Integrated Management Systems in Small Medium-Sized Enterprises: Theory and Practice

by

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Thesis presented in part-fulfillment of the degree of Master of Science in accordance with the regulations of the University of East Anglia

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August 2003

Abstract

Over the last ten years many companies have embraced Quality Management Systems (QMS), as quality appears to be a fundamental requirement for competitiveness. More recently, environmental issues and health and safety legislation have introduced additional dedicated control procedures: Environmental Management Systems (EMS) and Health and Safety Management Systems (H&SMS). The synergies and many points of contacts between Quality, Environmental, and Health and Safety Management Systems have led to the emergence of Integrated Management Systems (IMS) as a way to meet the requirements of quality management, environmental management and health and safety management. This survey explores the subject of Integrated Management Systems in Small and Medium-Sized Enterprises (SMEs). Based on a critical analysis of the literature, as well as on a questionnaire survey, the theory and the actual picture of this important and sensitive industry sector are investigated in order for the drivers, benefits and barriers of IMS implementation to be identified. The research concludes that small and medium companies need support and guidance to overcome their weaknesses and proposes elements of a best practice model, which can enable the sector to take advantage of these kinds of management systems.

Contents

INTRODUCTION 9

1 SMALL MEDIUM-SIZED ENTERPRISES AND INTEGRATED MANAGEMENT SYSTEMS: MAIN CONCEPTS 14

1.1 SMALL MEDIUM-SIZED ENTERPRISES 14
1.2 INTEGRATED MANAGEMENT SYSTEMS 15
1.2.1 THE STANDRDS APPROACH TO INTEGRATION 16

2 DRIVERS, BENEFITS AND BARRIERS OF SMALL MEDIUM-SIZED ENTERPRISES ADOPTING INTEGRATED MANAGEMENT SYSTEMS 23

2.1 INTRODUCTION 23
2.2 DRIVERS OF SMEs ADOPTING INTEGRATED MANAGEMENT SYSTEMS 23
2.3 BENEFITS OF SMEs ADOPTING INTEGRATED MANAGEMENT SYSTEMS 24
2.4 BARRIERS OF SMEs ADOPTING INTEGRATED MANAGEMENT SYSTEMS 28

3 SUPPORT AND GUIDANCE FOR SMALL MEDIUM-SIZED ENTERPRISES ADOPTING INTEGRATED MANAGEMENT SYSTEMS 32

3.1 INTRODUCTION 32
3.2 INTEGRATED MANAGEMENT SYSTEMS GUIDE FOR SMEs 32
3.3 A PROPOSED EXPERIENCES MODEL FOR SMEs ADOPTING INTEGRATED MANAGEMENT SYSTEMS 33
3.4 THE EMS CLUB MODEL 35
3.5 EVALUATION OF THE SUPPORT SCHEMES 37

4 METHODOLOGY 39

4.1 METHODOLOGY 39
4.2 LIMITATIONS 42

5 SURVEY RESULTS ANALYSIS 43

5.1 COMPANY CHARACTERISTICS AND NEGATIVE ANSWERS 43
5.2 MANAGEMENT SYSTEMS 45
5.3 INTEGRATED MANAGEMENT SYSTEMS 49
5.3.1 DRIVERS TO INTEGRATED MANAGEMENT SYSTEMS 51
5.3.2 BARRIERS TO INTEGRATED MANAGEMENT SYSTEMS 52
5.3.3 QUALITY OF INTEGRATED MANAGEMENT SYSTEMS 53
5.4 SUPPORT SCHEMS 56
5.4.1 SUPPORT SCHEMES ELEMENTS 58

6 CONSTRUCTING A BEST PRACTICE MODEL 59

7 CONCLUSIONS **62**

7.1 SUMMARY **62**
7.2 FURTHER STUDY **63**

REFERENCES **64**

APPENDIX A **71**

APPENDIX B **74**

APPENDIX C **76**

List of Figures

FIGURE 1: THE CORE OF THE INTEGRATED MANAGEMENT SYSTEMS AND EXAMPLES OF STANDARDS ON WHICH IT CAN BE BASED **9**

FIGURE 2: SMALL MEDIUM-SIZED ENTERPRISES DEFINITION AND CATEGORIZATION **14**

FIGURE 3: A HORIZONTICAL CROSS-FUNCTIONAL MANAGEMENT SYSTEM FOR QUALITY, ENVIRONMENT, HEALTH AND SAFETY **16**

FIGURE 4: INTEGRATION OF QUALITY AND ENVIRONMENTAL RELATED ELEMENTS IN THE STRUCTURE OF ISO 9000:2000 **18**

FIGURE 5: INTEGRATION OF QUALITY AND ENVIRONMENTAL RELATED ELEMENTS IN THE STRUCTURE OF ISO 14001 **19**

FIGURE 6: REQUIREMENTS OF AN IMS ON THE BASIS OF THE ISO 14001 STRUCTURE **20**

FIGURE 7: A MODEL OF AN INTEGRATED QUALITY, ENVIRONMENT, AND HEALTH AND SAFETY MANAGEMENT SYSTEMS BASED ON A TOTAL QUALITY APPROACH **21**

FIGURE 8: STRATEGY FOR THE INTRODUCTION OF AN IMS IN SMEs AND IDENTIFICATION OF PEOPLE RESPONSIBLE FOR EACH TASK **35**

FIGURE 9: METHODS OF DATA COLLECTION AND TOTAL RESPONSE NUMBER **40**

FIGURE 10: COMPANY CATEGORIES **44**

FIGURE 11: REASONS FOR NEGATIVE ANSWERS **44**

FIGURE 12: QUALITY MANAGEMENT SYSTEMS CATEGORIES **45**

FIGURE 13: PROPORTION OF COMPANY CATEGORIES WITH ISO 9000:2000 **46**

FIGURE 14: ENVIRONMENTAL MANAGEMENT SYSTEMS CATEGORIES **47**

FIGURE 15: PROPORTION OF COMPANY CATEGORIES WITH ISO 14001 **47**

FIGURE 16: HEALTH AND SAFETY MANAGEMENT SYSTEMS CATEGORIES **48**

FIGURE 17: PROPORTION AND CATEGORIES OF COMPANIES WITH AND WITHOUT IMS **49**

FIGURE 18: TYPES OF MANAGEMENT SYSTEMS THAT THE SMEs HAVE INTEGRATED **50**

FIGURE 19: MOTIVATIONS/BENEFITS OF SMEs ADOPTING INTEGRATED MANAGEMENT SYSTEMS **51**

FIGURE 20: BARRIERS OF SMEs ADOPTING INTEGRATED MANAGEMENT SYSTEMS **52**

FIGURE 21: JOB TITLES OF THE PERSONS RESPONSIBLE FOR EACH MANAGEMENT SYSTEMS IN THE SMEs WITH AN IMS IN PLACE **54**

FIGURE 22: QUALIFICATIONS OF THE PERSONS RESPONSIBLE FOR EACH MANAGEMENT SYSTEMS IN THE SMEs WITH AN IMS IN PLACE **55**

FIGURE 23: GUIDANCE/SUPPORT GIVEN TO SMEs IN ORDER TO IMPLEMENT IMS **56**

FIGURE 24: WILLINGNESS TO JOIN A SUPPORT SCHEME **57**

FIGURE 25: AWARENESS OF AVAILABLE GUIDANCE/SUPPORT SCHEMES FOR MANAGEMENT SYSTEMS ADOPTION **57**

FIGURE 26: SUPPORT SCHEMES ELEMENTS **58**

List of Tables

TABLE 1: INTERNAL BENEFITS, CATEGORIES AND EXAMPLES **21**

TABLE 2: EXTERNAL BENEFITS, CATEGORIES AND EXAMPLES **28**

TABLE 3: INTERNAL BARRIERS, CATEGORIES AND EXAMPLES **30**

TABLE 4: EXTERNAL BARRIERS, CATEGORIES AND EXAMPLES **31**

TABLE 5: THE EMS CLUB MODEL ELEMENTS AND THEIR LINKS TO IMS **36**

TABLE 6: AREAS COVERED BY THE QUESTIONNAIRE AND LINKS TO THEORY **41**

TABLE 7: AREAS THAT A SUPPORT SCHEME SHOULD COVER, ASSISTANCE METHODS AND PEOPLE INVOLVED **59**

Acknowledgements

I would like to thank Elaine Colk for guiding and advising me through my dissertation, as well as the EIA team for being helpful whenever needed. I am also thankful to Barry Young and all the companies that responded to my questionnaire.

Special thanks must be given to my brother Yannis, who helped me to increase the response rate by not only allowing me to give his fax number to the companies, but also by sending me the responses that the companies had faxed to him.

I would also like to express my gratitude to my parents, Nikos and Maria, for supporting me throughout this course.

Last but not least, I would like to thank Nuno & Marta for their support, but especially for the good time we had throughout this year, as well as Andreas for… being my best friend!

Introduction

The past decade has seen the emergence of management systems as a way to meet the requirements of quality management, environmental management and health and safety management (Wenmonth, 1994). A management system sets the goals and objectives, outlines the strategies and tactics, and develops the plans, schedules and necessary controls to run an organization. Since many management systems have been developed, companies basically have two choices: leave these to function as specific systems, or integrate them. An Integrated Management System (IMS) is *'the organizational structure, resources and procedures used to plan, monitor and control project quality, safety and environment'* (Griffith, 1999). As Wilkinson & Dale (2000) state, the need for an Integrated Management System has primarily arisen by the decision to implement an Environmental Management System (EMS), and/or an Occupational Health and Safety Management System (OH&SMS), in addition to a Quality Management System (QMS). Figure 1 illustrates the core of an Integrated Management System and examples of standards through which the integration can be achieved. As can be seen, the IMS is located in the center of the three systems and shares common elements with them.

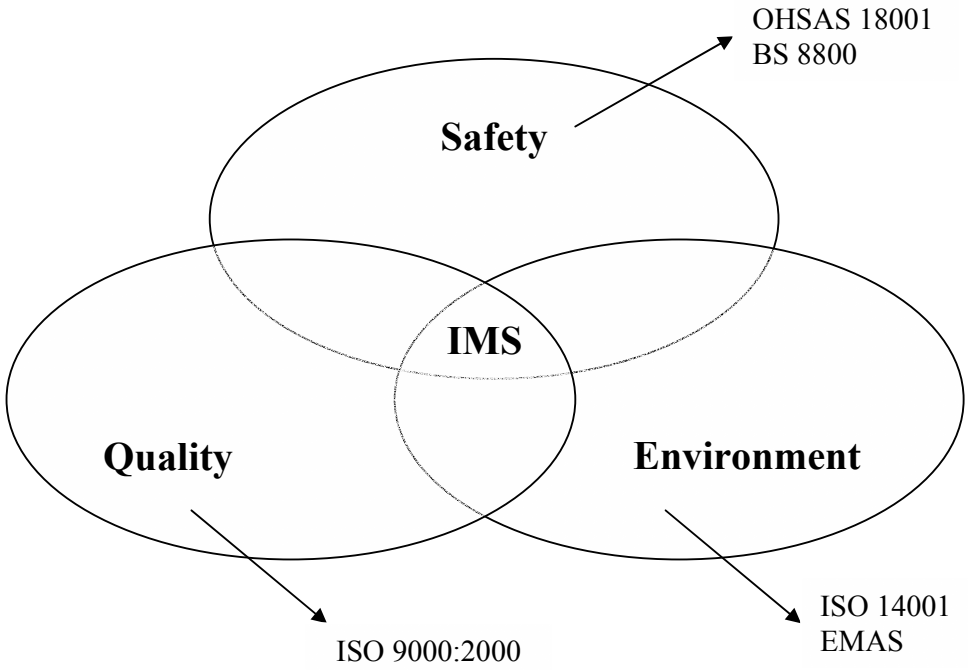


Figure 1: The core of the Integrated Management System and examples of standards on which it can be based (adapted from: Winder, 2001)

However, there are differences in understanding of the term integration as it is commonly confused with alignment (Wilkinson & Dale, 1999). In a study conducted by MacGregor Associates (1996) integration was seen as "a single top level management 'core' standard with optional modular supporting standards covering specific requirements", while alignment was "a parallel management system of standards specific to an individual discipline, but with a high degree of commonality of structure and content". In the same way, Karapetrovic (2003) asserts that integration is usually perceived in two ways, according to what extent it is achieved: full integration (the constituting systems loose their unique identities, resulting in a complete amalgamation to a single multipurpose IMS) or partial integration (which can range from a simple collaboration to alignment and harmonization of objectives, processes and resources of separate management systems).

Over the last ten years a great deal of attention has been paid to aspects related to quality. Quality management can be defined as *'all activities of the overall management function that determine the quality policy, objectives and responsibilities, and implement them by means such as quality planning, quality control, quality assurance and quality improvement, within the quality system'* (Wilson, 1996). Quality appears as a fundamental requirement for competitiveness (Matias & Coelho, 2002), which has resulted in the rapid increase in the number of the companies that have adopted Quality Management Systems (QMS) and especially certified to the ISO[1] 9000 series. Scipioni *et al.* (2001) point out that the concept of quality is destined to evolve significantly from being simply customer satisfaction towards including sustainable development and employee motivation and participation, due to the involvement of different interested parties (i.e. customers, suppliers, the general public, employees, shareholders, etc). Consequently, quality will expand into areas, which were previously dealt with by environmental and safety management. The implications of this expansion are significant and represent the first and most important foundation for the development of management systems with no

[1] The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies from some 130 countries (Matias & Coelho, 2002)

divisions and for the use of integration as an instrument for achieving Total Quality[2] (Scipioni & Rubbi, 1996).

In the same way, in the last few years a lot of prominence has been attached to the analyses related to the companies' environmental management and its multiple dimensions (Brio & Junquera, 2002). An Environmental Management System (EMS) *'is a means of integrating environmental issues into the management function of an organization'* (EMS, 2002). Since the publication of the Environmental Protection Act in 1990, agencies from both the UK Government and the European Commission have intensified their calls on organizations to improve environmental performance. Environmental Management Systems such as the Eco-Management and Audit Scheme (EMAS)[3] and the ISO 14000 series aim to reduce environmental impacts associated with the activities, products and services of an organization. The awareness that these systems are closely related to the organization's internal processes has led to the adoption of system management models for care of the environment which are similar to those used in quality management (Scipioni *et al.,* 2001).

A step towards the preservation of the external environment through Environmental Management Systems is the preservation of the internal environment through the Health and Safety Management Systems (H&SMS). Health and safety programmes have been of major importance to companies for many decades (Fishwick & Bamber, 1996). Every company is required by law to have a health and safety policy, to have a trained and competent person to interpret the policy and to carry out the assessments of risk associated with its activities, and thereafter to develop commensurate control measures (ibid). Good health and safety performance require the adoption of a structured approach (i.e. implementation of the BS 8800[4] or OHSAS 18001[5] standard) to the identification of hazards, and evaluation and control of work related risks (BS 8800, 1996). The role of the H&SMS is therefore to *'contribute to systemizing an*

[2] Total Quality Management is 'an integrated approach to achieving and sustaining high quality output, focusing on the maintenance and continuous improvement of processes and defect prevention at all levels, and in all functions of the organization, in order to meet or exceed customer expectations' (Boaden, 1997)

[3] European Union Regulation 1836/93/EEC

[4] British Standard 8800

[5] Occupational Health and Safety Assessment Series 18001

appropriate management of the risk incurred by the workers/employees/collaborators through good working conditions' (Matias & Coelho, 2002).

The links between quality, environment and safety are so numerous and so important that in many cases it is hard to make a distinction (Scipioni *et al.,* 2001). This is the reason why OHSAS 18001 has been developed to be compatible with the ISO 9000:2000 and ISO 14001 management systems (Wilkinson & Dale, 1999; Matias & Coelho, 2002; Bamber *et al.*, 2002). Table A.2 in Annex A of the OHSAS 18001:1999 (2002) illustrates this compatibility by presenting the correspondence between these standards (see Appendix A). In the same way, Beechner & Koch (1997) feel that ISO 9000:2000 and ISO 14001 are so similar that they require integration in order to give improved performance and remain focused on objectives. The latter was recognized by the International Organization for Standardization, which published in 2002 guidelines for quality and/or environmental management systems auditing (EN ISO 19011, 2002).

A main problem arising from this analysis is how is it possible to address these concepts to Small and Medium-Sized Enterprises (SMEs), because, as Brio & Junquera (2002) point out, they generally lack the human and financial resources to tackle new pressures (e.g. stakeholders' concern about environmental impacts or new regulations about health and safety or quality). Studies of this sort are very scarce, practically not existent and the empirical picture of this topic is patchy at best because, as Hillary (2000) points out, this industry sector is under-researched. Therefore, the overall objective of this study is to provide the reader with an investigation of the implementation and effectiveness of IMS in SMEs in theory and practice, as well as with an introduction of a best practice model, which will enable SMEs to take advantage of these kinds of management systems.

This research consists of two parts (Theory and Practice). In the first part (Chapters 1-3) an analysis of any published material relating to IMS in SMEs, as well as a critical evaluation of the drivers, benefits and barriers concerning the implementation of these management systems to this industry sector are presented. This part concludes with an introduction of available support schemes that can help small and medium companies to implement these kinds of management systems. The second part (Chapters 4-6)

comprises the results of a survey that was carried out in Norfolk in order to investigate the actual picture and the perceptions of small and medium companies about IMS. The last section of this part seeks to identify elements of a best practice model that can enable these kinds of companies to overcome their weaknesses and take advantage of the benefits that integrated managements systems can offer.

