them and have been quite recent". They acknowledge that supply chain pressures alone may not be the best route to bringing about

change in SMEs stating “It does depend on the company, because if they are being pushed then they might not have their whole heart and soul in it and its literally just quickly get the certificate”. They go on to explain this point in more detail stating “for those companies who have been forced into it and are only getting it for the certificate hopefully it will bring about a change in culture. Even if they don’t even care about the environment they have a system that they have to follow then hopefully it will become part of their everyday thinking and their attitudes. Even if at the moment it may not be what they care about, hopefully it will bring about change in the end”. Looking at the two SME who got ISO 14001 mainly due to internal motivations, it would appear that they have at least done more than just get the certification. In both cases it could be argued that they have used ISO 14001 to legitimise the work they were already doing, especially with regard to confirming they are complaint with environmental legislation.

On the value of ISO 14001,Groundwork give a fairly mixed message, firstly describing how due to its nature ISO 14001 may not result in any significant changes “you can see some companies will set themselves something really minimal to do, that’s because the resources, they don’t have the money to set themselves huge reduction targets because they probably couldn’t do it”.

However as well as these limits they do feel that there are benefits from the structure and systems of ISO 14001 stating “there are improvements it’s just the fact that, you just have to look at the procedures and look at the practical side, so they might not be having huge reductions in say their energy usage for example but the fact that they have a lot more procedures in place and people are changing the way they actually work that’s got to be a good start if nothing else”.

AN SMEs awareness of and willingness to consider ISO 14001 according to the business advisers is dependent on the sector the SME is within and whether they have an experience of accredited management systems, stating “I think it depends on the sector, most manufacturing and especially automotive industries have heard of it but I think if you go to say the hotel industry or restaurant industry they don’t have much contact with it. If they have a quality system then you probably find they have heard of it”.

The main challenges they perceive SMEs to have in achieving ISO 14001 are mainly down to a lack resources “time and money, it’s such a time commitment to come on courses and the start looking at their aspects and impacts it takes a lot of time”. Another challenge for them is seen to be legislation and management systems with them not necessarily believing that a they are applicable to or suitable for a business of their size “Legislation is a big barrier cause they don’t really have access to legal information and when they get it they don’t really they how to deal with it, they read it and they don’t know how it applies to them. They see stuff like management systems and they don’t think it applies to them, they haven’t got the money or people power”.

According to Groundwork, SMEs also often do not see environmental concerns as being high on their agenda “the environment is generally an add-on for what they are doing already, the environment often comes at the bottom of the list of priorities”. The reason for this lack of urgency and for it not being a priority for them is due to them seeing their impacts as being proportionate to their size, they state “a lot of small companies, cause they are small they don’t really think they impact on the environment much”.

It would appear that Groundwork are able to offer a wide range of support which many of the businesses in this research have benefited from and that on the whole these businesses have had positive experiences of working with Groundwork. However, it is acknowledged that one of the main limitations to their work is a lack of marketing strategy, expertise and resources within the organisation and therefore they are limited to only working with businesses who “stumble across” them from generic literature or by being referred by another organisation or business.

Overall, it is interesting that Groundwork, with their experience of working with SMEs reinforce much of what has been discussed in this chapter, that the main barriers to SMEs taking up ISO 14001 is their limited resources and the challenges they face dealing with environmental legislation. Also, it is of interest to note that they see certain sectors as being more likely for SMEs to attain ISO 14001, this is an area which further research should investigate.

4.4.2 Envirowise

Like Groundwork, most of the SMEs with ISO 14001 had used Envirowise which is also a nationwide, government funded organisation that mainly gives assistance to companies on environmental management and legislation in the form of telephone help lines and literature in the form of a website and literature sent out to companies. Of the six SMEs that have used Envirowise, three were positive about the help given, especially as much of the help it offers is free, with information given to the companies on specialist areas and one company received free visits from them. The main criticisms of Envirowise came from companies A and E. Company A mainly used Groundwork and when they did approach Envirowise they found the response time too slow. Company E questions the specialist help Envirowise and similar support organisations can give, he felt that the advice they give is too generic and often is common sense, the environmental manager feels that this is because the Envirowise employees cannot possibly be experts for all industries and each business will have different needs due to different factors effecting their working practices.

An interview was conducted with a manager from Birmingham's Envirowise discussing the role they play in assisting SMEs address their environmental issues. According to the manager Envirowise focus mainly on giving businesses “free advice on resource efficiencies and we identify where businesses can save money”. They offer “environmental self-assessment, resources, training, a helpline and sometimes site visits”. A lot of their work is in collaboration with other environmental business support organisations. The organisation works with businesses of all sizes and their main way of engaging with businesses is through literature mailed out and their presence at conferences and business fairs.

The main criticisms of Envirowise stated above were the slow response time and the perceived lack of specialism. The manager discusses both points in the interview first by stating “we are mainly limited by our resources, here we are fairly small and at times we can have far more demand than others therefore businesses may have to wait a little longer, however we offer tailored support within the organisation as a whole have expertise in a wide range of areas and work with all industries” He goes on to highlight one of their strengths as being “we work closely

with a large number of other organisations and in collaboration are able to meet businesses needs"

The manager is fairly positive regarding SMEs and ISO 14001 stating that it "can be a useful way for the business to focus its attentions of the key issues" however he does have concerns about many businesses motivations stating "the problem is for many businesses they can get it but actually make very little change, if it just becomes a tick box exercise then it is pretty worthless and can in fact make them appear to be doing more than they are".

When asked how their role in assisting SMEs implement ISO 14001 could be improved it came mainly down to more resources and better marketing, the manger states "smaller businesses need to have more targeted information aimed at them, if they question whether something is suitable for a business of their size then they will not do it, there needs to be clearer messages about why smaller businesses need to make changes and get the management systems in place, the benefits need to be made clear".

Overall, it is interested that Envirowise mentions some of their main criticisms and it appears that a common issue for these support organisations is their funding and their ability market their services in a way that appeals to a wide range of businesses of all sizes. Due to the limited contact they have with the majority of the businesses they assist, it is questionable how much support they actually give, compared to an organisation like Groundwork. However, as one of the main issues raised by the SMEs in this study was meeting the requirements of environmental legislation, there is clearly a need for their services, especially through the helplines they offer.

4.4.3 Staffordshire Business Environment Network (SBEN)

The final environmental support organisation mentioned by more than one of the SMEs in this study is Staffordshire Business Environment Network (SBEN). All three of the SMEs based in Staffordshire with ISO 14001 had used SBEN during the process of attaining the accreditation, these were companies D, E and G. SBEN is a membership organisation funding through their membership, government grants as well as generating some of their income themselves. They offer support to Staffordshire based businesses of all sizes. A large part of their work is forming a

network of local businesses that meet, discuss environmental management issues and visit businesses to see things like ISO 14001 in operation. They also offer subsidised training on a range of environmental issues. All three of the SMEs were very positive about the assistance given by SBEN. The most enthusiastic manager was from company G who saw the help offered by SBEN as extremely good value for money, he has been on seminars, training and visits with them and he has also had various members of SBEN to their company to demonstrate how they have implemented it. The environmental manager views the training offered as equivalent to that offered by consultants and rather than paying four or five hundred pounds for a day's training only costs sixty pounds.

Company D was also very positive about SBEN, they went to a coffee morning with them and from that joined and became aware of ISO 14001, they credit SBEN with starting them on the process of developing an environmental management system. Once they started on this process they also used the help of the ACORN scheme which the environmental manager described as providing an idiots guide to ISO 14001, it breaks down the accreditation into various steps and gives assistance at each stage. The environmental manager praises both SBEN and the ACORN scheme and makes it clear that it is these organisations that have enabled them to achieve accreditation. Finally company E is a member of SBEN and uses them but overall does not find the training and assistance given by them of much use to him, this is due to him having a diploma in environmental management and therefore finds that he knows must of what they discuss and tell him in the training sessions. However he does see them valuable and inexpensive for training his staff who have not undertaken a diploma.

An interview with the director of SBEN was conducted, the director explained how SBEN were a membership organisation with members paying between £55 and £150 a year dependent on the number of employees. In 2004 when they had completed their last benchmark report which compared the services they provided with other environmental business support organisations they had 270 members. As well as membership the organisations receives funding in the form costs, assets and liabilities from Staffordshire County Council. SBEN has been in existence since 1992.

According to the director each new member “receives a very heavily subsidised environmental diagnostic” and existing members receive “a 12 month follow up diagnostic”. This involves a “visit of up to a day from a specialist in environmental management, who will review the company’s operations to highlight opportunities for improvement” as well as “5 days subsidised environmental consultation following on from the diagnostic”. Businesses can also complete environmental self-assessments, attend breakfast meetings, attend training, workshops, call a helpline and visit other SBEN members’ factories or offices to see examples of best practice in organised visits.

