

Contrasting Institutional and Performance Accounts of Environmental Management Systems: Three Case Studies in the UK Water & Sewerage Industry*

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ABSTRACT This paper presents results from a longitudinal, qualitative study into the adoption of environmental management systems (EMS) in three companies in the UK water & sewerage industry. Based on institutional theory and the literature on EMS, four factors related to the adoption of EMS are identified: external and internal institutional forces, environmental performance issues, and economic performance issues. While previous literature has often assumed a balance of performance and institutional factors or a preponderance of performance factors, the results of this study indicate that institutional forces are the predominant drivers. The results further indicate that environmental performance issues become less important over time, whereas institutional drivers and economic performance rationales increase in importance over time. While conforming to institutional pressures can result in improved economic performance of a company, adoption of environmental management systems mostly on the basis of institutional and economic factors has wider repercussions for the state of corporate environmental management and progress towards greater ecological sustainability of business.

INTRODUCTION

Environmental sustainability is arguably one of the greatest challenges for societies in the near and long-term future. In recent years companies have come under increased pressure to improve their environmental performance (Schmidheiny, 1992; Stead and Stead, 1996). It has also been argued that good environmental performance can contribute to an overall improvement in corporate performance (Elkington, 1994; Porter and van der Linde, 1995). Environmental management systems were developed to give environmental management a 'tool' to deliver and demonstrate improved environmental performance (Garrod and Chadwick, 1996) and have become an important cornerstone for the environmental management efforts of many companies.

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Given the significance and challenge of environmental issues for management and the key role assigned to environmental management systems in many companies it is important to understand what these systems actually do for companies and their environmental performance. A number of previous studies have investigated companies' motivations for and the outcomes of the adoption of such systems, as well as the motivations for 'going green' in more general terms. This literature has provided us with much knowledge on environmental management in general and environmental management systems (EMS) in particular. However, the literature also leaves two significant gaps in our understanding of environmental management systems: (1) existing research has tended to focus on the performance related aspects of EMS and paid less attention to institutional factors; (2) it has also tended to study EMS at a single point in time, with less focus on developments over a period of time. In response to the first gap this paper draws explicitly on the institutional theory literature in the field of management innovations and sets out to establish the relative importance of different institutional and performance factors in the adoption and maintenance of environmental management systems. In response to the second gap the paper uses data from a longitudinal study to compare institutional and performance issues at two distinct periods of time, separated by five years.

Specifically, the paper aims to answer the following research questions:

- How do managers in the three case study companies construct and interpret the drivers for and benefits of adopting a (standardized) environmental management system?
- How and to what extent are institutional and performance accounts invoked to explain the adoption of environmental management systems?
- What is the relation between internal and external institutional forces, as well as between economic and environmental performance issues in the adoption of environmental management systems?
- How does this relationship between institutional and performance factors change over time?

PERFORMANCE VS. INSTITUTIONAL APPROACHES TO THE DIFFUSION OF MANAGEMENT INNOVATIONS

The theoretical framework of this paper is based on a contrast between performance and institutional motivations in the adoption of innovative management techniques, of which environmental management systems are an example. The performance oriented view of management innovation diffusion assumes that innovations are adopted or rejected for reasons of technological efficiency, leading to better financial performance (O'Neill et al., 1998). This view assumes that (1) organizations within a group can freely and independently choose which innovations to adopt, and (2) that organizations are fairly certain about their goals and their assessment of the adequacy of different technologies to achieve these goals (Abrahamson, 1991).

The institutional view of management innovation diffusion argues that often neither of the above assumptions is warranted and, under conditions of uncertainty, innovation diffusion frequently arises because organizations imitate other organizations (Abraham-

son, 1991). Management innovations are seen as fashions, i.e. transitory beliefs that certain management techniques are at the forefront of management progress (Abrahamson, 1996). If adopted by a sufficient number of firms they can create bandwagon effects, where organizations adopt the management innovations out of fear of appearing different from their peers, even if they expect no or negative efficiency effects from this adoption (Abrahamson and Rosenknopf, 1993). Managers are not necessarily passive recipients of management fashions. Recent research suggests an interactive relationship between those who 'invent' management fashions and managers in which both groups produce and use new management ideas, and influence the nature and direction of their relationship (Benders and van Veen, 2001; Clark and Greatbatch, 2002; Clark, 2004a). Giroux (2006) argues that the diffusion of management fashions is aided by 'pragmatic ambiguity', i.e. an equivocality of concepts which allows for different courses of action while maintaining a semblance of unity between different actors.