1 Small Medium-Sized Enterprises and Integrated Management Systems: Main Concepts

1.1 Small Medium-Sized Enterprises

Precise definitions of the SME sector differ at regional and national levels and also in relation to the sector and type of industry (O'Laoire 1995; O'Laoire & Welford, 1998). Hillary (2000) states that there are broadly two categories of definition: operational definitions (used for working purposes, e.g. to provide a cut-off level in the award of grants) and theoretical definitions (employed to characterize the sector). The failing of all of these definitions though is that they cannot take into account the undeniable importance of the sector's diversity (ibid). However, the most commonly used definition, and the one used throughout this study, is the EU definition, which is demonstrated in Figure 2. As can also be seen, a further distinction is made between micro, small and medium firms.

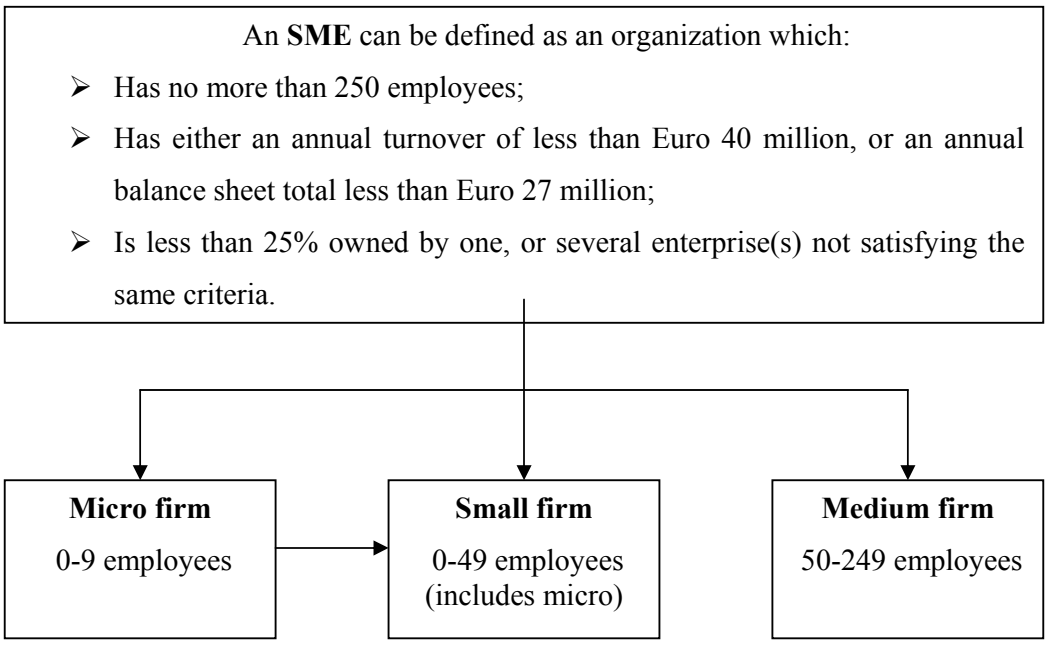


Figure 2: Small medium sized enterprises definition and categorization (*source:* Small Business Service, 2003)

The SME sector is vast. Hillary (2000) points out that in the UK alone 99.8% of all enterprises fall into this sector while in Europe, around 90% of all enterprises are

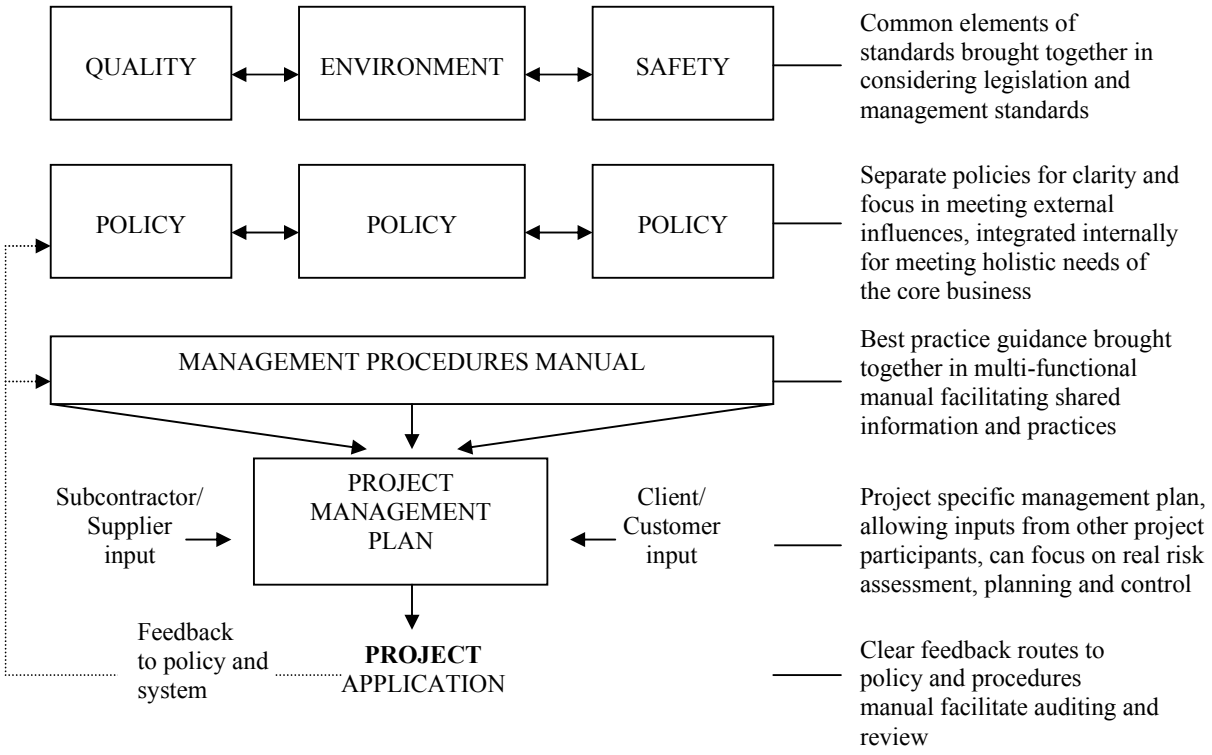
small or medium-sized[1]. The percentages are similar in countries all over the world and the numbers are set to increase (ibid). A few facts show how this industry sector is a crucial part of the current economic picture. Typically, the sector globally accounts for about 70% of national product, although this may vary considerably from country to country (O'Laoire & Welford, 1998). Hillary (2000) also argues that SMEs provide and create jobs, especially during times of recession; they are a source of innovation and entrepreneurial spirit; they harness individual creative effort; and they create competition and are the seed bed for business of the future.

There are significant differences in the character of large and small companies. The lack of resources, technical ability, time and capital usually lead SMEs to inaction (James *et al.*, 1998). They are closely integrated into the fabric of the local community, have staff that usually come from within a small radius of the company and often use traditional processes or services (Smith, 1997). Furthermore, James *et al.* (1998) assert that smaller firms tend to lack information management systems to concentrate information-gathering with one or two key personnel rather than sharing scanning activities among a range of top executives, while larger firms on the other hand, have the capital to employ external consultants or may even have in-house experts. This fact favours the search of innovations in the management systems field.

1.2 Integrated Management Systems

The subject of Integrated Management Systems in terms of quality, environmental and health and safety management is becoming increasingly seen as part of an organization's management portfolio (Wilkinson & Dale, 2000). An IMS is conceptualized as a single set of interconnected processes that share a unique pool of human, information, material, infrastructure and financial resources in order to achieve a composite of goals related to the satisfaction of a variety of stakeholders (Karapetrovic, 2003). Griffith (2000) argues that an IMS presents an opportunity to establish a cross-functional horizontal management structure (see Figure 3). As Figure 3 illustrates, the management functions become integrated at the strategic level within the corporate organization.

[1] As can be seen in Figure 2, according to the EU definition, micro firms are included in the small category. This concept is adopted throughout this research



Integrated system provides cross-functional expertise, shared information and co-ordinate practices

Figure 3: A horizontal cross-functional management system for quality, environment, health and safety (*source:* Griffith, 2000)

Karapetrovic (2003) argues that integration of management systems is really about two things: standards and internal systems that these standards describe. If both are considered, the ultimate goal is 'one standard, one system'. However, this research examines to what extent small and medium companies have achieved the goal of 'many standards, one system', because as Karapetrovic (2003) points out, since management standards keep emerging like mushrooms, any effort towards an integrated standard that would cover all the current ones is useless.

1.2.1 The standards approach to Integrated Management Systems

With respect to Quality Management Systems, ISO 9000:2000 is the primary focus of this study for two reasons: first, because it is accepted by most countries as their national quality systems standards (Wilson, 1996); and second because although there is no specific record kept of small and medium firm registrations to the ISO 9000 series for the UK, there is plenty of research to indicate that a large and increasing

number of small and medium businesses have adopted the standard (North *et al.*, 1998). The ISO 9000 family comprises the original three documents issued in 1987 and revised in 1994 (ISO 9001, ISO 9002, ISO 9003). These standards have recently been integrated into the new ISO 9000:2000, published in December 2000, which seeks to demonstrate a company's ability to consistently provide a product that meets customer and applicable regulatory requirements and to enhance customer satisfaction (ISO, 2003). ISO 9000:2000 consists of four Clauses: Management responsibility, Resources management, Measurement analysis and improvement and Product realization (ibid).

In terms of Environmental Management Systems, ISO 14001 is given more consideration than the Eco-Management and Audit Scheme (EMAS) within this research, as a survey conducted by Hillary (1999; 2000) concerning EMS in small and medium companies showed that the number of SMEs certified to the former is significantly higher than the number of SMEs registered to the latter. To be more precise, Hillary (1999; 2000) argues that the number of SMEs certified to the standard is estimated for the UK as between 25% to 56%, although this number has a moderate to low degree of accuracy due to data limitations (no single UK list holds all ISO 14001 certified organizations and the International Organization for Standardization does not collect size data in its surveys). ISO 14001 was published in 1996 and enables organizations of all kinds to achieve and demonstrate sound environmental performance by controlling the impact of their activities, products or services on the environment, taking into account their environmental policy and objectives (EN ISO 14001, 1996).

Both ISO 9000:2000 and ISO 14001 describe and structure management systems, addressing either quality or environmental aspects. If the respective requirements of the other system are included, this will lead to a design of management and operational processes that simultaneously cover quality and environmental requirements (Von Ahsen & Funck, 2001). As a result, integration of quality and environmental management processes can be achieved by using either the ISO 9000:2000 or the ISO 14001 as a basis (ibid). In order to construct an IMS on the basis of ISO 9000:2000, the environmental elements have to be integrated into the quality systems elements (see Figure 4).

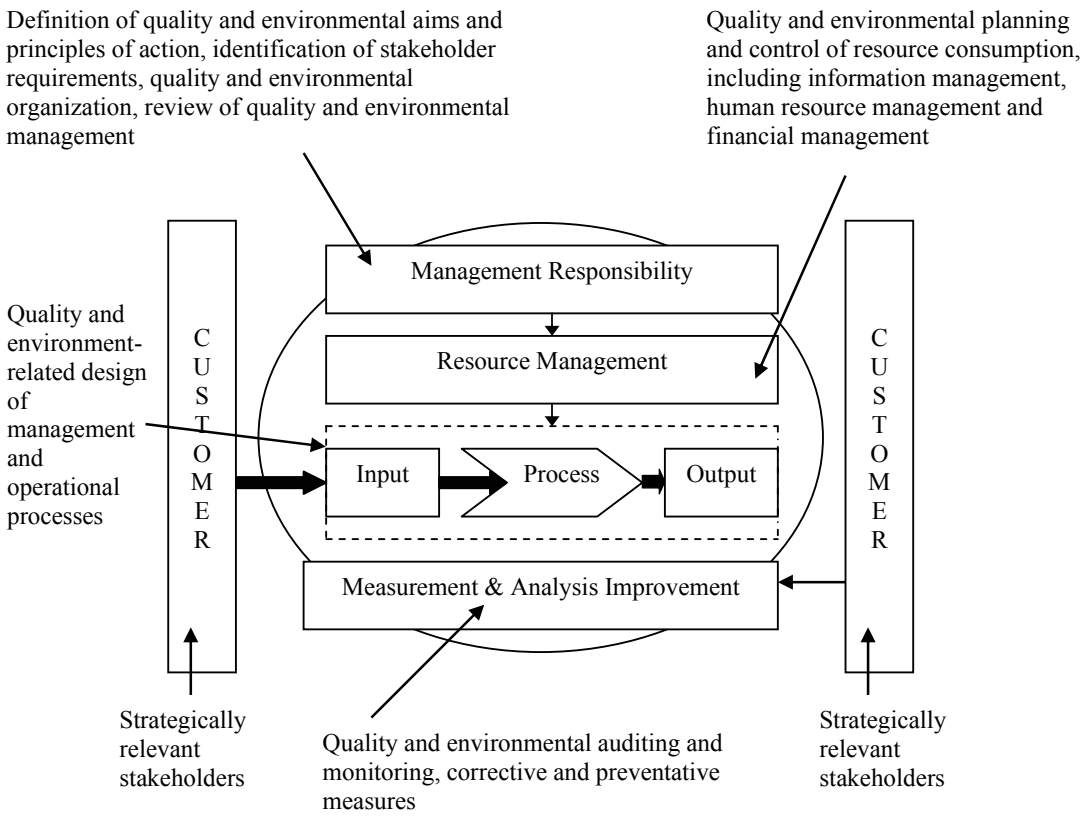


Figure 4: Integration of quality and environmental related elements in the structure of ISO 9000:2000 (*source:* Von Ahsen & Funck, 2001)

Although the ISO 9000 series do not consider environmental aspects and they explicitly emphasize the production process, it is suggested that common subjects in the two series of standards may be implemented in a shared manner, in whole or in part, by organizations, without unnecessary duplications or the imposition of conflicting requirements (ISO 9000:2000, 1998).

In the same way, building an IMS on the basis of ISO 14001 requires the integration of quality-related elements into environmental elements. Von Ahsen & Funck (2001) assert that the consistent implementation of such a model requires that quality as well as environmental aspects have to be considered in all processes and that they are also documented in corresponding operation, process and control guidelines. Figure 5 describes how the elements of quality management systems can be integrated into the structure of environmental management systems according to ISO 14001.

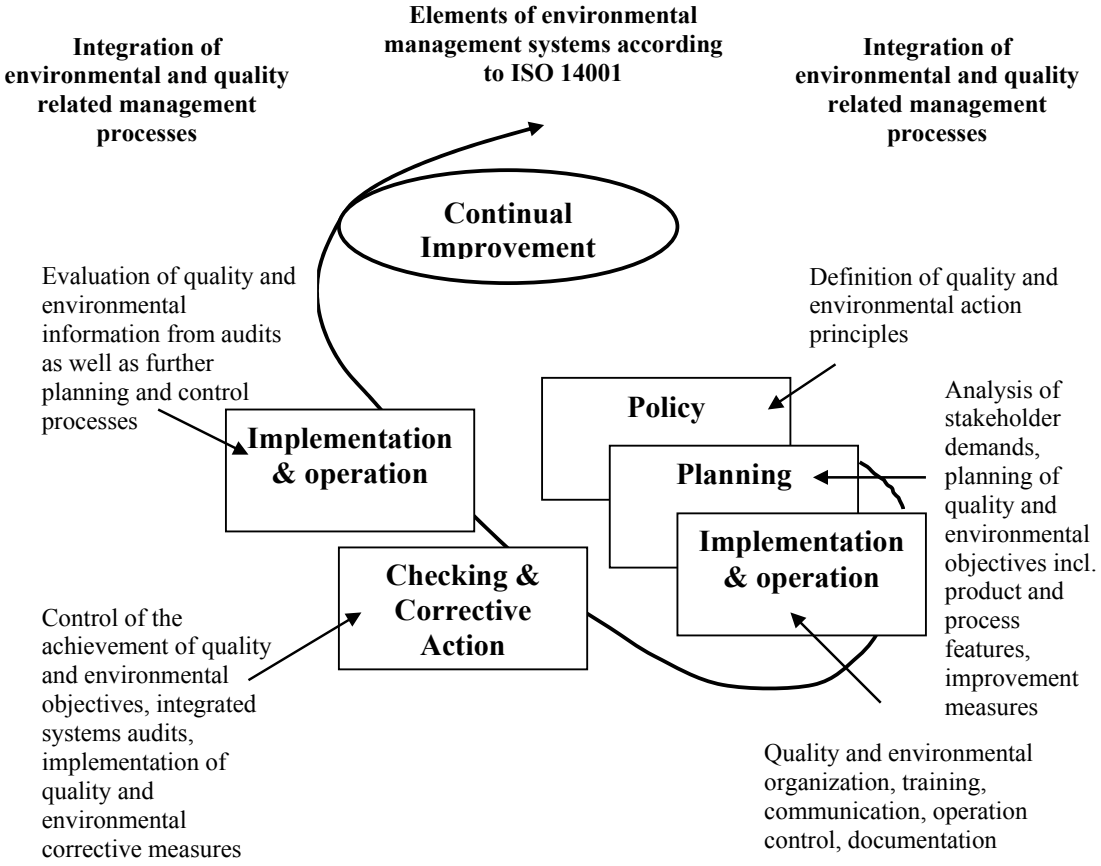


Figure 5: Integration of quality and environmental related elements in the structure of ISO 14001 (*source:* Von Ahsen & Funck, 2001)

As Clint (2001) points out, there is no equivalent to ISO 14001 or ISO 9000:2000 international standards for health and safety, although there are various standards covering different aspects of safety in the work place. The British Standard BS 8800, published in 1996 and the relatively new OHSAS 18001, published in 1999 by the US Occupational Health and Safety Administration (Matias & Coelho, 2002) are the focus of this research, as both of them are compatible with ISO 9000 and ISO 14000 series (BS 8800, 1996; Wilkinson & Dale, 1999; Matias & Coelho, 2002; Bamber *et al.*, 2002). The OHSAS 18001 standard includes the principles laid down in the BS 8800, which is essentially a guide to Occupational Health and Safety Management Systems. BS 8800 is particularly useful to small and medium-sized organizations that have little formal OH&S management systems in place, as it aims to provide guidance on how management of OH&S may be integrated with the management of other aspects of business performance, in order to minimize risk to employees and others, to

improve business performance and to assist organizations to establish a responsible image within the marketplace (BS 8800, 1996). There are no official records of small and medium firms that have implemented BS 8800 or OHSAS 18001, although in research carried out by Vassie *et al.* (2000) it is illustrated that in excess of 80% of responding SMEs had in place a written safety policy, risk assessment and accident reporting.