The director describes the objectives of the organisation as “providing a forum and network to enable businesses in Staffordshire to 1) improve their environmental performance and 2) obtain commercial benefit through environmental good practice”.

The Director highlights some of the key points in their most recent benchmarking report which states “SBEN's position of having a Management Committee and Organising Committee drawn entirely from industry is unique and provides it with the opportunity to give a service tailored exactly to industry needs” (Callow, 2004:4). This highlights a common theme in the interview with the Director in that he repeatedly states that SBEN is very much business led and is very focused to the current needs of business. This can be seen from the training schedule they have produced that addresses upcoming legislation. The director also makes it clear that their breakfast meetings, workshops and site visits are business led, he states “one of the most successful elements of what we do is visits to businesses we have been working with and who have made the changes, business can then see that what we are saying does work and they can see the business benefits for themselves”.

In terms of engaging with businesses the main approaches are cold calling, working with supply chains of larger SBEN members to develop leads for the Business Development Managers to follow-up and working on a project called “Greening County Council Supply Chain” to attract new members.

On the question of SMEs and ISO 14001, viewing their current membership out of the 270 members, very few are SMEs with the accredited EMS (the ones in this research make up most of

them), whilst they do offer assistance implemented ISO 14001 many of their contacts join as a general source of resources and to get the benefits of the network, not necessarily for specific assistance to certain issue like could be said for Groundwork and Envirowise. One of the key differences with SBEN seems to be its membership and therefore the commitment and continual working relationship with the businesses. From the way SBEN is described by the three Staffordshire based SMEs in this sample it is very much the relationship and the larger network which are its main assets and are what prove it to be successful for these businesses.

Overall, one significant difference with SBEN is that it is a membership network and not just a support organisation offering a range of services. Due to this, it may be why those SMEs who are members have been so engaged in environmental issues, especially considering one of them now assists other SMEs in attaining ISO 14001 by giving tours of their site. Therefore, SBEN may have more of a capacity to engage and motivate as well as support SMEs to attain ISO 14001, although by the number of their members who have done this, it does not appear that this has occurred with many businesses.

4.4.4 Summary

Overall, the three business support organisations are all similar in that they receive government funding (to varying degrees) and that they each work with businesses, of all sizes, to assist businesses in various aspects of environmental management. From the interviews with SMEs, Groundwork and SBEN are viewed most favourable, however this is partly due to the fact that they offer more hands on support.

SBEN clearly has a unique role in engaging members, providing a network and being business led. There were clear examples of individuals from the SMEs being motivated to attain ISO 14001 due to their attendance at their events. The main barriers to all of the support organisations being able to assist more businesses are finances and their ability to market their services more effectively.

4.5 Example of the role customers play in influencing SMEs to attain ISO 14001

The majority of the SMEs with ISO 14001 had felt some form of pressure from one or more of their customers to implement ISO 14001 in order to maintain existing business. In order to investigate this fully an interview was conducted with a manager with responsibility for environmental management at the large manufacturer that had informed it's suppliers (a number of whom have taken part in this study) that it was looking to engage its suppliers to improve their environmental management.

The Health, Safety and Environment (HSE) Director requested that the interview should not be recorded therefore below is a summary with analysis of the interview from the notes that were taken.

The company is a large, multinational manufacturer with various sites across the UK and with a global supply chain, Over the past decade this manufacturer has seen a large increase in outsourcing and a significant decrease in the number of products manufactured in-house. The company manufacture 30% of products themselves and the other 70% are purchased from a wide range of suppliers.

The business achieved ISO 9001 accreditation and since 1998 has mandated that all different business units of the organisation have 3rd party certification and has since mandated that all suppliers are accredited with ISO 9001. All new businesses acquired must be externally certified within 2 years. They currently hold approximately 60 different certifications for all their sites.

Within the company there are various business units which have each individually implemented ISO 14001. If new businesses are acquired they must be certified within 2 years. The reasons quoted for them to do this is said to be down to being “the right thing to do”, it is growing in importance within the business, marketing and positioning of the business.

The company has implemented a fundamental policy to encourage all of their suppliers to implement and achieve ISO 14001. In 2003 there were less than 5% of their suppliers with ISO

14001, by 2006 this figure is estimated to be around 15% and they have the target in place for 50% of their suppliers to have ISO 14001 by 2012.

In order to assist in achieving this the company has been developing a programme to encourage and assist suppliers to implement an EMS, they have a number of supplier development leaders who work with businesses to raise awareness, demonstrate the processes of environmental management, make them aware of legislation and develop processes. Suppliers are sent literature aimed at raising their awareness and are offered a half day workshop for Managing Directors to get engaged and encourage them to participate in the "ACORN" programme. The ACORN programme is a staged approach to achieving ISO 14001. In 2004 they had 59 attendees at such workshops, in 2005 they had 134 and in 2006 they had 68 attendees. As well as the workshops, they have a "soft touch" review which the environmental manger makes clear is not an audit, where the director of HSE dropped into a few companies to see what they are doing, this has demonstrated a mixed levels of activities occurring amongst suppliers.

The company played an important part in the development of the ACORN programme with BSI. 8 of their suppliers took part in a pilot for the scheme and formed a club which the company facilitated. They spent 1 day every 6 to 8 weeks led by an environmental consultancy that broke down ISO 14001 to 6 stages with recognition for completing each stage. Smaller firms may only wish to get to stage 3.

The HSE Director describes their overall approach of engaging with suppliers as being a "slow drum" approach whereby they send a number of key messages at regular intervals to the suppliers trying to encourage them to make changes. The main messages they use to engage suppliers is the need to meet legislation, better business practices, "doing the right thing" and they give examples of suppliers with ISO 14001 as examples of best practice.

Whilst it appears that there is a clear desire to encourage suppliers to engage on environmental management issues, it is acknowledged that suppliers are still selected on cost, quality, delivery and responsiveness and that environmental performance is not looked into when selecting suppliers, although the business is starting to look into doing this.

The company themselves have not seen a great deal of consumer pressure for them get ISO 14001 and the reasons stated for why they have done this are along the lines that it is the right thing to do, that it is becoming a more important aspect of company and it is important for their positioning and marketing. A key issue for them is the potential risk to their reputation. The HSE Director explained how they are doing an increasing amount of business with suppliers in emerging markets such as China, Bulgaria, Latvia, Croatia and some of these could seriously affect their reputation. They have to work hard to develop their image and maintain it but can lose it very quickly. The HSE Director stated that he felt the environment agency loved to find a large, blue chip pollution breach and issue £10 million fine. If a supplier is in breach of regulations then it is this company that gets in the paper. The company currently has no plans for mandating suppliers to have ISO 14001 although can see this happening in future as has happened in some parts of automotive industry.

Although they have been actively attempting to engage with their suppliers they have seen many businesses not take up the assistance offered and therefore these businesses have not made any positive changes to their businesses. They have a lot of interest but many suppliers do not turn up to workshops and many that do only address the low hanging fruit. Those not engaged are identified as requiring more personal assistance and it is recognised that a better dialogue is required for these companies.

However this company recognises that they cannot do this alone and within their industry they are just one relatively small part; they see trade bodies as needing to do more and work with all businesses and the whole supply chain to bring about large scale and meaningful change.

The level of pressure that this company appears to exert on its suppliers varies from that described by company B. The manager from company B was very clear that they felt they had to attend the workshop and achieve ISO 14001 in order to maintain the business of this key customer, however the only evidence of this pressure that the manager could show was the literature explaining the ACORN scheme and outlining the aims of the workshop. It appears that whilst supply chain pressure played a crucial role in company B implementing ISO 14001 they would not have lost the business of this customer.

Company D who were also one of their suppliers and received similar literature regarding the workshop and assistance available but felt no pressure from them and as stated were motivated by internal factors, they were very clear that they did not see it as a requirement of doing business with them.

The interview with the large manufacturer also demonstrates a commitment that they have made to engage with their suppliers and support them. It is clear that with fairly ambitious targets and the network of supplier development leaders, literature, workshops and the use of the ACORN scheme they are doing far above the minimum in working towards “greening” their supply chain. However, they also demonstrate one of the main challenges businesses are facing whereby without mandatory action being required of suppliers there may be limits to the number that will be engaged. As suggested by the HSE director it is likely to require collaborative actions of industries as a whole through larger organisations such as trade organisations.

Overall, this business is an interesting case that adds to this research. It highlights the moves a large company is making to engage their suppliers in environmental management, the support they offer but probably most crucially for this research, they demonstrate that if a supplier does not have ISO 14001, then at present they would not lose their custom. It is still the case that cost and quality are far more important than environmental quality standards for this company.