This view of management innovations is based on Meyer and Rowan's (1977) variant of neo-institutional theory where organizational stakeholders expect managers to manage organizations rationally, i.e. by the most efficient means to achieve important ends, but where in many contexts both goals and appropriate means are ambiguous. In these circumstances managers must maintain organizational legitimacy by creating the appearance of conforming to norms of rationality and achieving isomorphism with institutionalized environments. Organizations seek legitimacy and support by incorporating structures and procedures that match widely accepted cultural models embodying common beliefs and knowledge systems. This institutionalization can occur by mimetic, coercive or normative processes (DiMaggio and Powell, 1983; Zucker, 1987). Coercive isomorphism is driven by pressures from other organizations on which a focal organization is dependent and by pressures to conform to cultural expectations of the larger society. Mimetic isomorphism is a response to uncertainty – in situations where a clear course of action is unavailable managers may decide that it is best to mimic a peer who is perceived to be successful. Normative isomorphism is a result of professionalization, where members of professions receive similar training and interact through professional bodies. Although the management fashion literature tends to stress mimetic isomorphism, all three types of isomorphic forces may potentially contribute to the diffusion of management innovations. Mimetic adoption of environmental management standards, for instance, is likely to be driven by uncertainty about how to tackle perceived environmental problems and a corresponding wish to emulate an established and thereby hopefully effective system. Management fashion setters, such as gurus or consultants often play an important role in spreading particular innovations in this way (Abrahamson and Fairchild, 1999). Coercive forces for the diffusion of environmental management systems might be customers who will only buy from suppliers accredited to ISO 14001 or a similar standard, or regulators who expect such accreditation as part of the regulatory regime. The training of environmental or technical managers may also instil a bias towards using a standardized system and provide a normative isomorphic force for their adoption.

Several empirical studies lend support to institutional explanations for the adoption of management innovations. Staw and Epstein (2000) found that companies associated with popular management techniques did not have higher economic performance but were

nonetheless more admired, perceived to be more innovative and rated higher in management quality. Their CEOs also commanded higher pay. Thus both internal and external legitimacy could be gained by using popular management techniques. Müller and Carter (2005), tracing the development of total quality management (TQM) at the organizational level, identified a number of scripts or narratives that organizational members used when talking about the innovation, such as exhortation, mimetic learning, structuring, contesting, routinizing, and disbanding. Different institutional influences were found to play a role over the life-time of TQM adoption and use.

However, not all management innovations follow the same diffusion patterns. According to O'Neill et al. (1998) diffusion patterns are influenced by the organizational environment, the characteristics of the adopting organization, and the characteristics of the innovation itself. Thus, higher environmental uncertainty is linked to higher adoption rates of innovations. It has also been found that management fashions exhibit different characteristics during the various phases of their life-cycles. For instance, the discourse associated with a management innovations has been found to change over time (Abrahamson and Fairchild, 1999; Zbaracki, 1998) and search for legitimacy through the adoption of a standard model of TQM was found to be more dominant in later adopters (Westphal et al., 1997).

The management fashion literature itself has not remained without critics. Clark (2004b) argues that this literature in general suffers from an over-reliance on citation analysis and too much focus on the dissemination rather than the creation, selection and processing phases (Abrahamson, 1996) of the fashion cycle. By providing an analysis of managerial interpretations of environmental management systems, the present paper actually contributes to an addressing of the first of these criticisms. In doing so it does, however, inevitably focus on the dissemination phase, although a short discussion of development of EMS from quality management systems is included in the final sections of the paper.

PERFORMANCE AND INSTITUTIONAL ISSUES IN ENVIRONMENTAL MANAGEMENT SYSTEMS AND STANDARDS

Environmental management systems (EMS) are an example of an innovative management technique that has received increasing attention in practice and scholarship. EMS are intended as a problem identification and solving tool, providing a method for the systematic management of environmental activities, products and services and achievement of environmental obligations and performance goals (http://europa.eu.int/comm/environment/emas/index_en.htm). There are several recognized environmental management standards. The first of these was the British standard BS 7750, modelled on the British quality standard BS 5750. BS 7750 was later subsumed into international environmental management standard ISO 14001, which replaced BS 7750 in due course and which, in turn, shows parallels with the international quality standard, ISO 9000 (Delmas, 2002; Melnyk et al., 2003). Unlike ISO 14001, the European Environmental Management and Audit Standard (EMAS) contains a compulsory element of independent auditing. Registrations to ISO 14001 have been rising slowly since the development of the standard, with 66,070 registrations worldwide in December 2003, an increase of

16,621 over December 2002. Uptake was highest in Japan, followed by the UK, China, Spain, and Germany (<http://www.iso.org/iso/en/commcentre/pressreleases/2005/Ref967.html>).

Different motivations for and perceived benefits of the introduction of EMS have been identified in the literature. These are summarized in Table I. The classifications of motivations offered by different authors vary, some suggesting two or three overarching categories and others merely listing a number of discrete motivations and perceived benefits. Combining the different classifications we can discern two broad categories: (1) institutional motivations (Bansal and Bogner, 2002; Bansal and Roth, 2000; Delmas, 2002; González-Benito and González-Benito, 2005); and (2) performance motivations, which can be further divided into economic/competitive motivations (Bansal and Bogner, 2002; Bansal and Roth, 2000; González-Benito and González-Benito, 2005; Melnyk et al., 2003), and ethical/environmental motivations (Bansal and Roth, 2000; González-Benito and González-Benito, 2005; Melnyk et al., 2003). Institutional and performance factors seem to hold a rough balance in the literature as represented in Table I, but there seems to be a certain prevalence of economic over environmental performance issues.