BS 8800 and OHSAS 18001 present two detailed approaches to Occupational Health and Safety Management Systems, the HS(G)65 and the EN ISO 14001 one. Accordingly, integration of Quality, Environmental, and Health and Safety Management Systems can be achieved through the latter approach in the same way as is illustrated in Figure 5. Figure 6 demonstrates how the integration of quality, environmental and health and safety related processes can be achieved, according to the ISO 14001 model.

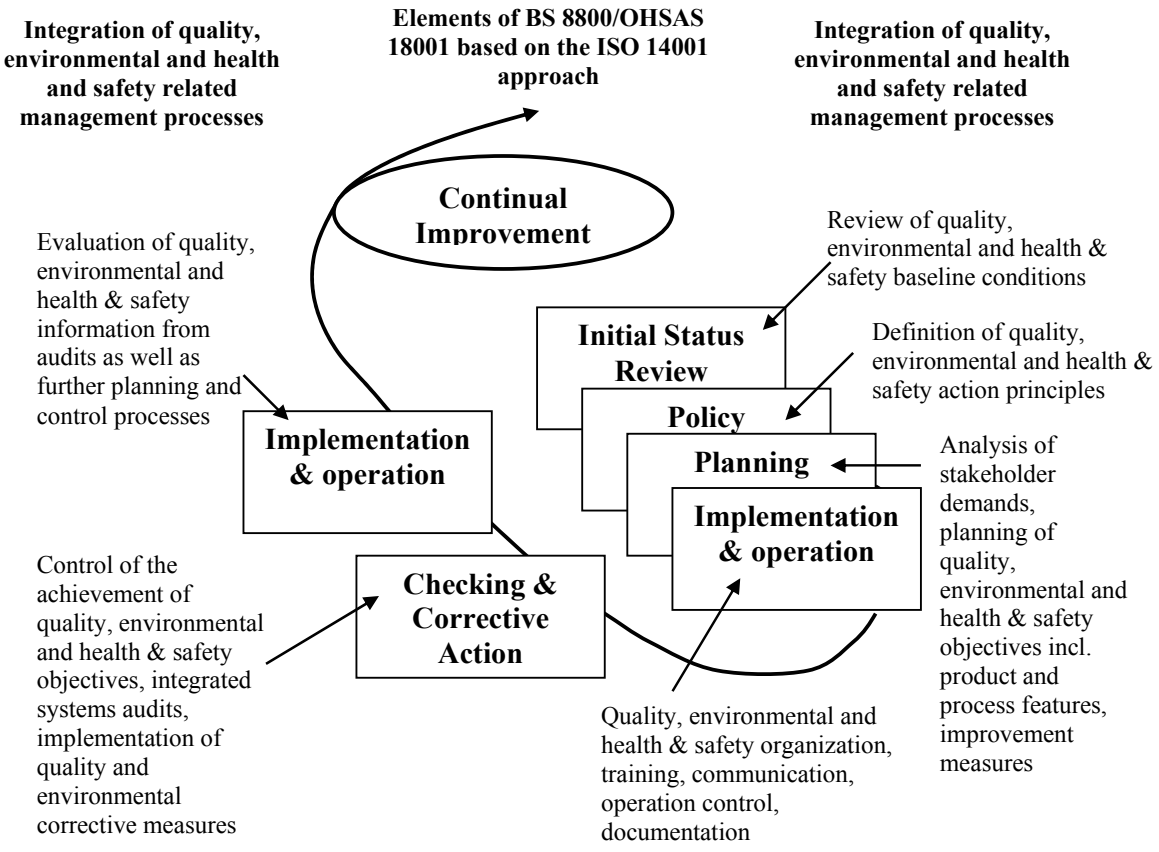


Figure 6: Requirements of an IMS on the basis of the ISO 14001 structure (*adapted from:* BS 8800, 1996)

On the other hand, Seghezzi (2000) argues that models based on cross functional processes, which include models of Total Quality Management and process models (such as those in ISO 9000:2000) form a good base of integration, as approaches like ISO 14001 ignores scope and culture. Following this concept, Wilkinson & Dale (2001) developed an integrated organizational model for Quality, Environmental and Health and Safety Management Systems, which includes issues such as leadership and culture. This model is illustrated in Figure 7.

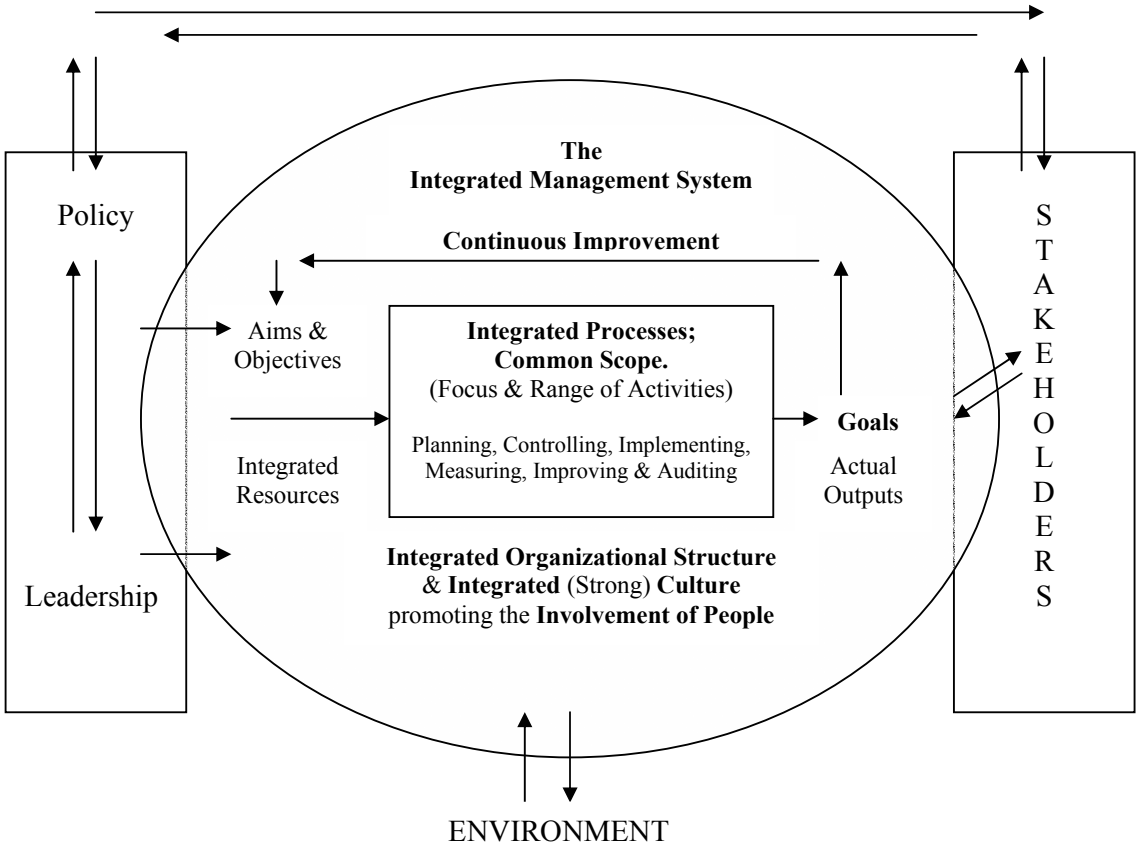


Figure 7: A model of an integrated Quality, Environment, and Health and Safety Management System based on a Total Quality approach (*source:* Wilkinson & Dale, 2001)

As is shown, the QMS, EMS and H&SMS resources, processes and procedures interact through the structure and culture to carry out the activities of planning, controlling, implementing, measuring, improving and auditing, and transform inputs and outputs. The outputs are then compared with the goals, which have been determined by the organization's policy and the needs of all its interested parties

(stakeholders). The results of this comparison are then fed back to the input, so that the aims and objectives can be revised and the resources adjusted, if necessary. This sequence of activities forms a cycle of continuous improvement. It is argued that this model can be used by any organization wishing to implement an Integrated Management System (Wilkinson & Dale, 2001), thus it can be also adopted by Small Medium-Sized Enterprises.

2 Drivers, Benefits and Barriers of Small Medium-Sized Enterprises adopting Integrating Management Systems

2.1 Introduction

The implementation of management systems, and therefore IMS, is not only technically appropriate for small and medium firms but it may be substantially easier for them than it is for large companies. Wells & Galbraith (1999) use ISO 14001 to exemplify this argument, as they assert that small and medium companies can adopt it more easily due to their small range of activities, which results in fewer significant environmental aspects, less corporate bureaucracy and easier training and internal communication. However, Hillary (1999) argues that SMEs may find many sources of irritation, such as unexpected required costs and staff skills, failure to integrate the systems smoothly or lack of market rewards.

This chapter provides the reader with a critical analysis of the drivers, benefits and barriers of the implementation of Integrated Management Systems in SMEs. It can be argued that many issues concerning Environmental Management Systems in small and medium enterprises can be applied to IMS because, as mentioned earlier, QMS, EMS and H&SMS share common elements and procedures.

2.2 Drivers of SMEs adopting Integrated Management Systems

Various reasons can drive small and medium companies to integrate the standards. These drivers have been identified by many authors (Welford, 1994; Hillary, 1999; 2000; Winder, 2000), who have referred, first of all, to the important role of the stakeholders. There is a range of stakeholders who demand improvements in quality, environment and health and safety. Hillary (1999; 2000) has identified customers, local government, local community, regulators and employees as the most significant ones who can push SMEs to improve their environmental performance and, as a consequence, to adopt a more integrated approach to management systems. She points out that customers are the key driver, although Welford (1994) argues that most of the pressure comes from the regulatory agencies rather than directly from customers. What is more, Griffith (2000) asserts that the need to comply with the increasingly

stringent legislation means that small and medium firms must demonstrate improvements in quality, environmental performance and better health and safety management.

Large companies also play a significant role, because, as Hillary (1999; 2000) states, the supply chain pressure is prominent in driving SMEs to adopt innovations. This is the result of the fact highlighted by O'Laoire (1995) that most SMEs are typically involved in business-to-business activities. Some good examples include the pressure from multinational corporations to small companies to adopt environmental management systems: the Ford Motor Company was requiring by 1999 to all its suppliers and manufacturing facilities worldwide to implement and certify an EMS as a condition for continuing to do business with Ford (Wilson, 2001); General Motors, Daimler-Chrysler, Toyota and other automobile manufactures are also requiring all of their manufacturing facilities around the world to adopt an EMS and to certify them by international standards and encouraging and assisting their suppliers to do the same (Sabatini, 2000). In evaluating the above mentioned examples, it can be concluded that Integrated Management Systems will in short time become a prerequisite for SMEs to cooperate with large firms.

2.3 Benefits of SMEs adopting Integrated Management Systems

Numerous rewards can be obtained by the SMEs from adopting Integrated Management Systems. After a critical analysis of the literature on this topic, it can be argued that the benefits can be grouped into two categories: internal benefits and external benefits. The internal benefits are related to the internal function and processes of the company, while the external ones are associated with the external activities of the company. Furthermore, internal benefits can be divided into three categories: organizational, financial and people benefits. Similarly, the external ones are grouped into commercial, communication and quality/environmental/safety (Q/E/S) benefits.

The improvement of internal efficiency and quality of management is the first internal outcome that a small or medium enterprise can gain. This will be achieved, for example, by the down-sizing of three functional departments to one (Shillito, 1995) and the harmonizing of the organizational structures which contain similar elements

(Winder 2000). The latter is also highlighted by Renzi & Cappelli (2000), who state that an integrated system allows homogeneity in management methodologies. In the same way, Griffith (2000) argues that the integration of systems results in the reduction in the fuzzy management boundaries between individual systems and in the broadening of the horizon beyond the functional level of any individual systems, by sharing information across traditional organizational boundaries. What is more, as stated in the introduction, many of the standards (i.e. ISO 9000:2000, ISO 14001, OHSAS 18001) deliberately share the same elements and therefore their integration will enable the company to avoid duplications between procedures of the systems and to eliminate the overlap of effort, for instance, in terms of hazard identification, development and maintenance of controls required, auditing, etc (Winder, 2000; Griffith, 2000; Carter, 2000). Finally, many writers (e.g. Renzi & Cappelli, 2000; Griffith, 2000) also recognize the decrease in the bulk of company papers and the creation of common forms that can be more easily used by several operators, as a significant tangible organizational benefit.

Apart from the above described organizational benefits, SMEs can also obtain a range of financial rewards. The cost savings, which will occur from the cutting of the frequency of the audits, are acknowledged throughout the literature (see for instance Shillito, 1995; Winder, 2000; Matias & Coelho, 2002). However, Shillito (1995) argues that the audits will not be reduced to just one, as it will be necessary to expand the internal financial audit program, in order for the effectiveness of the integrated procedures to be secured. In addition, the economic condition of the SME will be improved as a result of the minimizing of the external certification costs over a single certification audit (Barden & Bannister, 2002), and as a consequence of the enhancement of the data and personnel management (Renzi & Cappelli, 2000).

Hillary (1999; 2000) points out that the adoption of Environmental Management Systems by small and medium businesses increases employee motivation, awareness and qualifications. As one might expect, this argument can be also applied to Integrated Management Systems, as the latter preserves not only the external environment but also safeguards the internal one through the Health and Safety Management Systems. Consequently, employees can enjoy better and safer working

conditions, which create a better company image among them and improve the relations between staff and management.

Table 1 summarizes the internal benefits that an SME can gain from the implementation of an Integrated Management System:

Internal Benefits		
Organizational Benefits	**Financial Benefits**	**People Benefits**
➢ Improvement of quality of management by down-sizing three functional departments to one and reducing fuzzy management boundaries between individual systems	➢ Cost savings by the reduction of the frequency of audits	➢ Increase in employee motivation, awareness and qualifications
➢ Increase in operational efficiency by harmonizing organizational structures with similar elements and sharing information across traditional organizational boundaries	➢ Reduction in external certification costs over single certification audits	➢ Creation of a better company image among employees
➢ Avoidance of duplication between procedures of systems	➢ Increase in profit margins	
➢ Streamlining paperwork and communication		

Table 1: Internal Benefits, Categories and Examples

With regard to the external benefits, Integrated Management Systems can enable small and medium firms to achieve a competitive advantage and as Winder (2000) states, to eliminate the possibility that competitors with innovative strategies to overtake company's activities. Besides, some authors (see for example Miles *et al.*, 1999; Hillary, 1999; 2000) with reference to Environmental Management Systems argue that the satisfaction of customers' requirements and the prospect to attract new ones offer the opportunity to the company to enhance its market place.

Alongside the above mentioned commercial benefits, SMEs can find positive outcomes in terms of their image. The synthesis of diverse evidence for different management areas (Carter, 2000) and the ability to demonstrate legal compliance (Hilary, 1999; 2000; Winder, 2000) can enable the company to provide a 'big picture' of its performance. Similarly, Shillito (1995) points out that the centralization of one health, safety, environment and quality budget will make it appear larger and thus more susceptible to operational economies. Under these circumstances, the relations between the company and the various stakeholders will be improved, a fact that can facilitate broader communications (e.g. between the company and the government).

Finally, a range of some obvious benefits in terms of quality, environmental and health and safety performance can be indicated. The implementation of IMS from small or medium enterprises offers them the opportunity to reduce damage to equipment, inventory or product loss and generation of hazardous waste and to minimize accidents and lost time (Noble, 2000). These potential positive outcomes can be of great value for SMEs, if we consider that due to their weaknesses (e.g. economic limitations, lack of human resources, etc.) any damage, loss or accident can be catastrophic for them.

Table 2 demonstrates the above described external benefits.

External Benefits		
Commercial Benefits	**Communication Benefits**	**Q/E/S Benefits**
➢ Competitive advantage	➢ Improvement of company's image	➢ Improvement in quality, environmental and health and safety
➢ Improvement of market place	➢ Improvement of relations with stakeholders	➢ Reduction of hazardous waste generation
➢ Gain new customers/satisfy existing ones	➢ Evidence of legal compliance	➢ Reduction of equipment damage and product loss

Table 2: External Benefits, Categories and Examples

2.4 Barriers of SMEs adopting Integrating Management Systems

In the same way as benefits, the barriers to IMS implementation from small and medium companies can be grouped into internal (resources, attitudes/perceptions, implementation) and external (support and guidance, economics, certifiers/verifiers).

The importance of financial and human resources is a concern raised by many writers (see for example Miles *et al.*, 1999; Hillary 1999; 2000; Winder, 2000). Brio & Junquera (2002) argue that most SMEs are companies with limited budgets, thus they cannot allocate funds to initiatives that perceived to be secondary company aspects. They also lack management capabilities, which results in inaction as the lower the percentage of managers trained, the less the development of the companies' approaches to new technologies (ibid). Furthermore, the low level of employee awareness and involvement, as well as the time constraints influence significantly the achievements in the management systems area and as Hillary (2000) with regard to Environmental Management Systems points out, the multifunctional nature of staff becomes of ever increasing importance as the size of the company decreases.