What is also of particular interest is how the 2 suppliers of this company interpreted it's actions differently, one viewing the situation that they had to attain ISO 14001 and the other the opposite. There appears to be three groups of SME facing pressure from their customers': those who do not perceive ISO 14001 to be a requirement of doing business, those who are unsure and those who attain it as they perceive it to be a requirement of doing business or view it as too big a risk not to have it.

4.6 Summary

Overall, this chapter has outlined the common characteristics of SMEs with and without ISO 14001. In terms of addressing the aims of the study it has identified factors that motivate and enable SMEs to attain ISO 14001, i.e. supply chain pressures, leadership, support and experience

of management systems. It has given accounts of the SME managers of their experiences of ISO 14001, the process they went through to achieve it and their perceptions of it and any benefits that may have occurred.

The analysis has also highlighted a range of factors that can act as barriers to SME attaining ISO 14401, i.e. financial cost (perceived and actual), lack of manpower, lack of expertise in company, compliance with regulations ad lack of perceived benefits. For the 4 SMEs without ISO 14001 these factors were attributed to be part (if not all) of the reason they did not have it. Similar issues were faced by the SMEs with ISO 14001 but they were able to demonstrate how they had overcome them.

The following chapter will bring these findings together and compare the SMEs with and without ISO 14001. It will identify what motivating factors were present within the SMEs with ISO 14001 that were not present in the other group. The following chapter will then look at the findings and compare them to the model developed in the literature review and will develop and build upon this model to reflect this study's findings.

5. Discussion

The previous chapter set out the experiences and attitudes of the various managers from the SMEs with and without ISO 14001. It then identified what the key factors were that motivated and/or enabled some to successfully implement the EMS. It also identified the challenges that these businesses faced and any benefits to the business of having ISO 14001. The barriers preventing or not motivating the others without ISO 14001 were also identified In this chapter these findings will be discussed in terms of what the key differences are between those with and without ISO 14001. It will then compare the findings of this research with the previous studies identified in the literature review and analyse if the model presented at the end of the introduction has been shown to be the reason why SMEs may get ISO 14001.

This chapter will also look at what the implications of these findings are for SMEs without ISO 14001, policy makers and larger businesses at the top of supply chains. The chapter will conclude with a discussion of the future research required in this area.

5.1 Comparison of SMEs with and without ISO 14001

5.1.1 Summary of SMEs with ISO 14001

This research found that there were four main factors found to influence SMEs decision to chose to adopt ISO 14001. These were supply chain pressures; leadership; support and the companies' history and experience of accredited management systems. Out of the SMEs with ISO 14001 who took part in this study it appears that supply chain pressures were the most influential factor in the majority of the businesses obtaining ISO 14001. However, not one of the SMEs in the study obtained it due to just one of the four factors, there was evidence of each business having a combination of at least two of the four factors driving and/or enabling them to successfully obtain the accreditation. With supply chain being the most significant motivating factor, the available of affordable support and expertise appears to be the most significant factor in enabling and assisting them to successfully attain ISO 14001.

The main challenges to the process of obtaining ISO 14001 appeared to be limited resources: both financial and manpower, a lack of knowledge and expertise in within the business and in many cases little perceived benefits other than potentially maintaining business of current customers and in the tendering process potentially winning new business.

5.1.2 Summary of SMEs without ISO 14001

The SMEs that had not obtained ISO 14001 all had faced little if any pressure to obtain it. Those that had faced pressures from their customers (larger businesses they were suppliers to) did not currently see the pressure as great enough to invest resources in attaining ISO 14001. There was evidence within some of the businesses of there being a degree of personal motivation from the managers to attain it but due to the perceived high costs and few perceived benefits they did not do so. Of the 4 SMEs in this group, 3 stated that they felt the business would go down the route of being accredited for ISO 14001 at some time in the future. The main reason being that, in a similar way to ISO 9001 it would become a necessity of doing business.

5.1.3 Key differences between the two groups

The main difference between the SMEs with ISO 14001 and those without appears to be down to the existence or absence of the four factors: supply chain pressures; leadership; support and experience of accredited management systems. Of the four SMEs without the accreditation there is little evidence from their interviewees that these factors exist within their businesses to a significant degree.

Company K, the steel press manufacturer that supplies the automotive industry demonstrated that it had faced the largest degree of pressure of the four SMEs but that this pressure had come and gone and that as long as they stated that they were looking at obtaining the accreditation they continued to obtain and maintain contracts with its customers.

In all of the SMEs with ISO 14001 that faced pressure from suppliers the managers of these businesses believed that they could potentially lose business if they did not obtain ISO 14001. The difference in terms of supply chain pressure for the two groups of SMEs may be down to the

nature and size of the businesses in this sample. Companies I, J and L are all relatively smaller businesses and companies I and J do not manufacture the product they sell, this appears to be a potential reason why they have not faced pressures from suppliers. It could be that in order to generalise any of the findings of this research that this is done with respect to SMEs size and sector as both may influence their likelihood and ability to attain ISO 14001.

Companies J, K and L all supply the automotive industry which from this study appears to be a major driver in pushing change amongst SMEs environmental management (at least for the SMEs in this study). Company J appears to have not faced this pressure as they provide specialist technical solutions which the automotive companies require and because they are not manufacturing traceable parts for the manufacturers products and instead provide technical solutions. Company K is perhaps the most interesting SME without the accreditation as it is very similar to Companies B, D and H in that it supplies products to the automotive industry.

Company K is especially similar to Company H as they are both Birmingham based metal pressed parts manufacturers who's main customers are large automotive manufactures. In terms of pressure the main difference seems to be the managements' perceptions of the industries requirements and how their perception of the risk of not possessing the environmental standard. Company H believing that they would definitely lose business if they did not obtain ISO 14001, whereas Company K gave the impression of getting away with not having it by showing some interest and a intention of being in the process of attaining it, even though they were not. They have been doing this for a while and have now seen the pressure applied by their customers as reducing, although they do believe it will increase again and at some point will be a requirement for them to do business.

In terms of leadership, the main difference between the SMEs with and those without ISO 14001 appears to be that none of the interviewees from SMEs without ISO 14001 appeared to have someone within the business who had a particularly strong motivation to attain it. Any motivation they did have was prevented from being acted upon due to the perceived high costs involved with little, if any perceived benefits. Managers from companies J, K and L did have an appreciation for environmental issues and discussed how they personally tried to reduce their environmental impacts but companies J and K did not view obtaining ISO 14001 as being financially feasible

and did not anticipate that the accreditation would generate profit for them. The managing director of Company H was not aware of the cost of obtaining the accreditation and was not certain of any benefits that may result from it, furthermore the managing director was clearly quite sceptical of the environmental agenda and businesses role in reducing their environmental impacts, he did not see what difference he could make when the products being produced from the parts he manufactured were cars, which would pollute no matter what he did.

There is evidence to suggest that a significant difference between the two groups of SMEs is due to their awareness of and access to affordable, suitable external support. Companies I and J both stated that they were not aware of any support available and Company K stated they were aware of some support that they had used to obtain ISO 9001 and that they had approached the consultants they used for this in order to look into ISO 14001 but he was not aware of any of the business support organisations such as Groundwork or Envirowise that many of the other companies in this study had used. Company L was aware of some support and funding but this was fairly limited compared to many of those with ISO 14001, the managers from Company L made it very clear that in order to progress and reduce many of their impacts they would require assistance and especially funding to make large changes to their processes.

For some of the companies with ISO 14001 there was some evidence that part of their decision to obtain it was down to the fact they already had ISO 9001 and that they viewed the accreditations as something that they needed to obtain as they were becoming industry standards. In none of the companies in this study was this seen as a strong influencing factor. Of the four SMEs without the accreditation three of them had ISO 9001, these were companies I, K and L. These three had obtained the quality accreditation as it was a standard that the industries they were in expected them to have and that they would not be able to do business without it.

Company J did not have the accreditation but of the three companies it used to manufacture products it designed it was aware of one with ISO 9001 and used this businesses for any customers that required it, although most customers did not enquire about the quality accreditation. Of the four SMEs without ISO 14001, companies I, K and L all acknowledged that at some point in the future ISO 14001 would be likely to become like ISO 9000 and become an industry standard that they would require to do business and this may lead them to obtain the

accreditation however due to the size and nature of company J, the managing director felt this unlikely to occur with them.

The company narratives and the subsequent analysis has shown that the 8 SMEs with ISO 14001 have all followed different paths to obtain it, however there appear to be four key factors that have either motivated and or enabled them to do so. Leadership and supply chain pressures both acted as motivations and support and their experience of accredited management systems help enable them to do so. Leadership in the form of an environmental champion was also a strong enabling factor for many.

The SMEs without the accreditation all seemed to be less motivated to do so due to less external pressure and not as strong leadership in this matter and due to various barriers: perceived costs, lack of knowledge, being compliant with regulations and expertise and few perceived benefits they were prevented from getting ISO 14001. Those with ISO 14001 on the whole had faced similar barriers but due to the previously discussed enabling factors they were able to overcome these barriers.