The attitudes and perceptions of the people involved with an SME, especially of the managers, also constitute a major hurdle for the Integrated Management Systems adoption. Generally, IMS are perceived too revolutionary for most of the organizations (Shillito, 1995) and as one might expect small and medium businesses resist even more to such big changes, due to their lack of awareness of the benefits and to their different management style. The latter is highlighted in a few studies (e.g. Welford, 1994; Brio & Junquera, 2002), where it is argued that the limited strategic capacity of the SMEs and their short-term orientation do not provide incentives for innovations. Apart from this, Hillary (2000) points out that the negative experience in terms of bureaucracy, gained from the ISO 9000:2000 implementation, frightens SMEs. As a final point, there seems to be a perception that there are other priorities before these kinds of considerations are dealt with (Welford, 1994).

The cultural differences between disciplines as a barrier for the implementation of IMS have been discussed by some writers (see for example Wenmonth, 1994; Shillito, 1995; Wilkinson & Dale 2000). Shillito (1995) states that the integration of the standards can only be achieved where quality, environment and safety are within the same culture, otherwise the integration process will probably create new problems, resulting in a leveling down of performance rather than a leveling upwards. Although an affinity can be found, generally, among the systems, there are differences found in their internal requirements (Matias & Coelho, 2002), thus, high effort for implementation is deemed necessary.

The internal barriers to IMS implementation are summarized in Table 3.

Internal Barriers		
Resources	**Attitudes/Perceptions**	**Implementation**
➢ Lack of financial resources	➢ The change appears too revolutionary/ resistance to change	➢ Cultural differences between disciplines
➢ Lack of management and/or staff knowledge, skills and training	➢ Low awareness of the benefits	➢ Complexity and differences among systems
➢ Lack of employee involvement/ motivation	➢ Other priorities more important	➢ High effort for implementation
➢ Lack of management and/or staff time	➢ Perception of bureaucracy	
	➢ Short-term orientation	

Table 3: Internal Barriers, Categories and Examples

With respect to the external barriers, SMEs appear to need support and guidance. The review of the literature showed that small and medium firms can find assistance in order to implement individual systems. Support for Environmental Management Systems adoption for example has been the topic of research by many (see for example Netherwood & Shayler, 1998; Palmer & France 1998; Hillary, 1999; 2000), and various support schemes and programmes have been instigated (e.g. EMS Club, 2002; Project Acorn, 2003; PECT, 2003; Envirowise, 2003) in order to enable SMEs to implement EMS. However, support for IMS adoption in small and medium companies is almost non-existent. This industry sector experiences not only lack of implementation tools and examples (Scipioni *et al.,* 2001), but also poor quality information and conflicting guidance, as a result of the lack of qualified consultants to assist SMEs (Hillary, 1999).

It has been also argued that many small and medium firms perceive the drivers and the benefits of the management systems adoption insufficient. Hillary (2000) for instance, argues that most SMEs believe that positive outcomes of EMS

implementation accrue slowly but cost quickly. In addition, uncertainty about the value of Integrated Management Systems in the market place and skepticism whether they will contribute to meet customers' requirements, as well as the goal conflicts and the different demands of the respective stakeholders, are significant external hurdles to implementing an IMS (Von Ahsen & Funck, 2001).

Barriers finally stem from the high cost of certification/verification (Miles *et al.*, 1999; Hillary, 1999; 2000; Winder, 2000). As stated earlier, it is more functional to approach Integrated Management Systems through the 'many standards, one system' concept, thus, the need for specific certification to specific management standards (such as ISO 9000:2000 or ISO 14001), and the duplication of effort between certifiers/verifiers and internal auditors may be unavoidable.

Table 4 presents the external barriers to IMS implementation from small and medium companies.

External Barriers		
Support and Guidance	**Economics**	**Certifiers/verifiers**
➢ Lack of support schemes	➢ Insufficient drivers and benefits	➢ High costs of certification/ verification
➢ Lack of sector specific implementation tools and examples	➢ Uncertainty about the value of IMS in the market place	➢ Duplication of effort between certifiers/verifiers and internal auditors
➢ Lack of experienced consultants to assist SMEs/poor quality information and conflicting guidance	➢ Different stakeholders demands	
➢ Lack of promotion of IMS		

Table 4: External Barriers, Categories and Examples

3 Support and Guidance for Small Medium-Sized Enterprises adopting Integrated Management Systems

3.1 Introduction

This chapter provides the reader with an overview of three available models/guides concerning Integrated Management Systems in Small Medium-Sized Enterprises. First, a guide for IMS implementation is presented; second, a proposed experiences model; and finally, an EMS model which also considers quality and health and safety, as it can be argued that many of the already existing support schemes for EMS adoption in small and medium firms can be expanded in order to include quality and health and safety issues (due to the compatibility of the standards).

3.2 Integrated Management Systems guide for SMEs

Scipioni *et al.* (2001) describe a guide for IMS implementation in small and medium businesses, which was conducted by the Research Centre of Quality and Environment of the University of Padova, after a mandate received by the Euro Info Centre EIC/IT 378. The main goals of the guide are to stimulate SMEs to implement environmental management systems; to demonstrate the possibility to integrate EMS with other management systems (i.e. quality and safety); to improve the access of the companies to the IMS; and to improve the knowledge of the companies on the sustainable development bases. This guide, far from being a substitute for the reference standards, is a support document for SMEs which, independently of their initial situation (ISO 9000:2000 and/or ISO 14001 certification, EMAS registration, no certification, etc.) want to take advantage of the synergies and many points of contacts between environment, quality and safety management systems. It consists of:

1. Three chapters dealing with the aspects of the three systems (i.e. quality, environment and safety).
2. One chapter dedicated to IMS in order to suggest a model for the integration of Quality, Environment and Safety Management Systems. This chapter is divided into four subsections corresponding to macroareas of the Integrated Management System:

a. The first section deals with management responsibility, fundamental to the setting up and starting of an IMS and to the effectiveness of the system in leading the organization towards continuous improvement;
b. The second section speaks about the resources (human, financial, physical, technological, as well as internal and external communications strategies), which the organization must have in order to ensure that improvement objectives are reached effectively;
c. The third section describes how it is possible to integrate the main processes of the organization, from purchasing to design, from analysis of the requirements of interested parties to equipment management;
d. The fourth section looks at the methods and instruments which an organization can use to measure its objectives, to check how far they have been achieved, to check adherence to legal and standards' requirements and to plan new improvement targets.

The full contents of this guide are demonstrated in Appendix B.

3.3 A proposed experiences model for SMEs adopting Integrated Management Systems

Mackau (2003) proposes an Integrated Management Systems model appropriate for small and medium companies, which derived from experience gained during the development of IMS in Aachen, Germany. The model fulfils the requirements of the ISO 9000 standard (including ISO 9000:2000 revision) and the contents of ISO 14001 and safety checklist contractors (SCC), as well as some contents of the OH&S management systems ASCA (developed in the state of Hessen, Germany) and OHRIS (developed in the state of Bavaria, Germany). It is based on a manual comprised of the following five chapters:

1. 'Company and management design', which describes the organization of the company and the management system. Part of that includes statements of roles and competencies, the creation and control of documents and the explanation of the company structure. Also, the human resource focus is included in this chapter. The subject "employees", which is only mentioned in the segment "training" in the ISO 9000 standard, is of much higher significance here.

2. ‘Products and services’. Initially, the products and services of the company are named and then later specific requirements or manufacturing processes are defined by the demands of law, customers and company.
3. ‘Process design’, which presents a process visualization of all company processes. A branch neutral process model was developed to support this job. It is structured in two parts and differentiates between main and side processes. It is assumed that main processes exist in every company and side processes can be identified but do not have to exist necessarily in that line of business.
4. ‘Customer and supply focus’, which concentrates on customers, suppliers and subcontractors, with particular emphasis on those last two groups, as their involvement is not always trivial. Particularly for an SME, it is not easy to dictate terms to its suppliers or even evaluate them. Yet, through this step, the knowledge and use of an IMS can be made accessible to such groups that originally do not have reference to it.
5. ‘Benchmarking and continuous improvement’, which discusses continuous improvement, the evaluation of efficiency of measures and of benchmarking. Although benchmarking is not part of a management systems organized by following the rules of the ISO 9000 standard, it offers many starting points in order to evaluate the performance and discuss problem solutions among companies in the same line of trade, therefore, contributes to the exchange of experience and to the distribution of the IMS.

The creation of the contents of the above described manual is in part connected to the execution of further complex tasks by the employees, who are responsible for the continual development of the IMS. Therefore, a top-down strategy for the introduction of the IMS has been developed, noting that it is important first to obtain management commitment to the project and agreement on future action. This strategy is illustrated in Figure 8.

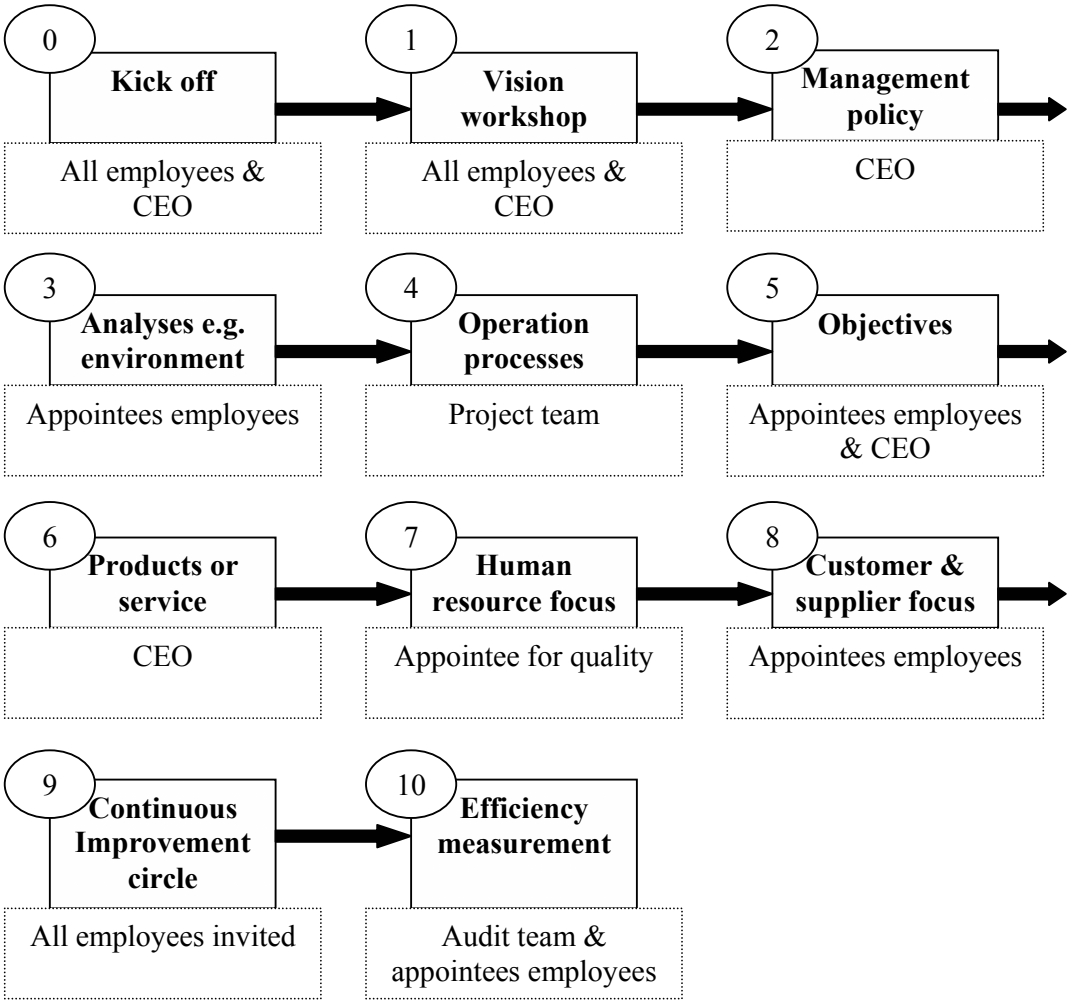


Figure 8: Strategy for the introduction of an IMS in SMEs and identification of people responsible for each task (*source:* Mackau, 2003)

3.4 The EMS Club Model

The Environmental Management Systems Club (2002) in Norwich has developed an innovative 12-month training programme, which offers assistance to SMEs to improve their environmental performance. The model includes audits, initial reviews and 10 seminars with practical workshops, task setting and briefing papers. The seminars were developed to provide the knowledge and skills to enable the SMEs to implement an EMS based around the requirements of the ISO 14001 and EMAS standards (EMS Club, 2002). However, some of them also consider (and some have the potential to consider) quality and health and safety issues. Table 5 illustrates the briefing papers that each seminar includes and their links to Integrated Management Systems.

Seminars and Briefing Papers	Links to Integrated Management Systems
1.1 Introduction to EMS	Reference made to reducing bureaucracy by integrating management processes into one system or building on existing management systems
1.2 Continuous Improvement Spiral	Can be applied to any management system
1.3 Environmental Issues	Links to H&S management where appropriate
1.4 Initial Environmental Review (IER)	Existing management systems are investigated to ensure that the EMS builds on existing processes and does not add another layer of management
2.1 Environmental Law	Discusses other issues where appropriate (e.g. H&S for COSHH regulations; EIA & Planning regulations)
2.2 Waste Regulation	Includes storage and hence H&S issues
2.3 Permits and Licences	
3.1 Legislative Control	SMEs are asked which additional legislation they would like to include – can include anything such as food hygiene, H&S, planning etc.
3.2 Writing an Environmental Policy	Reference made to using existing policies as a framework and also producing an integrated policy, but emphasizing the need not to marginalize issues as a consequence. Discussion undertaken in reviewing exercise as to what are essentially health and safety issues and what are environmental issues per se.
3.3 Environmental Programmes	Whilst it is aimed at ISO14001, it can also include ISO 9000:2000, OHSAS 18001/BS 8800 or any other management system where action is required by specified deadlines
4.1 Operational Control	The processes can be applied to any management system
5.1 Training Assessment and Management	The processes can be applied to any management system
5.2 Roles and Responsibilities	The processes can be applied to any management system
5.3 Self-Assessment and Gap Analysis	Can be also used to assess gaps between existing management systems and any other ISO based standard
5.4 Emergency Planning	The processes can be applied to any management system
6.1 Project Assessment	The processes can be applied to any management system
6.2 Mass Balance Equations	Can be linked to QMS
7.1 Risk Management and Risk Register	A risk register that is capable of handling all business risks is put together
8.1 Procurement	Production of a system based on an integrated assessment process (but only provides the question set for Environment)
8.2 Measuring and monitoring	The processes can be applied to any management system – but this would need to be informed by the delegates
8.3 Communications	The processes can be applied to any management system
9.1 Auditing Skills and Corrective Action	The processes can be applied to any ISO based management system
9.2 Management Review	The processes can be applied to any ISO based management system
9.3 Environmental reporting	The processes can be applied to any management system
9.4 Environmental manual	
10 Site Audit	Can include H&S where the two disciplines interface

Table 5: The EMS Club Model elements and their links to IMS (EMS Club, 2003)

3.5 Evaluation of the support schemes

With reference to Chapter 1.2.1, it can be argued that not all the three guides use the same standards as a basis for integration. As can be seen in the table of contents of the IMS guide for SMEs, proposed by Scipioni *et al.* (2001) (see Appendix B), this manual has adopted the ISO 14001 approach to integration. The elements of ISO 14001 (or the EN ISO 14001 approach to H&SMS) have been broadened (e.g. policy, objectives and targets, documentation, audits, etc) in order to include the aspects of all the three systems (although the product realization issues raised by ISO 9000:2000 are covered separately, in the third section of the dedicated to IMS chapter). The strength of this guide is that it provides detailed information about how the IMS should be built and what should include, for example how the management review should be conducted or what the IMS policy should comprise. However, it is a theoretical model and no information has been provided about its effectiveness in practice yet.

On the contrary, the model proposed by Mackau (2003) uses Quality Management Systems as a basis of the integration of QMS, EMS and H&SMS, owing to the long tradition of this segment (Mackau, 2003). In this case, environmental and health and safety aspects have been integrated into the ISO 9000:2000 elements (e.g. products, processes, customers). Strong points of this model include the consideration of 'benchmarking', the strategy for employee participation and the fact that experience has shown that this methodology is very successful for IMS implementation by SMEs. However, potential weaknesses may be that the Health and Safety Management Systems considered have been developed in Germany (where the model was successfully tested), consequently their compatibility with the UK and European legislation needs to be examined.

As one might expect, the EMS Club Model is based on Environmental Management Systems (ISO 14001 and EMAS). Although this model cannot be considered as a detailed approach to IMS implementation, it provides a detailed seminar programme, which, if expanded, can cover all the requirements of an IMS. Despite its effectiveness for EMS implementation by SMEs though, the programme has not been applied to IMS yet, thus its success in this area is uncertain.

In the light of the above mentioned strengths and weaknesses of each model, as well as of the actual picture examination that follows, the last chapter of this research will seek to construct a best practice model for IMS adoption by SMEs, by identifying all the areas that a support scheme should cover.

4 Methodology

4.1 Methodology

As stated in the introduction, the empirical picture of Integrated Management Systems in Small Medium-Sized Enterprises is patchy at best, as this industry sector is under-researched (Hillary, 2000). This part of the research seeks to fill this gap by investigating the actual picture and the perceptions of small and medium firms about these kinds of management systems. These aims were addressed through a questionnaire survey conducted in Norfolk, East Anglia. A number of SMEs were approached first by e-mail and then by telephone in order to identify what companies are either employing IMS or wish to adopt an integrated approach to quality, environment and health and safety, as well as what they expect form a support scheme to comprise in order to enable them to implement and integrate the systems.

The bulk of the small and medium businesses' contact information was obtained from the Norwich 2003/04 Yellow Pages, in order for the sample to be random and include SMEs with different initial situations (ISO 9000:2000 and/or ISO 14001 certification, OHSAS 18001/BS 8800 implementation, no certification, etc.) A small list was also acquired by the East Anglian Business Environment Club (EABEC, 2003). An e-mail questionnaire was initially distributed to 353 SMEs (although 42 returned as undelivered), which were selected according to their industry sector, as companies that are involved in production processes (such as manufacturing, printing, engineering and packaging) are more likely to be aware of IMS than service-providing businesses. The questionnaire was accompanied by a covering letter, which introduced the nature of the study, underlined the importance and gratitude of responding and the fact that any information given would be treated with strictest confidence and anonymity. In addition, instructions to answer the questions were provided, as well as a fax number as an alternative option for replying to the questionnaire. A reminder was sent after three weeks as a consequence of the low response rate of the first e-mail. However, although there was great emphasis on the importance of the survey results on small and medium businesses, the number of the answers remained poor. In order to overcome this problem, 40 companies, selected

randomly, were approached by telephone. Figure 9 illustrates the above described process as well as the final response number.

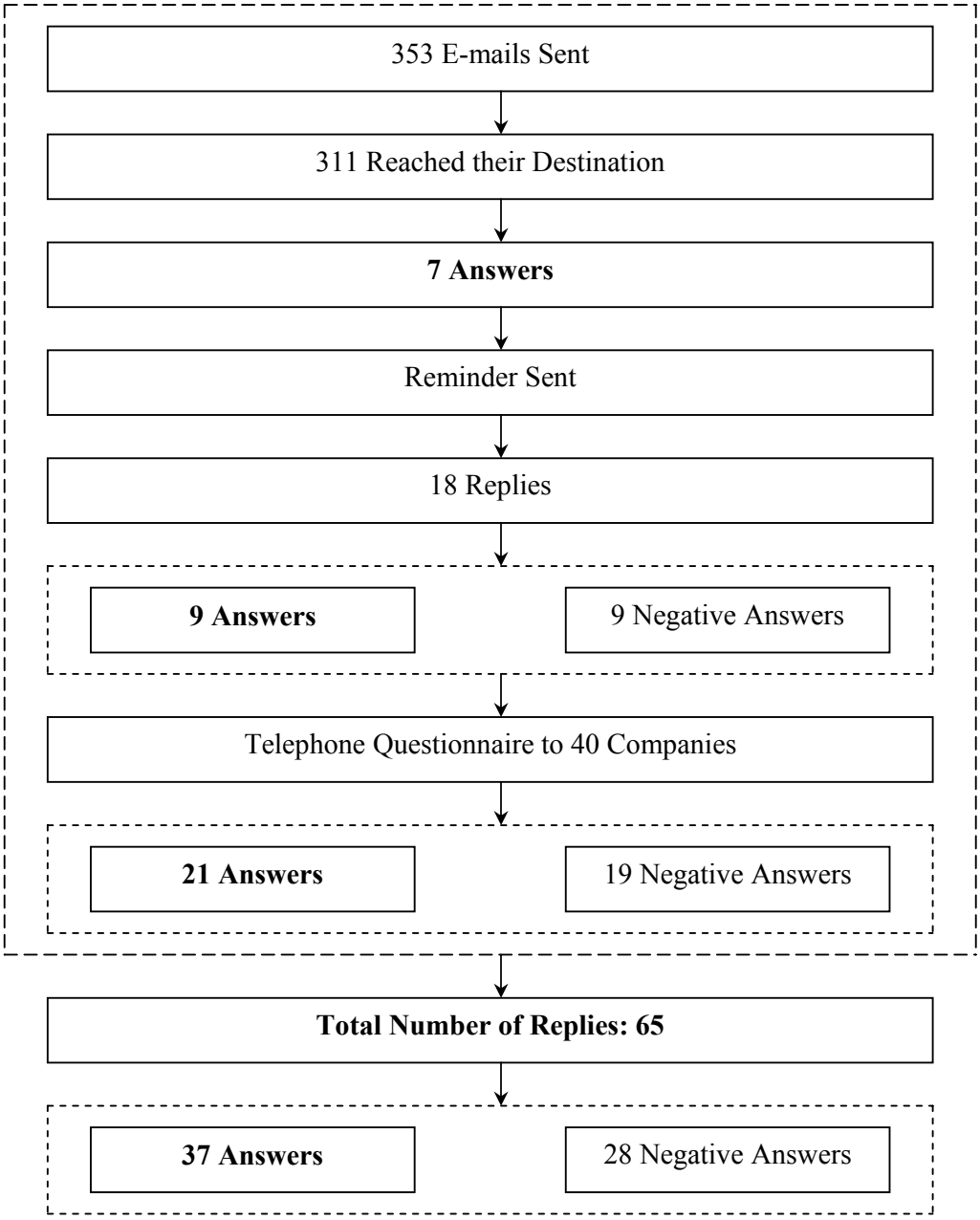


Figure 9: Methods of data collection and total response number

As can be seen, a response rate of 11.9% (37 responses) was achieved. Although this rate seems to be low, it is similar to response rates reported from other surveys concerning small and medium firms (Storey, 1994).

The questionnaire was divided in two sections. The first section aimed to establish general information about each company and the management systems that are already in operation. To be more precise, first, brief details concerning the nature of each company (e.g. the number of company employees or the kind of company's activities) were requested. The questions that followed intended to identify what kind of Quality, Environmental and Health and Safety Management Systems each company has in place, if these operate separately or in an integrated manner, as well as the reasons why the company has not implemented an IMS (if this is the case). Other topic areas covered include the job title and the qualifications of the person(s) responsible for each system.

The second section applied to companies that operate an integrated management system. Topics covered here encompass which management systems each company has integrated, as well as whether it was guided or supported by an external organization to do so. Another issue that this part of the questionnaire addressed is the motivations that drove each enterprise to adopt an IMS and if the expected benefits were obtained. To conclude, both the sections requested from the respondents to identify the most appropriate elements for their firms that a support scheme has to include in order to enable them to implement an Integrated Management System.

The questionnaire was developed to be in accordance with the theory of the IMS topic. Therefore, all the areas covered are strongly linked to the first part of the research. Table 6 summarizes these areas and illustrates the links to theory.

Areas covered	Links to Theory
➢ Categories of QMS, EMS, H&SMS	Chapter 1.2.1
➢ Categories of IMS	Chapter 1.2.1
➢ Drivers/Benefits of IMS	Chapters 2.2, 2.3
➢ Barriers to IMS	Chapter 2.4
➢ Support schemes	Chapter 3

Table 6: Areas covered by the questionnaire and links to theory

A copy of the questionnaire is presented in Appendix C.

4.2 Limitations

As one might expect, this survey is not without limitations. To begin with, the large number of SMEs in Norfolk and the low response rate that was achieved (probably due to the special characteristics of this industry sector and the fact that the questionnaire was sent by e-mail) make the results appear not statistically reliable. Ideally a larger sample size would have been chosen (i.e. a list from the Norfolk County Council) to ensure that the response rate represented 10% of the total, and the questionnaire would have been sent by post, but due to financial limitations this was not possible. In addition, the questionnaire assumes that the respondents have an adequate degree of knowledge of what IMS is, assumption that proved in some cases wrong. For this reason, background information on the topic (e.g. IMS definition) could have been included in order to reduce the ambiguity in what survey respondents felt contribute to. As a consequence, this study presents indications and provides only an overview of the actual picture.

Furthermore, the respondents' answers can be biased, because they choose to answer as a result of having good performance. This issue is more associated with the list of companies obtained from the EABEC, as firms registered in this club are more likely to have good environmental performance. However, the number of these companies is small and as Dillman (1978) argues, with self-administered questionnaires respondents are unlikely to choose an answer to please you or one that is socially desirable. Therefore, as far as this limitation is concerned, responses are likely to be a true reflection of the company.

5 Survey results analysis

5.1 Company characteristics and negative answers

As mentioned in the methodology, a response rate of 11.9% (37 companies) was achieved. With reference to the EU definition about SMEs given earlier, most of the companies are medium sized (78.4%), while only 21.6% are small sized enterprises. As it was not possible to obtain economic details or information concerning the ownership of each firm, the criteria used for this distinction is the number of employees (0-49 small firm, 50-249 medium firm).

The low response rate exposes the lack of knowledge that SMEs have on the Integrated Management Systems topic. This issue is particularly associated with small companies, as not only the majority of the SMEs that chose to reply to the questionnaire were medium sized enterprises (50-249 employees), but also, as will be seen later on, only two small firms have implemented an IMS.

Furthermore, it can be argued that the variety in company categories is satisfactory as 29.8% of the companies (11) are part of the engineering sector (e.g. precision engineers, civil engineers, automotive engineers, electronic engineers, etc); 24.3% (9) are manufacturing firms (e.g. boat manufacturers, steelwork manufacturers, sports equipment manufacturers, etc); 21.6% (8) of the enterprises cover printing activities; 13.5% (5) are involved in the production of packaging materials (e.g. polythene films, bags, etc); and 10.8% (4) are various companies that provide different kinds of services (e.g. health care or emergency property repair companies). This company diversity is illustrated in Figure 10.

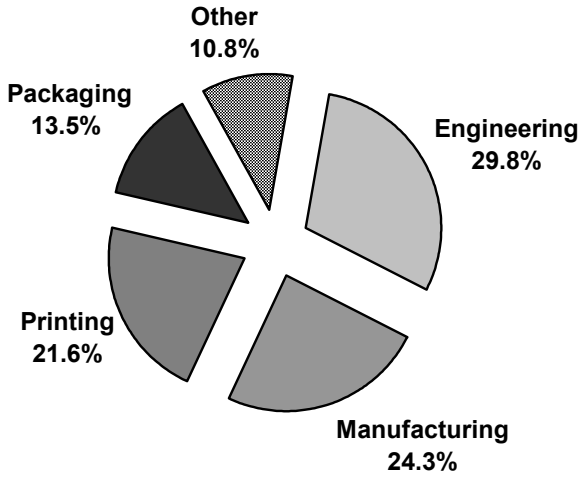


Figure 10: Company categories

Apart from this, a noticeable number of negative answers were received. Twenty-eight companies (10%) of the initial sample decided not to answer the questionnaire for the reasons that are presented in Figure 11.

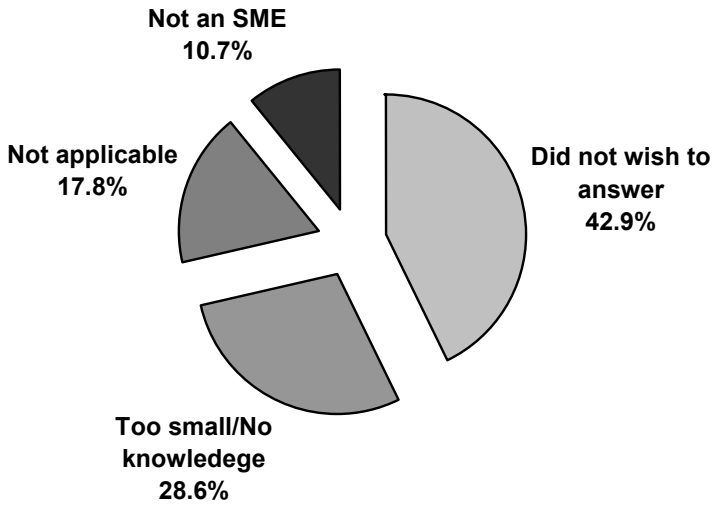


Figure 11: Reasons for negative answers

The rate of the SMEs that did not wish to answer is considerably higher (42.9%) than the other ones due to the telephone survey, as people who are approached by telephone do not have the option to just ignore the researcher. In addition, 28.6% of

the firms that gave a negative answer did so because they have the perception that their company is too small or they do not have the knowledge to be involved in a survey of this kind, while 17.8% believe that Integrated Management Systems are not applicable to their company's activities. Consequently, they reject something that they are not really aware of and as O'Laoire & Welford (1998) with reference to EMS point out, most SMEs bury their heads in the sand, not recognizing the challenges that face this industry sector. Finally, a small number of enterprises (10.7% - 3 companies approached by e-mail) replied that they do not belong in the SME sector. This was the result of the fact that the sample was selected randomly from the Yellow Pages, thus a small statistical error of this kind was expected.

5.2 Management systems

As was expected from the literature review, many small and medium businesses (75.7%) have chosen the ISO 9000:2000 approach to Quality Management Systems, in most cases due to the fact that the standard is a requirement to cooperate with large companies. Figure 12 shows the different kinds of QMS that the surveyed firms operate.

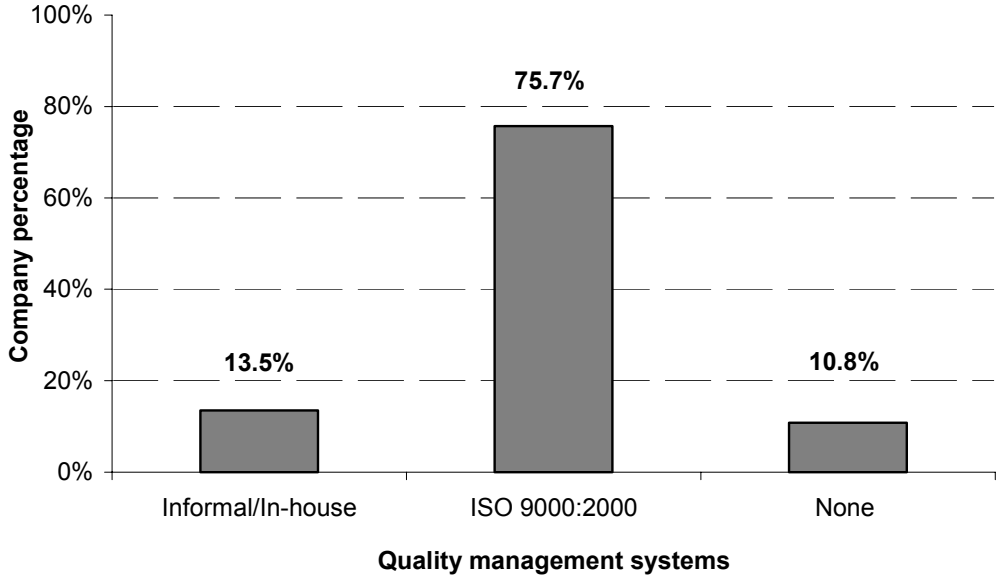


Figure 12: Quality management systems categories

According to this diagram, the rate of companies that do not have a Quality Management System in place is considerably low (10.8%), with half of them being

service-providing companies. With reference to Figure 13 on the other hand, ISO 9000:2000 seems to cover all the industrial sectors included in this study, with the engineering and the manufacturing to be the primary ones (28.5% and 25% respectively). 21.5% of the companies that have implemented the standard are printing, 17.8% are members of the packaging sector, and service-providing businesses follow with 7.2%. These results confirm the argument supported by North *et al.* (1998) that a large number of SMEs have adopted the standard (see Chapter 1.2.1).

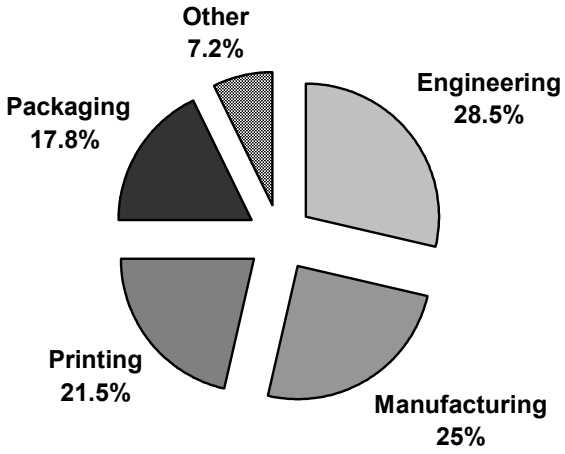


Figure 13: Proportion of company categories with ISO 9000:2000

The picture of the SMEs in terms of Environmental Management Systems is to some extent different. To be more precise, although the percentage of the companies that do not have any EMS in place at all is the same as QMS (5.4% manufacturing and 5.4% packaging businesses), informal/in-house management systems rather than adoption of a standard (ISO 14001) is here the primary approach (51.4% and 37.8% respectively). The following graph illustrates the different kinds of EMS and as can be seen none of the companies have registered to EMAS, fact that is in accordance with the results of the survey conducted by Hillary (1999; 2000) concerning EMS in small and medium firms (see Chapter 1.2.1).