As has been briefly discussed one has to be careful when generalising the above findings to the wider population of SMEs. It would appear that factors such as sector, company size, whether they manufacture own product or purchase it from supplier may all affect their desire and ability to attain ISO 14001. Within the scope of this study and with the size of sample it was not possible to account for such factors or build them in to the research design. It should also be noted that due to the geographical restrictions of the study there may be other factors that limit the findings generalisability. Factors such as other regions may have different levels and forms of support available and different region's environmental agencies may have a greater amount of presence amongst SMEs then others. Therefore, some appreciation of local issues is required to generalise the findings beyond the West Midlands.

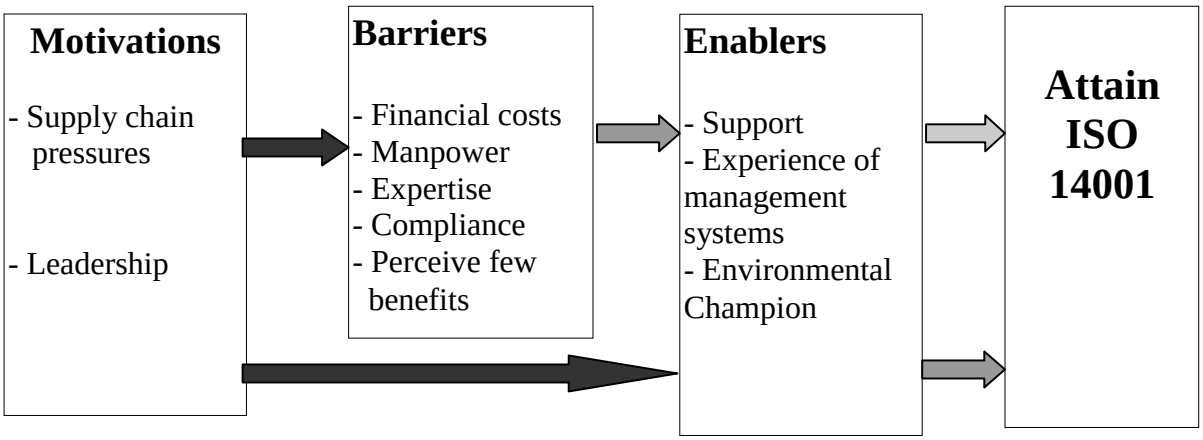
Having said this there were common factors that support the existing literature that are likely to effect the majority of SMEs, namely the role of leaders and environmental champions within the business, the level of resource the company has to devote to an environmental management system and it would appear the growing number of SMEs being asked questions regarding their

environmental management by customers, therefore these key points are likely to apply to the vast majority of SMEs.

5.1.4 Model of motivations and enablers for SMEs to attain ISO 14001

As stated in the previous section, each of the SMEs in this study had undertaken different routes to getting ISO 14001 and had faced different barriers and challenges. Due to the different approaches it is difficult to develop a model that shows the routes SMEs take, however, it is possible to develop a model which shows the motivations, barriers and enablers and demonstrate and the effects these can have on SMEs desire and ability to attain ISO 14001. This model is below and will be followed by an explanation and discussion.

Figure 17: Model of the motivations and enablers for SMEs to attain ISO 14001



The model demonstrates that on the whole SMEs (at least in this study) require some form of motivation to start the process. This is either external pressure (supply chains) or internal motivation (leadership). These two factors are not mutually exclusive and different SMEs will have different degrees of each or will only encounter one. With the motivation some SMEs will not face significant challenges or barriers (bottom dark arrow), they will be able to attain ISO 14001 due to support or internal knowledge and expertise due to past experience of either ISO

9001 and/or ISO 14001 with a previous employer. With these enabling factors some of the SMEs will then be able to attain ISO 14001.

The other route (the top arrow) that most of the SMEs in this study faced was that with some motivation they then faced barriers. For some of the SMEs these barriers prevent them from attaining ISO 14001 for others they are able to due to access to the enabling factors.

The model is fairly simplistic due to the fact that certainly with SMEs there do not appear to be set routes whereby for example certain types of company will face a particular set of barriers and then access certain support. Instead due to the heterogeneous nature of SMEs as a group, it is more accurate to state that they will face a combination of the various factors.

Comparing this model to the one developed in the literature review, the main differences are that regulatory compliance was not seen as a motivating factor in the above model, instead it was seen as a significant barrier to SMEs attaining ISO 14001. Also, there was little evidence of competitive advantage being a motivating factor as was identified in some previous studies. The main difference between the two models is the distinction in the above model of barriers and enabling factors. In the above model many of the factors that were seen as potential enablers in the first model are now barriers. The reason for this is that for some SMEs these were not an issue or were seen as a challenge to overcome, whereas at least one of the enabling factors in the above model was required by each of the SMEs in order to successfully achieve ISO 1400.

This model demonstrates that this research has addressed the objectives and aims of the study set out in the introduction. It has identified the factors that motivate and enable SMEs to attain ISO 14001 and it has identified the common barriers that prevent others.

The discussion will now move on to reflect on the previous research which was outlined in the literature review and compare this study's findings with what others have found.

5.2 Comparison of findings with previous research

The literature review concluded that research into the subject of SMEs and environmental management showed that there was a range of possible factors that would either motivate, enable or challenge SMEs when achieving ISO 14001. These factors were: management attitudes; regulatory compliance; environmental leadership; expertise and available resources; support and supply chain pressures. What was not evident in the research was a distinction between the motivations, enabling factors and the barriers.

Of all the studies that were discussed in the literature review, one of the most interesting in relation to this study's findings is the model of ecological responsiveness proposed by Bansal and Roth in 2000. In terms of the outputs of this research and the model that has been developed and discussed previously, Bansal and Roth's model is the most similar in terms of identifying why and how businesses "go green". Due to the fact that they developed a similar model to the one in this research, this discussion will focus in detail and explain the similarities and differences of the two models.

Bansal and Roth stated that competitiveness, legitimation and environmental responsibility were the main motivations for businesses to take action and reduce their environmental impacts. It is important to remember that this model was constructed after studying large businesses and that it focused on ecological responsiveness and not the adoption of ISO 14001 although it could be argued that there are similarities between the two concepts.

It would appear that there is a considerable difference between Bansal and Roth's model and the model constructed in this study. In their model Bansal and Roth claim that businesses are motivated to undertake activities to reduce their environmental impacts firstly due to competitiveness through activities like process intensification, green marketing and green products. Interestingly the only company in this research that had developed a green product and marketed it's green credentials was Company I which had not achieved ISO 14001.

Of those that were motivated by supply chain pressures there is a certain degree of competitiveness as the businesses were either gaining it in order to maintain the business of its

major customers or in some cases did it because they were aware that it was a consideration in the tendering process. However, as has been stated the level of competitive advantage . Also, some of the SMEs undertook ISO 14001 as a reaction to direct customer pressure, whereas Bansal and Roth suggest businesses undertake environmental initiatives more pro-actively as gaining a competitive advantage over others.

The second motivating factor in Bansal and Roth's model is legitimation with businesses pursuing regulatory compliance and networking with environmental interest groups. Whilst the issue of regulatory compliance was an important issue for all of the SMEs that were ISO 14001 accredited in this study, it was more of a challenge that they had to overcome in order to gain the accreditation rather then something that motivated them to do so. The reason for the difference between the models would appear to be down to the difference in size of the businesses in the two studies, Bansal and Roth had a sample of large businesses for which regulatory compliance would be important as they would face scrutiny of their environmental activities from the regulator and environmental interest groups. The businesses in this study's research were all considerable smaller then the businesses in Bansal and Roth's studies and as has been discussed are therefore less likely to be aware of environmental regulations and are likely to not be meeting the legal requirements, they will face less scrutiny from regulators and from environmental interest groups.

The only exceptions to this were companies A and C who were reasonably up to date with environmentally regulation and therefore for them an advantage and motivating factor of having ISO 14001 was that they could demonstrate their legitimate environmental activities. Company L was also up to date with environmental regulations, however this was only due to them being able to pay a consultant to do this work.

The third motivating factor in Bansal and Roth's study was environmental responsibility that was driven by ecological values and resulted in activities like donations to environmental causes and unpublicised initiatives. Once again, most likely due to the difference in size of the companies in the two studies, there was a clear difference with none of the managers in this research identifying any activities that did not relate to their business, none discussed donations or initiatives to environmental initiatives. This is likely to be due to the fact that the larger company

will face greater pressure to be seen to helping their local community and to be making donations in order to offset some of their negative activities. Smaller businesses are not likely to be effected by public perception of them and environmental interest groups are far less likely to focus on a smaller businesses activities.

This does not however mean that the managers in this study did not express to varying degrees ecological values. Many stated that they were aware of environmental issues and felt some responsibility to take action to address them, however as stated they viewed their businesses environmental impacts as being proportionate to their size and did not perceive that ISO 14001 would make a great deal of difference to the business' negative impacts on the environment.

One of the reasons why there are differences between Bansal and Roth and this study's model could be because ISO 14001 does not necessarily equate to ecological responsiveness. In fact some of the managers in this study clearly stated that there was very little differences to the businesses activities since gaining it and none of the manufacturing companies drastically changed their manufacturing processes. This is not necessarily surprising as for those SMEs who gained ISO 14001 due to supply chain pressure they were reacting to a business need, therefore ISO 14001 may not be a central part of the whole business' overall management system and therefore decisions may not necessarily take into account the environmental considerations. Instead in many of these cases ISO 1400 could be seen to be little more than a tick box exercise with the business doing the minimum to achieve and maintain it and therefore the minimum to improve their environmental performance.

For those companies who were motivated internally by environmental leaders it is more likely that the environmental management system could become central to the businesses operations, however in this study this did not seem to be the case for the majority of companies. For small businesses the financial bottom line was far more crucial to them than the environmental bottom line and in some cases there were example of possible activities to improve the businesses environmental impacts as being shelved due to financial situations becoming more difficult. Within the scope of this research it is not possible to fully assess the extent to which ISO 14001 equates to ecological responsiveness and this is an area in need of further research.

The comparison of the existing literature with this study's findings will now look at the range of issues identified in the literature review and discuss these in relation to this research's findings. All of the SMEs in this study expressed the view in some form that they perceived their business' environmental impact as small and that, this was regardless of the size of business or industry they were in. This supports the various studies that had found this to be the case that are discussed in the literature review such as Revell & Rutherford (2002) and Holland & Gibbon (1997). Of the eight SMEs with ISO 14001 all of the managers interviewed showed some enthusiasm for pursuing activities that would improve the environment performance of the business and many gave the impression that they had gained this enthusiasm and new perspective having gone through the process of ISO 14001 with one of the managers stating that they had "seen the light". Therefore even if the managers did not undertake ISO 14001 due to their own attitudes regarding businesses' role in protecting the environment it seem that ISO 14001 had in some cases affect the managers attitudes towards their environmental activities although this was not the case for all managers in this study.

The literature review also discussed how SME managers often did not view environmental management as producing business benefits with them not perceiving it to bring a competitive advantage to the business and instead was a cost which they could not pass on to their customers as discussed by Taylor et al., (2003). The SMEs in this study support this view with all of the managers from SMEs without ISO 14001 stating that they did not perceive there to be a competitive advantage of having ISO 14001 and that they did not believe it would bring about significant cost savings. It was not perceived by any of these managers that any savings would cover the large perceived costs of achieving ISO 14001 accreditation.

The majority of SMEs with ISO 14001 had done so due to supply chain pressures, therefore for these businesses here were perceived business benefits in terms of maintaining business with their customers or potentially winning new business in tendering processes. According to the SMEs in this study in tendering processes there are an increasing number of questions about the supplier's environmental management. However, for the majority of these SMEs, the extent of the business benefits was not known to them. They were unaware of how much of a competitive benefit having ISO 14001 was or whether they would have maintained the same level of business

without it. Also, only one of the eight SMEs with ISO 14001 used the management system as a marketing tool to try and attract new customers.

Having attained ISO 14001 all of the businesses to some degree had seen some business benefits such as reduced energy and materials costs, however all the managers stated that these benefits had not been perceived at the start of the process. Even with the potential that having it has maintained or even created new business and that there are efficiency savings, one of the SMEs state that if the idea of ISO 14001 had been raised now they would not go for it as they are facing financially difficulties.

What is striking in this study's findings is the way that the majority of the SMEs decided to attain ISO 14001. Those where the main motivation was internal due to key individuals in the management team seemed to have little perception of how it would strategically benefit them. Also, those who attain it due to perceived pressure from their customers did not appear to have engaged with their customers in regards to how important an issue this was. Many had had to invest significant amounts of time and money into a process that they were unsure of in terms of the definite business benefits. It could be argued that apart from potentially maintaining the business of their customers and being able to tick a few more boxes on a tendering form that there was a lack of strategic thinking from many of the SMEs. This is especially true of the SME which is now facing significant financial difficulties and cannot demonstrate the level of benefits ISO 14001 has brought to the company.

The strategic approach of these SMEs is also interesting in relation to Tilley's (1999) research. In this, Tilley suggested that there were four strategies that smaller business may adopt with regard to environmental management, these were: proactive, reactive and resistant. It could be argued that the research in this study shows SMEs which have adopted each of these strategies. Those without ISO 14001 on the whole appear to be resisting pressure for them to implement an EMS and those who have undertaken it. Those who undertook it due to customer pressure appear to be reactive and those who did it due to internal motivation could be argued to be the most proactive. However, one of the significant questions that is not within the scope of this research is the degree of impact ISO 14001 has had on SMEs environmental performance. To take a strategic approach according to Tilley, a business should be proactive and have an ongoing commitment to

improve their environmental performance. It is hard to be able to confidently say that any of the SMEs are doing a great deal more than maintain ISO 14001 (especially those who stagger initiatives to be able to demonstrate continual improvement for each audit). Whilst many were able to show efficiencies, most could not demonstrate the degree to which these activities had significantly made a difference to their negative impact on the environment.

In this way the research reinforces the idea that many smaller firms fail to write down a formal plan or business strategy beyond the short term and that they have limited strategic awareness and management as discussed by Gibb and Scott (1985). The SMEs without the accreditation support the findings of Taylor et al., (2003) with none of them believing there to be a strong strategic advantage for them to gain the accreditation.

As has been discussed in some detail already the strongest motivating factor for these SMEs to achieve ISO 14001 was supply chain pressures. It was the only factor that when present in some of the SMEs meant that the management felt that they had to get ISO 14001 in order to continue doing business with its customers. Of those without it, there was a clear lack of any strong form of pressure from their supply chains. Hill (1997) had suggested that larger businesses could benefit from applying pressure onto their supply chain in order to boost their own environmental credentials but that there was not a great deal of evidence of this occurring in 1997. It would appear from this research's findings that in the following decade this had occurred and that this was one of the leading factors in smaller businesses deciding to attain ISO 14001. This study supports the research by Hadfield et al., (2005), Hall (2000) and Biondi (2000) that demonstrated that there was a growing trend for larger businesses to look at their supply chains and apply pressure on their suppliers to implement environmental management systems.

In the literature review Young (2000) stated that for larger businesses to successfully manage and reduce the negative environmental impacts of its supply chain, there needed to be a process whereby support was offered by the larger business to its suppliers and that information on environmental issues needed to flow along the supply chains. The findings of this research would suggest that with the exception of one of the SMEs, this has not been the case and that most of the smaller businesses in this study that were pressurised into getting ISO 14001 by their

customers were not supported or given information from their customers and that often they were required to seek support themselves.

In the literature review there was a strong consensus that smaller businesses on the whole have a poor knowledge and understanding of environmental regulations (Merritt 1998 and Rutherford et al., 2000). This study reinforces this idea as in all but two of the SMEs that had obtained ISO 14001 the managers stated that during the process of being implement the management system they had found that they were not meeting certain environmental regulations and that some could have potentially led to prosecutions and large fines.

On undertaking the ISO 14001 many of the SMEs in this study found making their business comply with all environmental regulations to be one of the biggest challenges. This supports the findings of The Federation for Small Businesses (2002) which stated that smaller businesses view the government negatively and were concerned about the complexity, volume, rate of change, inspection and enforcement of regulations. The managers in this study on the whole were fairly ignorant of environmental regulations and on undertaking ISO 14001 discovered that they were not meeting all regulations and therefore had to make changes to their business activities.

When questioned on regulatory compliance and environmental legislation many stated that they found it difficult to keep up with new and changing legislation, this would again support the findings of The Federation of Small Businesses. The businesses that had to make considerable changes to their activities and invest money into making processes and facilities were those that had adopting the accreditation due to supply chain pressures and therefore felt they had no choice but to do it.

As has been stated in the analysis and in the previous sections of this discussion, environmental leadership played a vital role in gaining ISO 14001 for a number of SMEs in this study. In the literature review it was stated that Friedman and Miles (2001) saw the existence of a "green champion" in the business as the key motivator in many best practice examples of corporate environmentalism in SMEs. Even though this study found supply chain pressure to be the most influential factor in making SMEs achieve the accreditation, this study does support Miles findings as many of the SMEs in the study did have environmental champions who in many case

did appear to be a key factor in the business successfully attaining and maintaining ISO 14001. However one difference between this study and Miles is that in almost all cases ISO 14001 was attained in a large part due to customer pressures, in many cases one of the existing managers (e.g. production or quality manager) then also became responsible for the environment and in some of these cases that individual then evolved into an environmental champion. Therefore in many cases the environmental champions were not the main motivating factor but did enable the business to be able to achieve and importantly maintain it.