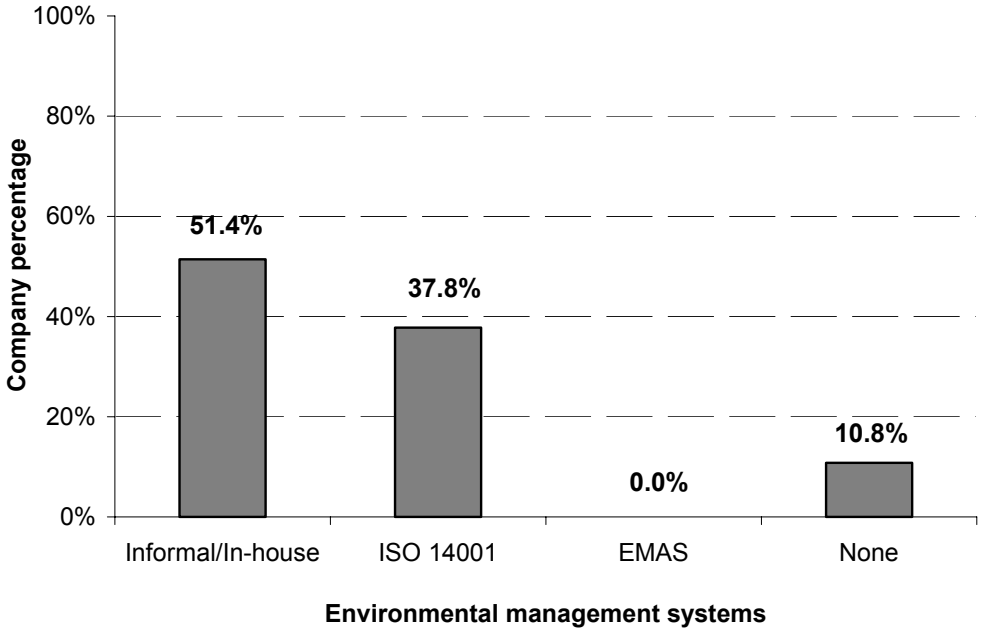


Figure 14: Environmental management systems categories

Similarly to ISO 9000:2000, the engineering sector comes first among the company categories that have implemented ISO 14001 (35.7%), the manufacturing and printing enterprises follow with the same percentage (28.6%) and interestingly, although the packaging sector has significant environmental aspects, its percentage is relatively low (7.1%) (see Figure 15).

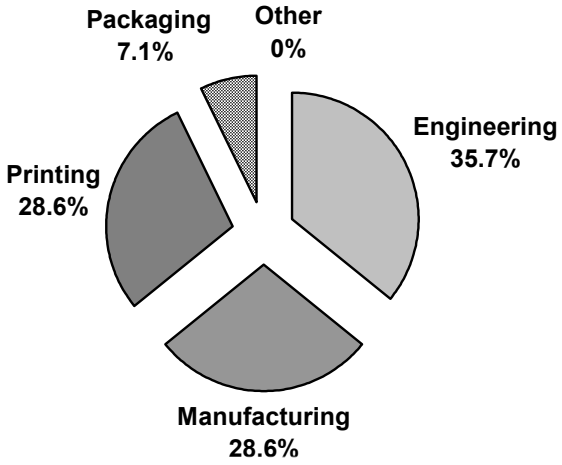


Figure 15: Proportion of company categories with ISO 14001

As far as the Health and Safety Management Systems are concerned, most of the SMEs seem to have an informal/in-house H&SMS (83.8%) in place. Once more, these findings agree with the literature review outcomes presented in Chapter 1.2.1, as this percentage is similar to that found in research on H&SMS in SMEs, carried out by Vassie *et al.* (2000) (in that case, 80% of the companies had in place a written safety policy, risk assessment and accident reporting). Furthermore, only 5.4% (2 printing firms) have adopted the OHSAS 18001 standard, whereas none of the SMEs have implemented the BS 8800 one, facts that also show that health and safety requirements are not generally met by the standard approach in this industry sector. All the results are demonstrated in the following diagram (Figure 16).

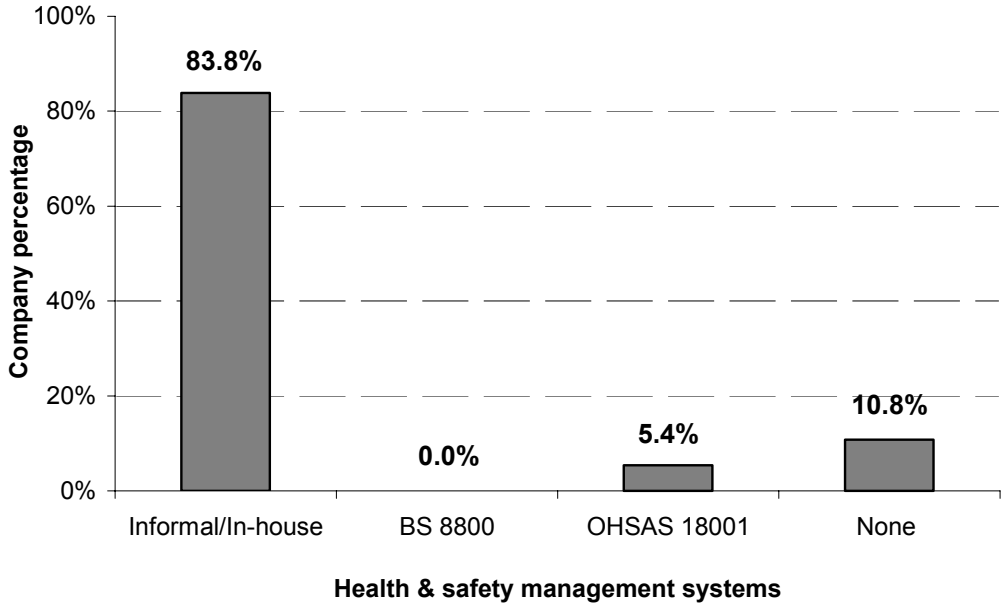


Figure 16: Health and safety management systems categories

To conclude, the engineering sector seems to have the highest rates, not only in implementing management systems (QMS, EMS, H&SMS), but also in adopting the standards (ISO 9000:2000, ISO 14001 - OHSAS 18001 is an exception as only two printing firms have implemented the standard). Manufacturing and printing firms follow, while packaging and service-providing companies come last. However, no valuable statistical analysis can be carried out by comparing the company categories due to their different proportion.

5.3 Integrated Management Systems

Only nine SMEs (24.3%) replied that are currently operating or implementing an Integrated Management System. The majority of them (10.8%) belong to the engineering sector, while two (5.4%) are manufacturing, two (5.4%) are printing and one is packaging company. On the other hand, the 75.7% of the SMEs that does not have an IMS in place consists of seven engineering (18.9%), seven manufacturing (18.9%), six printing (16.3%) firms and the four service-providing companies ('other' company category). Figure 17 summarizes these results.

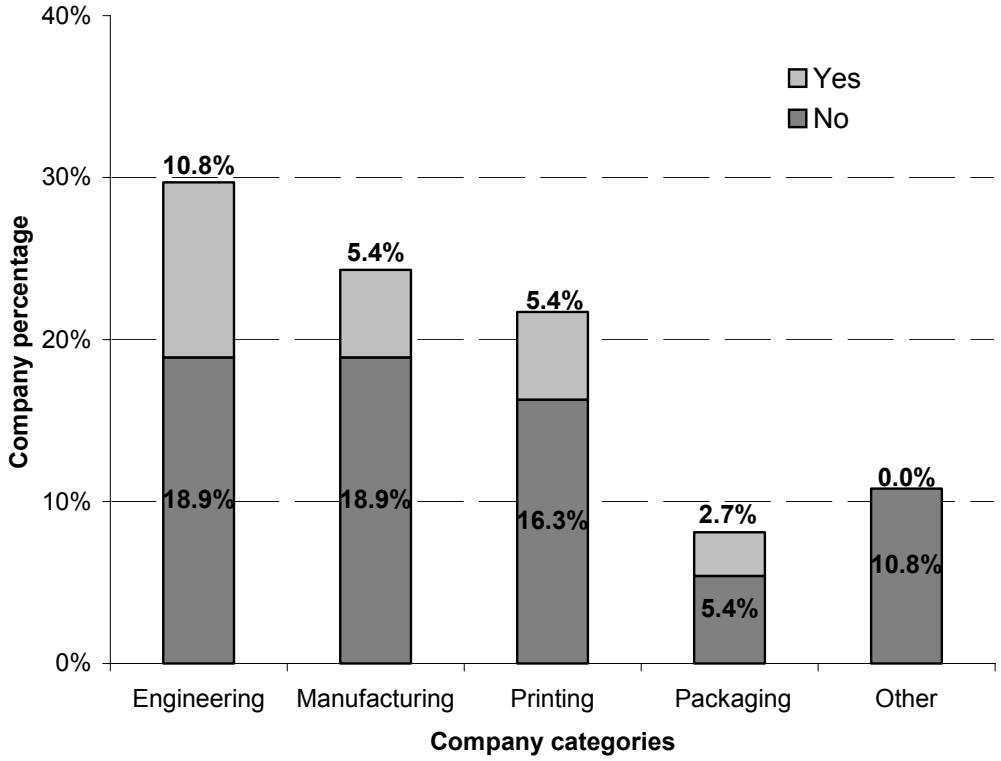


Figure 17: Proportion and categories of companies with and without IMS

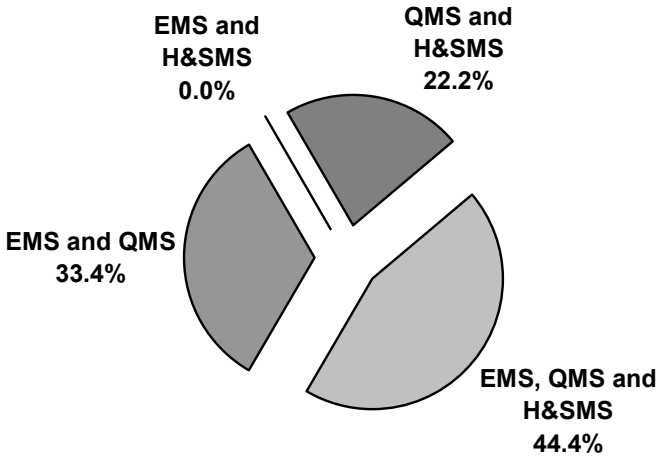


Figure 18: Types of management systems that the SMEs have integrated

Not all the nine companies with an IMS in place have integrated the same systems. As is shown in Figure 18, four SMEs (44.4%) have integrated Quality, Environmental, and Health and Safety Management Systems; three (33.4%) have integrated QMS and EMS; and two (22.2%) have implemented a Quality and Health and Safety Integrated Management System. However, all of them are certified to ISO 9000:2000 Quality Management Systems. This is not surprising given that over 75000 UK organizations have an ISO 9000-certified QMS in place (Douglas and Glen, 2000) but, of all the 28 companies that are certified to the standard, only 9 have an IMS in place. On the other hand, SMEs that are certified to ISO 14001 seem to be more open to integration, as half of those that have implemented the standard have also implemented an IMS. This probably indicates that SMEs with ISO 14001 are better informed about Integrated Management Systems or that ISO 14001 constitutes a more effective basis for IMS implementation than ISO 9000:2000. However, further study is needed in order for these issues to be clarified as, the different number of companies certified to ISO 9000:2000 and ISO 14001, as well as the lack of information about the standard used as a basis of the IMS by the surveyed SMEs, do not allow us to carry out reliable analysis. In terms of health and safety standards, despite the fact that all the companies that have adopted OHSAS 18001 have also an IMS in place, their small number (2) does not offer valuable conclusions.

As a final point, although every company is required by law to have a health and safety policy (Fishwick and Bamber, 1996), Health and Safety Management Systems appear to be less involved in IMS (e.g. no company has integrated H&SMS with EMS). This is probably the consequence of the informal nature of the health and safety systems, which most of the surveyed SMEs operate.

5.3.1 Drivers to Integrated Management Systems

With respect to the motivations to IMS adoption, the issues raised by the SMEs are in general the same with those found throughout the literature (Figure 19 illustrates all the drivers in detail). However, it has to be underlined that all the companies perceive the avoidance of the duplication between the procedures of the systems and the streamlining of paperwork and communication to be the most significant ones (although the rate is slightly different from the other incentives). This finding supports the argument raised by Hillary (1999; 2000) that the excessive level of bureaucracy from ISO 9000:2000 implementation frightens most SMEs. As a consequence, they aim to avoid repeating the same time-wasting procedures and improving internal efficiency by implementing an Integrated Management System.

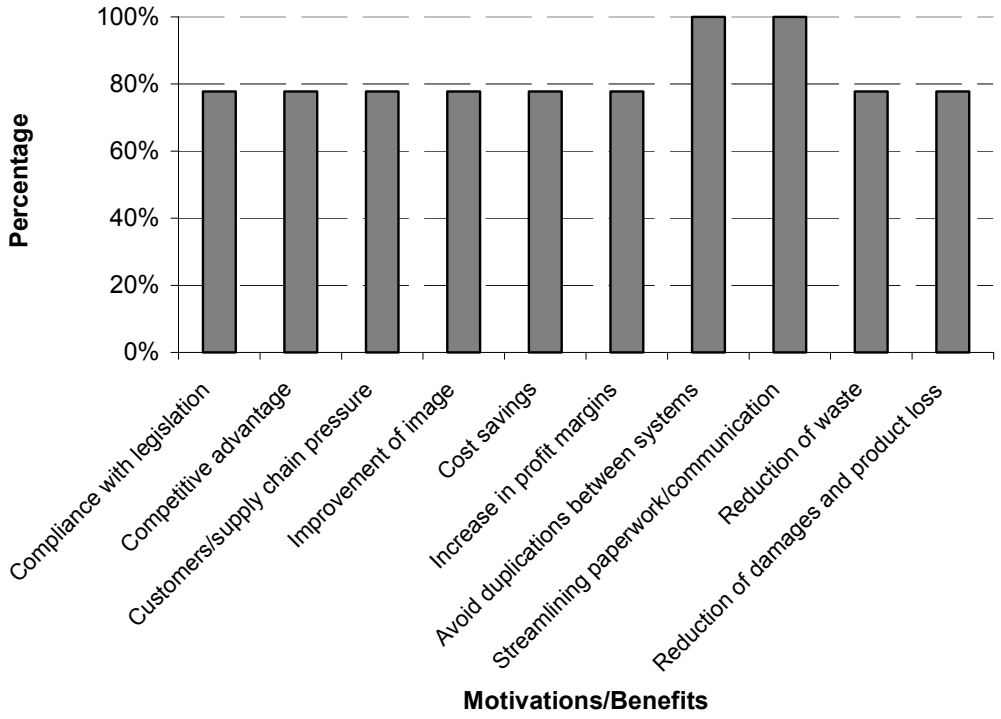


Figure 19: Motivations/Benefits of SMEs adopting Integrated Management Systems

5.3.2 Barriers to Integrated Management Systems

The high rate of the companies (75.7%) that are not currently operating or implementing an IMS is the result of the important barriers that hinder SMEs to integrate the systems. These barriers were identified by the companies that do not have an IMS in place (see Figure 20).

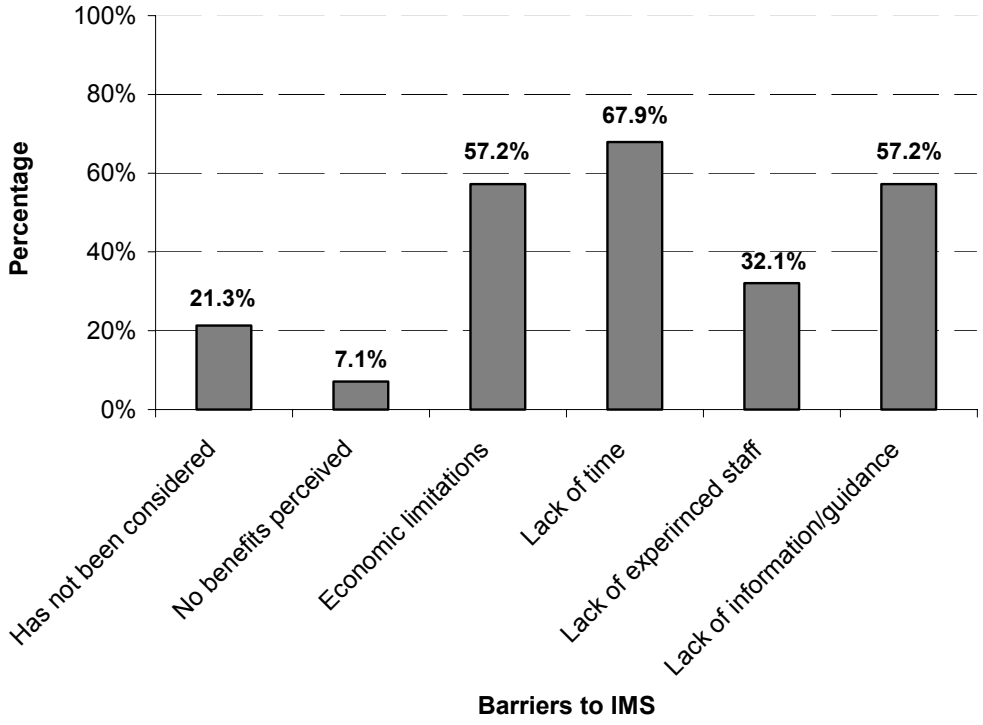


Figure 20: Barriers of SMEs adopting Integrated Management Systems

Although all the above barriers to IMS adoption were revealed by the review of the literature, it is interesting to see how the surveyed SMEs prioritise them. Lack of time (67.9%) seems to be the most important hurdle that small and medium businesses encounter in order to adopt an IMS. Economic limitations and lack of information and guidance follow with the same percentage (57.2%), while 32.1% of the SMEs stated that they do not have experienced staff to integrate the systems. Finally, IMS have not been considered in 21.3% of the studied firms, whereas 7.1% rejected them as non-beneficial for their companies (however, no information was given about the way they came to this conclusion).