Prakash's (2000) research discussed in the literature review investigated the role of power in leaders to push through adopting environmental policies that did not necessarily generate profit. In this study where supply chain pressures existed to a significant degree the only evidence of power being used were in the cases where managing directors instructed other managers (for example the health and safety manager) to also deal with the environmental management. There were no strong cases for an environmental champion using power to make the SME adopt ISO 14001, instead where environmental champions did have an influence on the decision to gain it , this was usually in firms where there would not be a large cost associated with it. There were some examples of managers creating a change in the workforce culture and adopting more environmental responsible activities and this would support the research by Selznick (1957); Senge (1994) & Weick (1995) who stated that leaders have the ability to build a shared vision and to foster systematic and long-term patterns of thinking through dialogue.

Walley & Stubbs' (2000) study of SMEs discussed in the literature review identified the various tactics that are employed by an environmental champion, such as: networking, a sense of audience, agenda transition and greenjacking that all proved central to SMEs improving their environmental performance. The SMEs in this study differed in terms of their environmental champions' management styles and influence. There were some who did become members of organisations such as The Staffordshire Business Environmental Network and therefore networked with other organisations and learnt from what other businesses were doing. However, on the whole most of the environmental champions had little resistance to change from the workforce, with many aware of environmental issues and the environmental champions used training and involved the workforce in the environmental management process to encourage and improve the environmental performance of the workforce and the business. One possible reason

for this is that in the decade since Walley and Stubb's research environmental issues come to a much higher prominence in politics and in the media, therefore employees (regardless of their attitudes to the environmental agenda) may be more accepting of the idea that businesses need to be improving the management of their environmental impacts.

In the literature review it was discussed how Hillary (1999) found that internal barriers to environmental management system adoption were more important than external ones. She found the lack of human resources rather than financial ones as the major internal barrier to their implementation and that this became increasingly important as the size of the company decreases. There is evidence of this in this research with many of the managers stating that they required external assistance in order to be able to implement the EMS. Many also stated that the time and manpower required was significant and in some cases more significant then financial resources. However, on the whole financial resources was still an important factor in the SMEs being able to adopt the accreditation with some of the managers stating that the financial costs of gaining the ISO 14001 were higher than they had anticipated and was a significant challenge for them. For those without ISO 14001, the financial cost was given as the most significant barrier for most of them.

This research also supports the findings of Biondi et al. (2000) who found that SMEs faced a number of financial costs in implementing an environmental management system: costs relating to necessary technical measures to guarantee the improvement of environmental performance; costs relating to EMS implementation and costs incurred in obtaining third-party verification. In this study the largest costs for many of the businesses was meeting the requirement of ISO 14001 that they have to meet all environmental regulations, in many cases this meant investing tens of thousands of pounds to improve their processes.

The consensus of research in the literature review stated that smaller businesses were not seeking support in order to improve their environmental performance and that on the whole it was essential that support offered was affordable, local and that it was relevant to the business' size and industry. This research demonstrates that support for the smaller businesses in this study is a key factor in being able to achieve ISO 14001. Many of the firms had used business support organisations such as Groundwork, Envirowise and the Staffordshire Business Environmental

Network. All of the businesses that had used these organisations emphasised the lower financial costs of their services compared to a consultant as enabling them to be able to take on their help. On the whole the support offered to these businesses in this study was seen as being helpful and affordable, although some managers did question the expertise of this help in terms of the individual needs of the business in its specific industry. Those SMEs without ISO 14001 were on the whole unaware of the range of support available and the only form of external expertise and assistance they had received was consultants who they regarded as expensive.

Smith et al., (2000) stated that more work needed to be done by business support organisations to promote the cost savings SMEs can make and the various business benefits. On the whole this study would suggest that this has not occurred in the years since Smith et al.'s research was conducted. Most of the SMEs in the study approached the business support organisations in response to the perceived pressure from their supply chain or because of a motivated manager within the organisation. On the whole, the SMEs in this study did not begin the process of attaining ISO 14001 due to the benefits being demonstrated by a business support organisation. This was even though there were many cases where the managers had received information (mainly in the form of literature) from these organisations. On the whole the managers stated that such literature was not always relevant to their work and they were not convinced by the potential benefits that could come about form the accreditation. The interviews with the business support organisations also reinforce this idea as each of them admitted that one of their main issues was a lack of resources to market what they could offer to businesses.

Overall, the findings of this research has added to the existing literature on this topic by reinforcing some of the current thinking in this area (e.g. SMEs awareness of environmental issues, perceptions of their impacts and knowledge of environmental regulations). The findings also shed new light on to some of the emerging issues such supply chain pressures and how smaller businesses react to them. The model that has been developed demonstrates that, perhaps unlike larger firms, smaller firms face a wide range of different factors and challenges in terms of their environmental management and each will have very different structures, experiences, internal motivations and expertise. But what has been found is that there does appear to be two key motivators for change in the form of external pressures and internal motivations and that

there are a wide range of barriers that the majority of SMEs can only overcome with the assistance of support or from their previous experiences.

One of the main ways it is felt this research adds to the existing literature is by giving the detailed narratives of the SMEs. As has been stated, much of the research on this topic is quantitative in nature and by giving these accounts, it adds to our knowledge of the unique and differing attitudes and experiences that SMEs may have.

Since undertaking this study there has been a growing number of studies investigating various aspects of SMEs and environmental management. There are a wide range of studies that have been undertaken in other countries often with specific sectors. One example is Tsai & Cho (2009) who identified the limitations on SMEs, such as resource constraints and assessed the various forms of environmental management and developed a method for identifying what approaches to environmental management would best suit various SMEs. Whilst such studies offer insights into the experiences of these SMEs they are not particularly comparable to this study's findings. On the whole due to the differences in the way environmental standards are promoted by different governments, the differences in the level of regulation, support and other such factors it makes comparisons between SMEs in UK with other countries difficult.

One recent study with similarities to this research was conducted by Heras & Arana (2010) investigated two groups of Spanish SMEs. One group had ISO 14001 and the other had the Ekoscan standard. This standard is similar to ISO 14001 and was developed in 1998 in the Basque Autonomous Region of Spain, the main differences are that reaccreditation takes place more often and unlike ISO 14001, there must be evidence of actual improvements in environmental performance. Heras and Arana in their review of past research identify in a similar way this research did that there is a large amount of research focused on the issues of motivation, obstacles and benefits of adopting an EMS such as ISO 14001 but the majority of these studies only focus on larger businesses. The main difference between Heras and Arana’s research and this project is that they look at the motivations, obstacles and benefits of ISO 14001 against the alternative standard.

What is of interest with Helmas and Arana's research is that the main motivations (in order of importance) for SMEs to obtain ISO 14001were: improvement of environmental situation of company, customer demands compliance with legislation and improvement of external image of company. The only factor that appears in both Helmas and Arana's study and this research was customer demand which Helmas & Arana found to be a motivation in only 22.1% of respondents. The barriers identified by their research were all similar in nature to those identified in this research.

There are various reasons why the outcome of their research differs to this study. Firstly, as was stated at the start of this section, there are issues comparing studies of SMEs from different countries. With this research looking at a specific area of Spain there could be different circumstances affecting these businesses. For example there could be different types and levels of support and environmental regulations may be more tightly enforced amongst SMEs in this region. Also, the research methodology differs from this study. By using a survey the research may not have uncovered the true reasons why businesses acted as they did. As stated in the methodology and supported by Meredith (1998) in order to understand the "why" of a situation as well as the "what" and "how", case studies are best suited to uncover this.

There have also been a growing number of studies have looked at the wider issues of sustainability and SMEs, such as Stubblefield et. al. (2010). They investigated the approached that can be taken to engage SMEs in strategies that improve the social and environmental sustainability of their business. Their paper is a reflection on the literature in the area and does not provide any empirical data or new evidence on the subject matter. Their main findings are that SMEs are not the same as larger businesses and need to develop a different business case to larger businesses in order to justify investment (financial and time) in environmental management. They also suggest that support and tools need to be developed that suit smaller businesses that differ in terms of resources to larger businesses. These findings on the whole do little more than support past research undertaken. These findings would also support this research project's findings with regards to SMEs requirement for specified support. Their study used questionnaire to survey 169 businesses with either of the standards.

A study by Bos-Brouwers (2010) of SMEs in the Netherlands found that SMEs who could demonstrate innovations around sustainability issues tended to be focused around efficiencies in their processes with the aim being cost savings. For SMEs who could demonstrate that sustainability had been fully integrated into their business processes innovation processes demonstrated value creation through the development of products new to the market (radical innovations) and cooperation with stakeholders. Looking at this study in relation to this research there were no examples of such innovations within this study and one reason could be that ISO 14001 has not necessarily meant that sustainability issues are fully integrated into their business processes. There are some limitations to the comparisons though as Bos-Brouwers research focused on a very specific sample (26 Dutch SMEs in rubber and plastics manufacturing sector) and these companies were at the time of the research taking part in a project to improve their environmental performance, which may have influenced the outcomes of the study.

Overall, within this field there still have not been a significant amount of research undertaken looking qualitatively at the motivations and challenges facing SMEs to obtain ISO 14001 and what research has been undertaken often cannot directly be compared to this study's findings.

5.3 Implications of this research

Having discussed the findings of the research and compared those findings to the studies discussed in the literature review, it is now necessary to look at what the various implications are of this research.. In this section the findings will be discussed in the context of how they can be utilised by SMEs, supply chains, business support organisations and policy makers and regulators.

5.3.1 Implications for SMEs

This study has detailed the challenge that a number of SMEs have faced in order to achieve ISO 14001. This in itself is important as in the literature on small businesses and environmental management there are not enough cases highlighting and detailing how businesses have achieved the accreditation. What is also important is that this research demonstrates that on the whole most small businesses benefited in some way through becoming achieving ISO 14001. The most

visible benefit was in the form of financial savings through reduction in material and energy use and the reduction in waste. Again it is important that there is evidence of business benefits as in the literature it suggests that most small businesses see the accreditation as just a business cost with no business benefits however there is evidence of this not being the case in this study.

Having said that, it should be stated that this study has focused on the perceptions of managers from SMEs and on the whole most of the company's did not have evidence available to back up claims of business benefits such as efficiency savings. Even the manager of one of the businesses that could, was not able to state whether the savings equated or surpassed the cost of gaining ISO 14001 financially and in terms manpower.

What does appear apparent for SMEs is that the pressure from customers is only going to grow. Three of the four SMEs without ISO 14001, stated that they felt at some point it would become the norm for them to have to do it to do business with larger customers. Therefore, it is crucial that SMEs without ISO 14001 are able to anticipate this and understand what the current and future demands from their customers will be and ensure they have the resources available to implement ISO 14001 should they need to in the future.

5.3.2 Implications for supply chains

More than any other factor, this study found supply chain pressures to have the strongest influence on motivating SMEs to attaining ISO 14001. The implications from this study for large businesses at the top of supply chains are that firstly most SMEs who faced this pressure were unclear about the extent to which ISO 14001 was a prerequisite of doing business with them. This uncertainty meant some companies immediately spent money and resources undertaking it, whilst others did not see it as essential and continued doing business without it. With the differences in supplier's perceptions and reactions, there is a risk that SMEs who may be seen as key suppliers become at risk in terms of their profitability, due to undertaking ISO 14001 when they may not have the resources to do so. Also, it could damage the reputation of the large business if suppliers discover that some of their competitors are still doing business with them without ISO 14001. For a large business that has invested its resources in identifying suitable and reliable suppliers it may not want to risk the business of the suppliers or alienate them. Therefore, one implication for

businesses at the top of supply chains is that they should work in a more transparent way and the requirements for their suppliers should be made clearer.

Another implication for supply chains is that there is a need for more support to be provided by large businesses who apply pressure to their suppliers. In this research only Company B received support in the form of a training seminar from the business they supplied parts to. With an apparent growing number of larger companies looking to improve the environmental performance of their supply chains and with many smaller businesses lacking the necessary resources to be able to achieve ISO 14001 on their own it means that support is needed in order for this to occur. This support may come from a business support organisation but there is an argument that larger businesses have a role to play in guiding their suppliers to gaining the accreditation. The example of the customer of company B demonstrates that there is progress being made by at least this large manufacturer in engaging and supporting its suppliers and clearly they have dedicated some resources (financial and manpower) to achieve ambitious targets. The reason why a large business should consider this is that there is likely to be growing attention placed on large businesses supply chains (as mentioned in the interview with the multinational company). It is in the businesses interest to maintain their suppliers who meet their requirements on quality and cost as well as being reliable and assist to develop their knowledge and skills in environmental management. It is likely that this will prove more cost effective then seeking out completely new suppliers with ISO 14001 and in some cases the goods supplied may be specialist and there may be a limited number of possible suppliers.

Another reason why larger businesses may wish to engage their suppliers and support them in this process is that if smaller firms do not bring about efficiencies in their energy and resource use then as reserves of natural resources diminish and the cost of energy and raw materials increases, then the costs of their products and services may increase. Therefore, due to the risks of increased costs from the customers they have an interest in improving the efficiency of smaller firms who supply them.

One issue with the example of the customer engaging their suppliers is that it highlights how the majority of SMEs are reluctant to implement such an environmental management systems and this raises the question of how on a larger scale this can be achieved and whether it is through

ISO 14001 becoming mandatory for all suppliers and/or whether bodies such as trade organisations need to take a more active role in supporting industries to work with their suppliers.

5.3.3 Implications for business support organisations

As has just been stated there is a need for support to be made available to SMEs in order for them to be able to achieve ISO 14001. The implications from this study for business support organisations are that the businesses need to be made more clearly aware what services these organisations offer. The businesses without the accreditation had a very poor knowledge of what help was available and many of the businesses with the accreditation had heard of one or two of the organisations but not all of them. The key to businesses using these organisations is that the assistance must be affordable; this was one of the key issues for many of the managers. Other issues with support that were given by the managers were that the information should be easily accessible, it should be relevant to the businesses size and industry and that it needed to use simple language as most of these managers have no training in the area of environmental management.

On the whole where a business in this study had used a business support organisation they were very happy with the support they had received and in most cases it was preferred to consultants (who were significantly more expensive) that had been used in the past. The main issues raised by the support organisations themselves were their acknowledgement that they need better marketing techniques and expertise to ensure that SMEs are aware of the assistance available and that there is a need for more stable funding that is easy for the SMEs to apply for and access.

5.3.4 Implications for legislators and regulators

As has been stated in the literature review by various researchers smaller businesses in general have a fairly poor knowledge and understanding of environmental regulations with many smaller businesses falling well short of what the law requires them to do. Once they begin the process of ISO 14001 they are faced with the task of becoming compliant with all environmental regulations which many of the managers in this study found to be one of the biggest challenges for them. Therefore the first implication from this study would be that legislators and regulator need to

engage with the small business community in order to assist them regardless of whether they have ISO 14001 not. The process of accreditation would be a great deal easier and quicker if smaller businesses did not start from such a poor start in terms of the environmental regulations they do and do not meet.

When smaller businesses have achieved ISO 14001 and therefore comply with all regulations they still face a significant challenge in keeping up to date with new and updated legislation, which they are required to do in order to successfully pass the auditing process and maintain the accreditation. Therefore legislators need to take make attempts at engaging better with small businesses and informing them and explaining clearly and fully about new or updated legislation.

5.4 Further Research

As was discussed in the literature review, the number of businesses with ISO 14001 is fairly low and the number of SMEs with it are even smaller. Due to the relatively small number of businesses interviewed in this study and the lack of evidence from the businesses (in terms of documentation and data) there is a limit to how much the findings of this study can be generalised to all SMEs. Therefore, to establish if this model is in fact representative of what motivates and enables SMEs to undertake and attain ISO 14001 further research should be undertaken.

One aspect that further research could investigate would be to address the reliability of data gathered. Much of the data collected was around managers' recollections of their perceptions and experiences. One issue with this is that it is reliant on the interviewees' ability to recollect past experiences and feeling, further research that investigated SMEs at different stages of ISO 14001 implementation could test the model developed to identify whether the motivating and enabling factors are actually present during the process.

In the research a number of factors have been identified which may affect the generalisability of this study's findings, these are:

- sector: from the SMEs in the study there was some evidence of certain sectors being more pressured than other to implement ISO 14001. Many of those with ISO 14001 supplied the car industry and to some degree and had faced differing degrees of pressure. It may be that the research's findings are limited to certain sectors and that certain factors will have more effect on certain types of business. In order to establish whether this is the case further research that looks to test the model developed with a wider range of SMEs would establish the degree to which it applies to the wider population of SMEs.

- company size: the majority of the SMEs without ISO 14001 were also the smallest in terms of number of employees. Further research that looks at the effect of the size of SME on environmental management would assist in establishing whether the experiences of the SMEs without ISO 14001 are due to lack of motivations and enabling factors or whether their size has a more significant effect.

- geographical location: the SMEs in this study came from Birmingham, Stoke and Stafford. Even within this relatively small geographical area those in Birmingham had access to different support then those in the other two areas. Other geographical factors that may affect the generalisability of the findings could be the level of regulatory presence in the region for SMEs. Different regional offices of the environmental agency and different local government agencies may have differing priorities regarding checking compliance amongst SMEs, therefore for some places the model may be relevant whilst for others, factors relevant to that area may have more influence on their companies' activities. Further research that tests the model across a range of geographical areas could establish whether and how a company's location affects their level of environmental management and how much these findings can be generalised.