5.3.3 Quality of Integrated Management Systems

Several facts show that the quality of the Integrated Management Systems that the SMEs have implemented is to some extent open to discussion. The first issue of concern emerged in section 3.1 of this chapter, where Health and Safety Management Systems appeared to be the weakest link because of their little involvement in IMS. To be more specific, apart from the two firms that have adopted the OHSAS 18001 standard, four firms stated that they have integrated an informal/in-house health and safety program into other management systems. However, there is a possibility that these informal H&SMS do not fulfill all the requirements of the standards (BS 8800 or OHSAS 18001), fact that may influence the IMS effectiveness. This is probably the reason why although one packaging enterprise has an informal H&SMS in place, it has not been integrated into the Quality and Environmental Integrated Management Systems that the company is currently operating.

The people responsible for the management systems (see Figure 21) are another indicator of the IMS quality, as a Quality Manager is the person charged with the environmental responsibilities in 55.6% of the SMEs with an Environmental Management System integrated into other systems (either into QMS and H&SMS or only into QMS). The same kind of manager is responsible for the health and safety issues in one of the companies that have integrated all the three systems. What is more, none of the SMEs that have implemented an IMS has an Environmental Manager. It has to be recognized however that the rates of Quality Managers and Health and Safety Managers who are responsible for QMS and H&SMS respectively are higher.

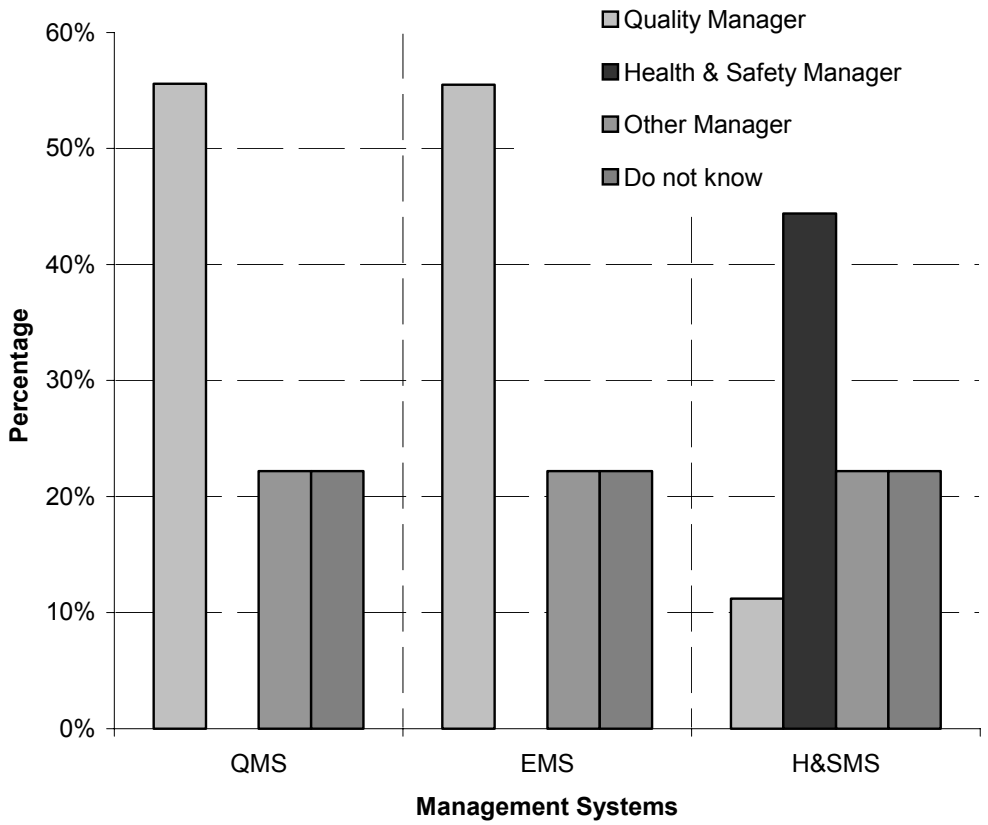


Figure 21: Job titles of the persons responsible for each management system in the SMEs with an IMS in place

In the same context, the picture of the qualifications of the managers, which is illustrated in Figure 22, is even more discouraging. As was expected from the previous analysis, the persons responsible for the EMS seem to be the most inadequate ones. One manager has obtained a postgraduate degree, two have undergraduate level education, while the respondents did not know the qualifications of the managers responsible for environmental issues in 66.6% of the SMEs. However, the skills of the people in charge with quality and health and safety responsibilities appear to be slightly better, due to their work experience and the NEBOSH Certificate, which two health and safety managers have obtained. As a final point, an issue raised by both Figures 21 and 22 is the high rates of the 'Do not know' response. Taking into account that the questionnaire was expected to be answered by the most appropriate persons in each company, this may indicates the low level of management systems awareness among employees in small and medium firms.

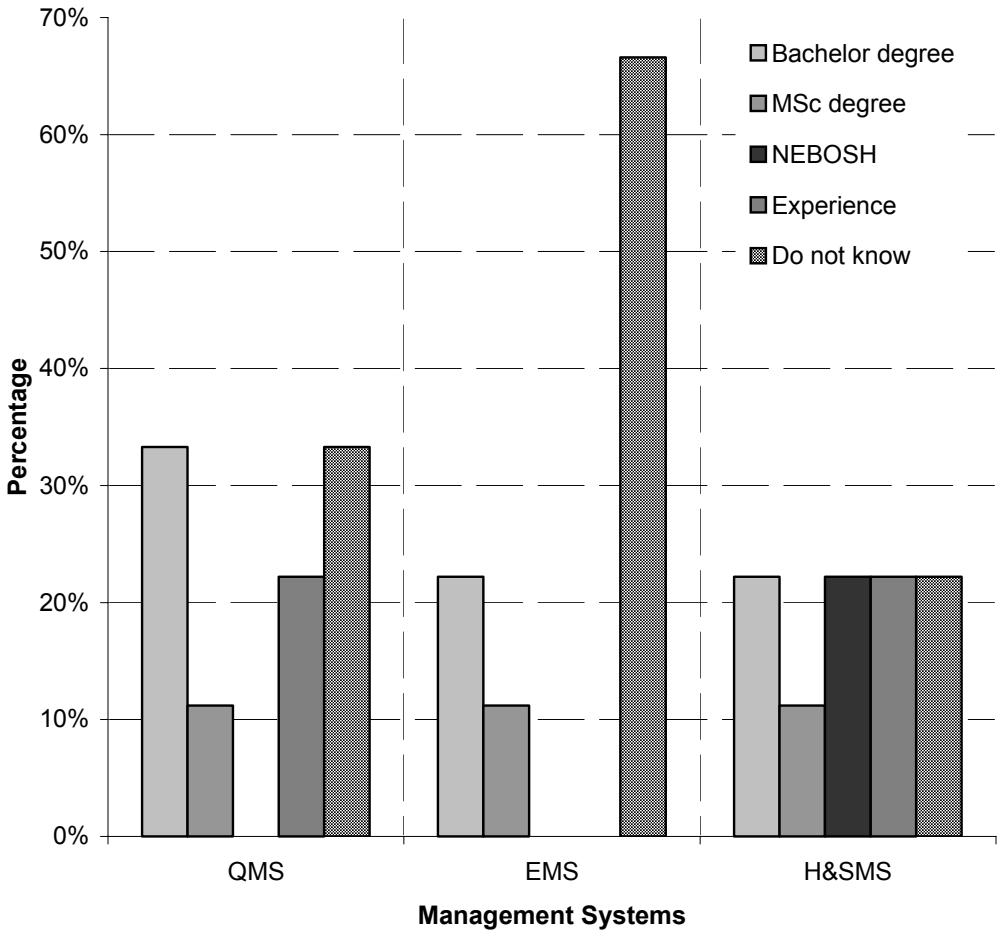


Figure 22: Qualifications of the persons responsible for each management system in the SMEs with an IMS in place

On the contrary, all the companies generally obtained the expected benefits (only one printing firm stated that it did not achieve any reduction in equipment damage and product loss, whereas the eight remaining asserted that they obtained all the expected rewards), fact that proves the efficiency of the Integrated Management Systems that the SMEs have in place. The above argument is to some extent debatable though, as the companies may achieved all their goals due to their small range of activities and therefore to the few requirements that needed to be fulfilled in order for the IMS to be adopted. Further research concerning the development of an IMS tailored to the SME sector can clarify the level of accuracy of this argument.

5.4 Support schemes

Various survey findings underline the fact that the SME industry sector needs assistance in order to take advantage of the many interactions between Quality, Environmental, and Health and Safety Management Systems. To begin with, reference has already been made to the high rate of the companies that lack information on the topic, economic resources, as well as in-house experienced staff. Second, most of the SMEs with an Integrated Management System in place (66.6%) were guided and supported to overcome these hurdles (see Figure 23). As can be seen in this figure, 22.2% of the surveyed firms were supported by the Business Link, one printing company (11.2%) by the British Printing Industries Federation (BPIF) and 33.4% although stated that they were guided, they did not specify by which organization.

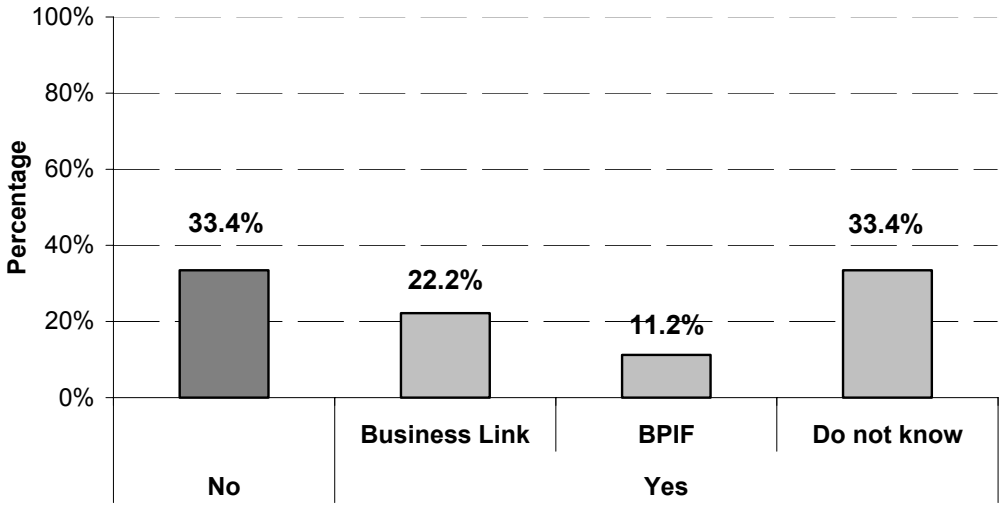


Figure 23: Guidance/support given to SMEs in order to implement IMS

Finally, the fact that the bulk of the firms (64.3%) that have not adopted an IMS are willing to join a support scheme in order to integrate the systems is another evidence of the assistance need to be offered to this kind of enterprises (see Figure 24).

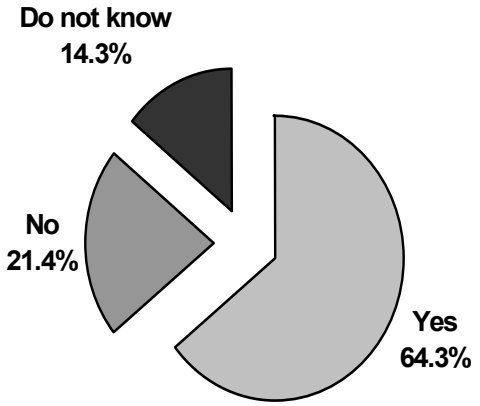


Figure 24: Willingness to join a support scheme

The reason why most of the companies without an IMS in place have not joined a support scheme, although they are willing to do so, is demonstrated in the following graph (Figure 25). As is shown, 71.4% of the SMEs are not aware of available guidance and support schemes that can enable small and medium companies to implement management systems (QMS, EMS, H&SMS or IMS). The rest of the companies (28.6%) consist of four (14.3%) SMEs that are informed about the Envirowise; two (7.2%) that are informed about the East Anglian Business Environment Club (EABEC); and two (7.2%) that although replied that they are aware of support schemes, they did not specify which ones.

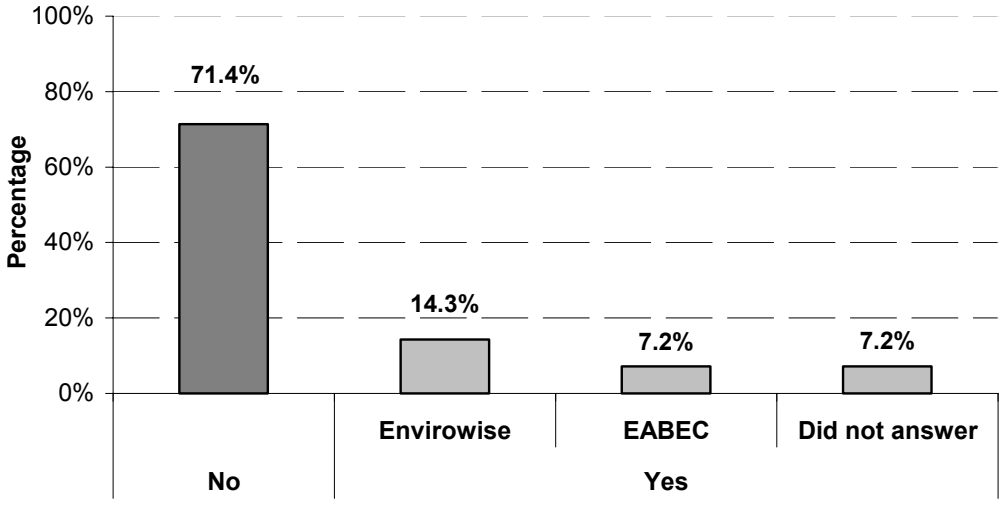


Figure 25: Awareness of available guidance/support schemes for management systems adoption

5.4.1 Support scheme elements

All the companies were requested to propose elements that a support scheme has to comprise in order to enable SMEs to implement Integrated Management Systems. The responses are demonstrated in Figure 26.

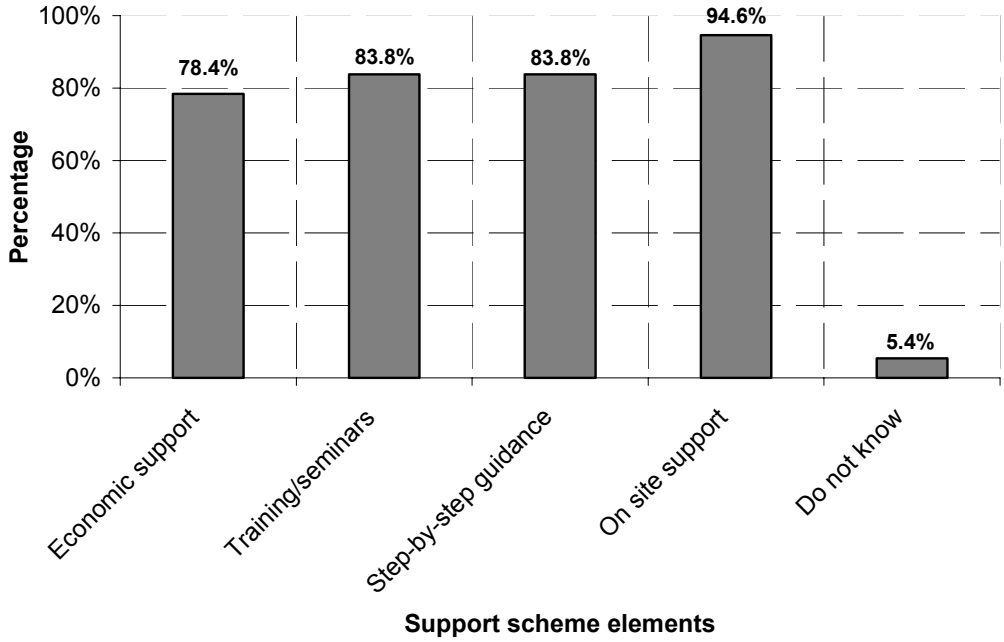


Figure 26: Support scheme elements

As can be seen, on-site support with periodic review of progress is the assistance that SMEs need more than anything else, as this was the issue raised by almost all the companies (94.6%). Thirty-one firms (83.8%) requested training courses and seminars, as well as step-by-step guidance. Economic support seems to come last, although its high rate cannot be ignored (78.4%).

Taking into consideration these results, as well as the findings of the literature analysis carried out in Chapter 3, the following chapter seeks to identify the elements that a support scheme has to comprise in order to be effective.

6 Constructing a best practice model

In evaluating both the literature review findings and the questionnaire outcomes, it can be concluded that in terms of IMS implementation, SMEs are like small children trying to make their first steps. They need not only a detailed manual with the elements of the Integrated Management Systems, but also on-site guidance and training in order to effectively follow it (as this was the primary request of the surveyed companies). Chapter 3 introduced three programmes that, despite their individual limitations and their different approaches to IMS, aim to enable small and medium companies to integrate the systems. The synthesis of these three programmes with the questionnaire results on this area can provide us with a framework of a potential best practice model (see Table 7).