It will now be identified what further research could help understand the role and mechanisms of the various motivating and enabling factors:

- Supply chain pressures: This is clearly becoming an increasingly important issue amongst SMEs and the research into them. One aspect this research identified was that different managers perceive the pressure differently and this in turn affects their need to attain ISO

14001. Further research that investigated this relationship between SME and customer and looked at the differences in perceptions and the reasoning amongst SME managers would assist this study to understand the mechanisms of this motivating factor.

- Leadership: There is a great deal of research into the area of leadership. This research has shown how it can both motivate and enable SMEs to attain ISO 14001. What the research does not do is look in detail at what attributes of the leaders have meant they can both motivate and/or enable. Further research investigating this would enable this study to identify the elements of leadership that motivate and/or enable in more detail.

- Support: Support was found to be a key factor in enabling SMEs to attain ISO 14001. However in the methodology it was also accepted that there is the potential of bias due to a large number of the sample being recruited via the various business support organisations. To ensure this has not influenced the research findings, further research should test the model and investigate the role of support on a sample of SMEs who have not been recruited via a support organisation and SMEs should be identified with a wider range of experiences and levels of support.

- Experience of management systems: This research touched upon the link between ISO 9011 and ISO 14001, however this link could be investigate further to explore the idea proposed in the literature review that for SMEs ISO 14401 may become a norm as is happening for larger businesses and as happened for ISO 9001 for both large and smaller businesses.

Overall, this is still a fairly under researched area (in comparison to research into larger businesses) and any further research which highlights the experience an perceptions of SMEs will assist s have a better understand of what, how and why they act the way they do with regard to environmental management.

5.5 Conclusions

This research has addressed the main research questions of what factors drive and enable SMEs to obtain ISO 14001. Looking back to the model developed from the existing literature it is clear that there are a number of differences between this and what has been found in this research.

There was evidence for both drivers and enablers being present amongst the SMEs in this study in them achieving ISO 14001. In terms of drivers these were: leadership, supply chain pressures, support and history and experience of accredited management systems. The main difference with the model above was that there was no evidence of ISO 14001 being implemented in a proactive manner due to perceived competitive advantage amongst the SMEs other than in order to maintain business from their customer where there were direct or indirect pressures to implement ISO 14001. This appears to be due to the lack of long term strategy of improving the business' environmental performance and very little appreciation of any financial benefits of doing so apart from some efficiency savings. There was also very little evidence of a regulatory compliance driving the adoption of ISO 14001, there was evidence that many of the SMEs were not fully compliant with environmental regulations before embarking on the accreditation, however they did not use ISO 14001 as a means to becoming compliant and only one case of it legitimising their compliance and activities.

In terms of the enablers, leadership was shown to not only be a driver but was also required to implement the management system (in terms of an environmental champion). Those SMEs with identifiable leaders and "green champions" appeared to have better appreciations of the companies' impacts and in some cases environmental issues were more embedded in the businesses activities. However, whilst there was some evidence of this there was little evidence for any of the businesses to have made significant changes to the way they did business and in most cases environmental issues were a bolt-on to their main activities.

Amongst the SMEs with ISO 14001 there was some expertise mainly in the form of managers with previous experience of implementing either ISO 9000 or ISO 14001 at a previous employer. However there was very little (with the exception of one manager) expertise within the

companies around environmental issues or legislation and therefore what was more important to these SMEs in achieving ISO 14001 was external support which could provide this expertise.

Overall, this research has shown that whilst there are a number of common drivers and enabling factors that motivate and make it possible for SMEs to achieve ISO 14001 all SMEs will have a different set of circumstances, different experiences, different people and will be operating in differing business conditions with differing perceived and actual pressures. This research has contributed to the existing research and literature on SMEs and on issues such as leadership and has contributed to emerging areas of study such as environmental management within supply chains. By demonstrating a number of cases of SMEs with ISO 14001 who are very much not the norm this research has outlined and analysed the experiences and challenges that these businesses have undertaken that together add to the overall picture of SMEs and their willingness and ability to implement ISO 14001.

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7. Appendices

Details of Interviews Conducted

Organisation	Description	Location of Organisation	Interviewees' Function	Date of Interview
A	Manufacturer of metal sanitary parts and products	Birmingham	General Manager	March 2006
B	Specialist paint and coatings manufacturer	Birmingham	General Manager	June 2006
C	Land Information Services	Birmingham	Quality, Health, Safety and Environment Manager	September 2006
D	Manufacturer of metal wire, harnesses and connectors	Stafford	Engineering and Quality Manager	February 2007
E	Manufacturer of adhesives and solvents	Stoke	Compliance Manager	July 2007
F	Print management services	Birmingham	Quality and Environment Manager	September 2007
G	Manufacturer of metal roofs	Staffordshire	Quality and Environment Manager	November 2007
H	Manufacturer of pressed metal parts	W. Midlands	Health, Safety and Environment Manager	February 2008
I	Supplier of specialist water-based coatings	Stafford	Managing Director	February 2008

J	Design and supply specialist chemical products	Birmingham	Managing Director	March 2008
K	Manufacturer of pressed metal products	Birmingham	Managing Director	April 2008
L	Manufacture of steel wiring	Birmingham	Production Manager and Quality Manager	September 2008
Groundwork	Offer environmental support through training and site visits	Birmingham	2 x Business Advisors	March 2008
Envirowise	Offer mainly information on environmental issues	Birmingham	Environment Advisory Manager	October 2007
Staffordshire Business Environment Network	Environment Network provide training and resources	Stafford	Project Manager	April 2007
Large Multinational Corporation (top of supply chain)	Car Manufacturer	East Midlands	Health, Safety and Environment Director	November 2006

All interviews were conducted within the factory or offices of the organisation and in most cases involved a tour of the site.

Example of Excerpt from Company B Interview Transcript

Interviewee: The main thing that made us have 14001 was the fact that our biggest company are Rolls Royce and they're pushing this, all the suppliers down the supply chain to be green. SO first of all they asked us to get ISO 9001 which we had to get then two years after that they stated pushing for ISO 14001. Cause we are a first tier supplier I have no doubt in my mind in 5 years time they will want us to 18001 and heading for the health and safety.

Interviewer: If you had not gone down that route do you think it would of affected doing business with them?

Interviewee: They won't have anything off us unless we have 9001 and it's getting stronger and stronger throughout the whole of the aerospace industry, if you haven't got it they don't want you. It was a do or die situation. But having 9001 and 14001 its helped the company structure and its actually saved us a lot of money. Rejections have gone down, accidents, spills, they've all gone down, they've all had a good impact on the company.

Interviewer: Before you had ISO 14011 what was the company's environmental management like?

Interviewee: We had absolutely nothing, we were a terrible company. I suppose for when they did the case study on us, we had absolutely nothing and everything to gain from it and there was a lot of things put in that were very easy to put in which had a good turn around, like separating the wastes. In fact I have figures here for when we first started, hazardous waste skips, we were actually on about 6 a year and now we have halved that and are down to 3 and we used to have 2 great big wheelie bins for the council controlled waste and we are down to 1. VOC emissions have dropped by about 50%, it's not only the case of saving on waste but you've actually paid for those materials that are going to waste so are paying for them two or three times really. So if we every had any spills we never had any way of quickly clearing them up, now we've got spill trolleys around the building and the emergency plan which I mentioned earlier that has a list of phone numbers, because the fire that we had actually happened out of hours and who to ring, how to tell the fire brigade what is stored where, because I think we've got about 350 different chemicals here and probably about 40 different solvents, so the fire brigade are gonna want to know what they're tackling before they get here.

Interviewer: Back before you got ISO 14001 how did you first go about getting it?

Interviewee: Rolls Royce run a workshop for first tier suppliers telling them that they are gonna need it, what it's all about and not really telling them that they have to have it and that you've got to have it but the companies need it and they need to survive, because also it does things like it drops your insurance costs. So there was a workshop run and they say we need you to do this if you are going to continue to supply us and they put it over in a very positive way and it's had a very positive effect culture wise in the factory and the warehouse and everybody like recycling, that's had a good culture change in here actually so yeah.

Interviewer: Were there any challenged in getting it?

Interviewee: Really it's hard to see it when you first do it but you've actually got to put, you've got to spend some money, put in your bunding areas and some things are very time consuming, somebody's got to go around and find the drainage plan, somebody's got to paint the drain. So there is a time restriction there and probably the most difficult thing for 14001 is getting a legal register together cause the legislations changing almost weekly, monthly and its extremely hard to keep up on and you can do as much as you like but I don't think anyone is actually 100% compliant.