Elements	Content	Assistance methods	People involved
1. Introduction to IMS	➢ Introduction to QMS, EMS, H&SMS ➢ Preliminary analysis of legal and other requirements ➢ Analysis of existing operational methods, activities/ products/ services	➢ Workshops ➢ Site review	All employees and management
2. IMS Policy and Programme	➢ Content of IMS Policy ➢ Objectives and Targets	➢ Workshops	Management and project team
3. Operation processes/ Product realization	➢ Identification of all work and production processes ➢ Operational and document control	➢ Site review ➢ Workshop	Project team

4. Human and system resources	➢ Roles and responsibilities ➢ Training and emergency plan ➢ Internal communication ➢ Gap analysis	➢ Workshops	Project team
5. Customer and supply chain issues	➢ Procurement ➢ Customer requirements and needs analysis ➢ External communication and information	➢ Workshops	Project team
6. Measurement, analysis and improvement	➢ Audits ➢ Efficiency measurement and monitoring ➢ Non-conformity control ➢ Continuous improvement	➢ Site review ➢ Workshops	➢ Project team ➢ All employees

Table 7: Areas that a support scheme should cover, assistance methods and people involved

The above described framework seeks to identify the areas that a support scheme has to focus on. Guidance and training on each element will be provided to the appropriate groups of people either through seminars/workshops or through site reviews. All employees should be aware of the IMS, as the continuous improvement concept requires participation of all the staff. Furthermore, a project team comprising quality, environmental, and health and safety managers should be developed. This team will be responsible for the implementation and operation of the IMS, as well as for the internal and external communication. Internal communication is essential for the success of the system as it circulates the outcomes of the audits and potential system gaps and problems throughout the company, thus it contributes in continuous improvement. With respect to the external communication, the project team will be also responsible for disseminating information about the IMS to various stakeholders (e.g. customers, suppliers, subcontractors, regulators, etc).

However, some issues have not been covered or need to be further examined. First, the actual picture of the SMEs revealed the economic limitations that the sector faces. Although these limitations have also been the topic of discussion by many authors (e.g. Hillary, 1999; 2000; Brio & Junquera, 2002), they have not been considered by the described IMS models. In order for small and medium companies to overcome this barrier to Integration Management Systems adoption, they can take advantage of existing programmes that offer economic support to implement EMS (e.g. Envirowise or programmes instigated by local authorities) and then go a step further, towards integration. Joint IMS is another potential solution to this problem offered by the EMS area. Small and medium companies can work as a group and share the costs of IMS implementation, following the example of 30 SMEs in Sweden that formed a network and established a joint EMS in accordance with ISO 14001 (Ammenberg *et al.,* 2000).

Second, it has already been mentioned that the three models/guides described in Chapter 3 do not use the same standard as a basis for IMS. Theory asserts that an IMS can be based on Quality, Environmental or Health and Safety Management Systems (see Chapter 1.2.1), but is one of them more suitable for SMEs? Mackau (2003) for example argues that the use of ISO 9000:2000 as a basis is preferable for the SME sector due to its long tradition and to the large number of standardized processes of building it. Furthermore, as one might expect, if a company has already implemented a standard, it is more likely to choose to build an IMS on it. Is the fact that ISO 9000:2000 is adopted by small and medium firms more than any other standard (see Chapter 5.2), another reason to support the previously stated argument?

Finally, the questionnaire survey showed differences in the perceptions among the company categories, issue that has not been raised by any of the described models. The proposed experiences model by Mackau (2003) has been successfully applied in the engineering sector but no information is given about its performance in other industry sectors. The model should be also tested in companies that generate larger amounts of waste and therefore have more significant environmental aspects (e.g. packaging or printing firms), as there is a possibility the ISO 14001 approach to integration, provided by the other two schemes, to be more appropriate for them.

7 Conclusions

7.1 Summary

To conclude, although the concept of Integrated Management Systems in terms of quality, environmental and occupational health and safety management is becoming increasingly seen as part of an organization's management portfolio, it has not been widely adopted by Small and Medium-Sized Enterprises. The review of the literature revealed the lack of time, human and financial resources, the different management style and the perception that management systems are too revolutionary and bureaucratic with debatable benefits to be some of the reasons why this occurs. However, small and medium companies lack most of all information about the benefits of the systems and need guidance in order to implement them. In general, SMEs are not aware that the adoption of Integrated Management Systems not only improves their management and their internal efficiency, but also results in cost savings. What is more, a number of external rewards can be gained, such as competitive advantage, improvement of market place and relations with stakeholders, as a result of better quality, environmental, and health and safety performance.

Theory is in agreement with the empirical picture portrayed through the questionnaire survey. The low response rate and the small number of SMEs with an IMS in place exposed the low awareness of the topic among small and medium firms. Furthermore, the quality of the Integrated Management Systems that the companies have implemented is to some extent questionable, particularly due to the poor qualifications of the persons responsible for the systems. Despite the limitations, the findings of the research are perceived to be a true reflection of this industry sector.

With respect to the conclusion that SMEs need assistance and guidance in order to implement an IMS, the research brought to light the areas that an effective support scheme has to comprise. First, a manual that covers all the elements of Integrated Management Systems (from introduction to measurement and monitoring, and from human resources and customers to products and services) is required. This manual is necessary to be followed by on-site, step-by-step guidance in order for its success to be secured. These kinds of guides do exist, but although numerous schemes that provide SMEs with on-site assistance to implement EMS have been instigated and can

be expanded in order to include health and safety issues, they cannot be considered as detailed approaches to integration. What is more, none of them deals with the economic support that small and medium companies need in order to move towards Integrated Management Systems.

7.2 Further study

This survey aimed to introduce the main theoretical principles and present the empirical picture of Integrated Management Systems in Small Medium-Sized Enterprises. Although this has been to some extent achieved, it has already been mentioned that the research was not without any limitations. Therefore, a future study, which can overcome these problems, is necessary to be conducted in order for the results to be more statistically reliable.

In addition, the questionnaire was developed in a simple and undemanding way, and aimed to give an outline of the actual picture. This was the result of the expected low awareness of IMS by this industry sector. Consequently, a more in-depth research needs to be carried out when the concept of IMS has matured, in order for other areas to be covered. Such areas may include:

- The development of an IMS specifically for SMEs.
  - Is the development of an IMS that can cover the specific needs of SMEs necessary?
  - If yes, what elements should this encompass?
- The basis of integration.
  - Which system is in theory more appropriate to be used by SMEs as a basis of integration (i.e. ISO 9000:2000, ISO 14001, OHSAS 18001, other)?
  - Which one do most SMEs use in practice?
  - Are there any differences between company categories?
- The effectiveness of the support schemes.
  - Is the provided support adequate?
  - How do the economic limitations of SMEs deal with?
  - Are all the provided models suitable for all the company categories?

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APPENDIX A

Correspondence between OHSAS 18001, ISO 14001:1996 and ISO 9000:2000

Clause	OHSAS 18001	Clause	ISO 14001:1996	Clause	ISO 9000:2000
—	—	—	Introduction	**0**	Introduction
				0.1	General
				0.2	Process approach
				0.3	Relationship with ISO 9004
				0.4	Compatibility with other management systems
1	Scope	**1**	Scope	**1**	Scope
				1.1	General
				1.2	Application
2	Reference Publications	**2**	Normative reference	**2**	Normative reference
3	Definitions	**3**	Definitions	**3**	Terms and definitions
4	OH&S management system elements	**4**	Environmental management system requirements	**4**	Quality management system
4.1	General requirements	**4.1**	General requirements	**4.1**	General requirements
				5.5	Responsibility, authority and communication
				5.5.1	Responsibility and authority
4.2	OH&S policy	**4.2**	Environmental policy	**5.1**	Management commitment
				5.3	Quality policy
				8.5	Improvement
4.3	Planning	**4.3**	Planning	**5.4**	Planning
4.3.1	Planning for hazard identification, risk assessment and risk control	**4.3.1**	Environmental aspects	**5.2**	Customer focus
				7.2.1	Determination of requirements related to the products
				7.2.2	Review of requirements related to the product
4.3.2	Legal and other requirements	**4.3.2**	Legal and other requirements	**5.2**	Customer focus
				7.2.1	Determination of requirements related to the products
4.3.3	Objectives	**4.3.3**	Objectives and targets	**5.4.1**	Quality objectives
4.3.4	OH&S management programme(s)	**4.3.4**	Environmental management programme(s)	**5.4.2**	Quality management system planning
				8.5.1	Continual improvement
4.4	Implementation and operation	**4.4**	Implementation and operation	**7**	Product realization
				7.1	Planning of product realization
4.4.1	Structure and responsibility	**4.4.1**	Structure and responsibility	**5**	Management responsibility
				5.1	Management commitment
				5.5.1	Responsibility and authority
				5.5.2	Management representative
				6	Resource management
				6.1	Provision of resources
				6.2	Human resources
				6.2.1	General
				6.3	Infrastructure
				6.4	Work environment

4.4.2	Training, awareness and competence	**4.4.2**	Training, awareness and competence	**6.2.2**	Competence, awareness and training
4.4.3	Consultation and communication	**4.4.3**	Communication	**5.5.3**	Internal communication
				7.2.3	Customer communication
4.4.4	Documentation	**4.4.4**	Environmental management system documentation	**4.2**	Documentation requirements
				4.2.1	General
				4.2.2	Quality manual
4.4.5	Document and data control	**4.4.5**	Document control	**4.2.3**	Control of documents
4.4.6	Operational control	**4.4.6**	Operational control	**7**	Product realization
				7.1	Planning of product realization
				7.2	Customer-related processes
				7.2.1	Determination of the requirements related to the product
				7.2.2	Review of requirements related to the product
				7.3	Design and development
				7.3.1	Design and development planning
				7.3.2	Design and development inputs
				7.3.3	Design and development outputs
				7.3.4	Design and development review
				7.3.5	Design and development verification
				7.3.6	Design and development validation
				7.3.7	Control of design and development changes
				7.4	Purchasing
				7.4.1	Purchasing process
				7.4.2	Purchasing information
				7.4.3	Verification of purchased product
				7.5	Production and service provision
				7.5.1	Control production and service provision
				7.5.3	Identification and traceability
				7.5.4	Customer property
				7.5.5	Preservation of product
				7.5.2	Validation of processes for production and service provision
4.4.7	Emergency preparedness and response	**4.4.7**	Emergency preparedness and response	**8.3**	Control of nonconforming product
4.5	Checking and corrective action	**4.5**	Checking and corrective action	**8**	Measurement, analysis and improvement
4.5.1	Performance measurement and monitoring	**4.5.1**	Monitoring and measurement	**7.6**	Control of monitoring and measuring devices
				8.1	General
				8.2	Monitoring and measurement
				8.2.1	Customer satisfaction
				8.2.3	Monitoring and measurement of processes
				8.2.4	Monitoring and measurement of product
				8.4	Analysis of data
4.5.2	Accidents, incidents, non-conformances and corrective and preventive action	**4.5.2**	Non-conformance and corrective and preventive action	**8.3**	Control of nonconforming product
				8.5.2	Corrective action
				8.5.3	Preventive action
4.5.3	Records and records	**4.5.3**	Records	**4.2.4**	Control of records

	management				
4.5.4	Audit	**4.5.4**	Environmental management system audit	**8.2.2**	Internal audit
4.6	Management review	**4.6**	Management review	**5.6** **5.6.1** **5.6.2** **5.6.3**	Management review General Review input Review output
Annexes **A** and **B**	Correspondence to ISO 14001, ISO 9001	Annex **B**	Correspondence to ISO 9001	Annex **A**	Correspondence to ISO 14001
___	Bibliography	Annex **C**	Bibliography	___	Bibliography
___	*(See OHSAS 18002)*	Annex **A**	Guidance on the use of the specification	___	___

(*source:* OHSAS 18001:1999, 2002)

APPENDIX B

IMS Guide for SMEs – Table of Contents

Introduction

1 Quality systems
- 1.1 ISO 9000-series of standards
- 1.2 Quality assurance models: ISO 9001/2/3
- 1.3 Structure and contents of ISO 9001:2000
- 1.4 The future of ISO 9000: structural changes

2 Environmental management systems
- 2.1 The internal standard ISO 14001
- 2.2 1836/93 EMAS European regulation
- 2.3 Preliminary environmental analysis
- 2.4 Environmental policy
- 2.5 Policy
- 2.6 Implementation and operation
- 2.7 Checks and corrective actions
- 2.8 Management review
- 2.9 Environmental statement

3 Management systems for health and safety at work
- 3.1 Health and safety at work in Europe: the main steps
  - 3.1.1 Founding of the European Economic Community
  - 3.1.2 EC Health and Safety Programmes (1978-1995)
  - 3.1.3 The Act of the European Economic Community
  - 3.1.4 The social paper
  - 3.1.5 Current strategies of the European Commission
- 3.2 Guidelines for the implementation of an OH&SAS under BS 8800 (EN ISO 14001 approach)
  - 3.2.1 Preliminary analysis
  - 3.2.2 Health and safety at work policy
  - 3.2.3 Planning
  - 3.2.4 Implementation and action
  - 3.2.5 Control (monitoring) and corrective actions

4 Model for an Integrated Management System
- 4.1 Management responsibility
  - 4.1.1 Preliminary analysis
  - 4.1.2 IMS Policy
  - 4.1.3 IMS Objectives and programmes
  - 4.1.4 IMS organisation
  - 4.1.5 Documentation and its control
  - 4.1.6 Management review
- 4.2 System resources
  - 4.2.1 Human resources
  - 4.2.2 Information and communication
  - 4.2.3 Infrastructure
  - 4.2.4 Other resources (infrastructure, working environment)

4.3 Product realisation
4.3.1 Requirements and needs analysis
4.3.2 Design and development
4.3.3 Purchasing
4.3.4 Operations linked to production processes and services
4.3.5 Control of test equipment
4.4 Measurement, analysis and improvement
4.4.1 IMS measurement and monitoring
4.4.2 Audits
4.4.3 Non-conformity control
4.4.4 Improvement actions

(*source:* Scipioni *et al.,* 2001)

APPENDIX C

Integrated Management Systems in SME's Questionnaire

The information given will be treated with strictest confidence and anonymity

Name of Company: (optional) **Tel**. (optional)

Respondent's position: (optional) **Date**:

No of Company employees:

Please give brief details about the nature of your company's activities:

Question 1: What kind of quality management systems (QMS) does your company operate?

☐ Informal/In-house ☐ ISO 9000:2000 ☐ None

If accredited to ISO 9000:2000, what was the date of certification?

Question 2: What kind of health and safety management systems (H&SMS) does your company operate?

☐ Informal/In-house ☐ BS 8800 ☐ OHSAS 18001 ☐ None

If accredited to BS 8800 or OHSAS 18001, what was the date of certification?

Question 3: What kind of environmental management systems (EMS) does your company operate?

☐ Informal/In-house ☐ ISO 14001 ☐ EMAS ☐ None

If accredited to ISO 14001 OR EMAS, what was the date of certification?

Question 4: What is the job title of the person(s) responsible for the implementation of each management system? (please fill in those applicable to your company)

EMS

QMS

H&SMS

Question 5: What are the qualifications of the person(s) responsible for each management system? (please fill in those applicable to your company)

EMS

QMS

H&SMS

Question 6: Is your company currently operating or implementing an integrated management system (IMS)?

☐ Yes ☐ No

If Yes, please proceed to Questions 7-11

If **No**,

Why not? (please tick all that apply)

☐ Has not been considered

☐ Has been considered but no benefits perceived

☐ Economic limitations

☐ Lack of time

☐ Lack of in-house experienced staff

☐ Lack of information/guidance

Other (please specify)

Is your company aware of available guidance and support schemes, which enable small companies to implement management systems (EMS, QMS, H&SMS or IMS)?

☐ Yes ☐ No

If Yes, which one(s)?

Would your company be interested in joining a support scheme, which would enable small companies to implement integrated management systems?

☐ Yes ☐ No

What kind of elements do you think that a support scheme has to comprise in order to enable small companies to implement integrated management systems? (please tick all that apply)

☐ Economic support

☐ Training and seminar programme for the staff

☐ Step-by-step guidance

☐ On-site support with periodic review of progress

Other (please specify)

THANK YOU for taking the time to fill in this questionnaire

PLEASE SAVE the file and SEND it to t.stamou@uea.ac.uk

Please answer the following questions if your company operates an integrated management system (IMS)

Question 7: Which management systems have your company integrated?

- ☐ EMS and QMS
- ☐ QMS and H&SMS
- ☐ EMS and H&SMS
- ☐ EMS, QMS and H&SMS

Question 8: Was your company guided/supported to implement an IMS?

- ☐ Yes
- ☐ No

If **Yes**,

By whom?

- ☐ Business Link
- ☐ Norfolk County Council
- ☐ Envirowise
- ☐ Ecotech

Other (please specify)

Which support scheme was your company advised to join?

- ☐ Project Acorn
- ☐ EMS Club model
- ☐ PECT Business and Environment Management Scheme

Other (please specify)

Question 9: What kind of elements do you think that a support scheme has to comprise in order to enable small companies to implement integrated management systems? (please tick all that apply)

- ☐ Economic support
- ☐ Training and seminar programme for the staff
- ☐ Step-by-step guidance
- ☐ On-site support with periodic review of progress

Other (please specify)

Question 10: What were your company's motivations/benefits for integrating the systems? (please tick all that apply)

- ☐ Compliance with relevant legislation
- ☐ Competitive advantage
- ☐ Customer demand/supply chain pressure
- ☐ Improvement of company's image
- ☐ Cost savings
- ☐ Increase in profit margins
- ☐ Avoid duplication between procedures of systems
- ☐ Streamlining paperwork and communication
- ☐ Reduction of hazardous waste generation
- ☐ Reduction of equipment damage and product loss

Other (please specify)

Question 11: Would you say that your company obtained all the expected benefits?

☐ Yes ☐ No

If **No**,

Which benefits were not obtained? (please tick all that apply)

- ☐ Competitive advantage
- ☐ Improvement of company's image
- ☐ Cost savings
- ☐ Increase in profit margins
- ☐ Reduction of hazardous waste generation
- ☐ Reduction of equipment damage and product loss

Other (please specify)

Why do you think the expected benefits were not obtained?
(please tick all that apply)

- ☐ Incompatibilities within systems
- ☐ Lack of involvement by employees
- ☐ Lack of experienced manager

Other (please specify)

THANK YOU for taking the time to fill in this questionnaire
PLEASE SAVE the file and SEND it to **t.stamou@uea.ac.uk**