The conceptual framework for this study is graphically represented in Figure 1. Like the institutional literature on management innovations, it distinguishes broadly between performance and institutional motivations. Following Zucker's (1987) distinction between the 'environment as institution' and the 'organization as institution', institutional motivations are further divided into those relating to *internal legitimacy*, i.e. maintaining internal support for environmental management and contributing to the internal well-being of the company, including improved employee morale (Bansal and Bogner, 2002; Bansal and Roth, 2000; Welford and Gouldson, 1993) and those relating to *external legitimacy*, i.e. maintaining the good will of external stakeholders, including customers, by demonstrating environmental commitment and expertise and conforming to generally accepted standards of environmental management (Bansal and Bogner, 2002; Bansal and Roth, 2000; Delmas, 2001; González-Benito and González-Benito, 2005; Melnyk et al., 2003; Quazi et al., 2001; Welford and Gouldson, 1993). This further classification helps to categorize what can otherwise appear to be a very long list of potential institutional factors, although it is not necessarily assumed that internal and external institutional factors would be in conflict with each other.

Performance motivations are subdivided into *economic performance* (Bansal and Bogner, 2002; Bansal and Roth, 2000; González-Benito and González-Benito, 2005) and *environmental performance* (Bansal and Roth, 2000; González-Benito and González-Benito, 2005). Economic performance gains from EMS adoption can either stem from improved operational performance, e.g. through waste reduction (Bansal and Bogner, 2002; Bansal and Roth, 2000; González-Benito and González-Benito, 2005; Melnyk et al., 2003; Quazi et al., 2001), or from increased legitimacy with stakeholders (Bansal and Bogner, 2002; Bansal and Roth, 2000; Delmas, 2001; González-Benito and González-Benito, 2005; Melnyk et al., 2003). In the latter case, the question arises whether one ought to classify such effects as institutional or economic performance issues. This is discussed further below. In terms of environmental performance, a distinction is made between environmental benefits in terms of *management inputs*, such as better documentation,

Table I. Motivations for adoption of EMS – literature review

<i>Publication</i>	<i>Institutional factors</i>	<i>Performance factors</i>	<i>Economic</i>	<i>Environmental</i>
Welford and Gouldson (1993)	<ul style="list-style-type: none"> – Marketing and improved customer satisfaction – Proof of environmental quality and expertise to stakeholders – Training aid – Indication of responsibilities – Improved company morale 			<ul style="list-style-type: none"> – Avoidance of environmental risks and accidents
Bansal and Roth (2000) – motivations for ‘going green’	<ul style="list-style-type: none"> – Legislation – Local community – Environmental advocates – Employees 		<ul style="list-style-type: none"> – Process intensification, lower cost, better resources and capabilities – Market share, differentiation, share price 	<ul style="list-style-type: none"> – Environmentally beneficial actions without immediate economic benefit to firm
Quazi et al. (2001)	<ul style="list-style-type: none"> – Environmental regulation – Environment related trade barriers – Top management concern – Head office practices – Employee welfare 		<ul style="list-style-type: none"> – Customer expectations – Cost savings – Competitive advantage (pre-empting competitors’ moves) 	
Bansal and Bogner (2002)	<ul style="list-style-type: none"> – Local community – Customers – Governments – Interest groups – Employees 		<ul style="list-style-type: none"> – Organizational efficiencies – Satisfying customer requirements 	

Table I. *Continued*

<i>Publication</i>	<i>Institutional factors</i>	<i>Performance factors</i>	
		<i>Economic</i>	<i>Environmental</i>
Evangelinos and Halkos (2002)	<ul style="list-style-type: none">– Positive management perception	<ul style="list-style-type: none">– Opportunities from environmental activities	<ul style="list-style-type: none">– Pressures to improve environmental performance– Sensitive environmental conditions
Delmas (2001; 2002)	<ul style="list-style-type: none">– Institutional environments affect rate of ISO 14001 adoption	<ul style="list-style-type: none">– Improved competitiveness through stakeholder involvement	
Melnyk et al. (2003)	<ul style="list-style-type: none">– Enhanced reputation	<ul style="list-style-type: none">– Reduction of costs, lead times, waste– Improved product quality– Enhanced market position	<ul style="list-style-type: none">– Product and process redesign– Resource and waste reduction and recycling– Eco-friendlier products– Spread of environmental risk
González-Benito and González-Benito (2005)	<ul style="list-style-type: none">– Gain confidence of institutions and social groups around company– Influence stakeholders and public policy makers to gain competitive advantage	<ul style="list-style-type: none">– Increased productivity and reduced cost– Increased sales and improved market position	<ul style="list-style-type: none">– True ecological awareness– Desire to improve environmental performance

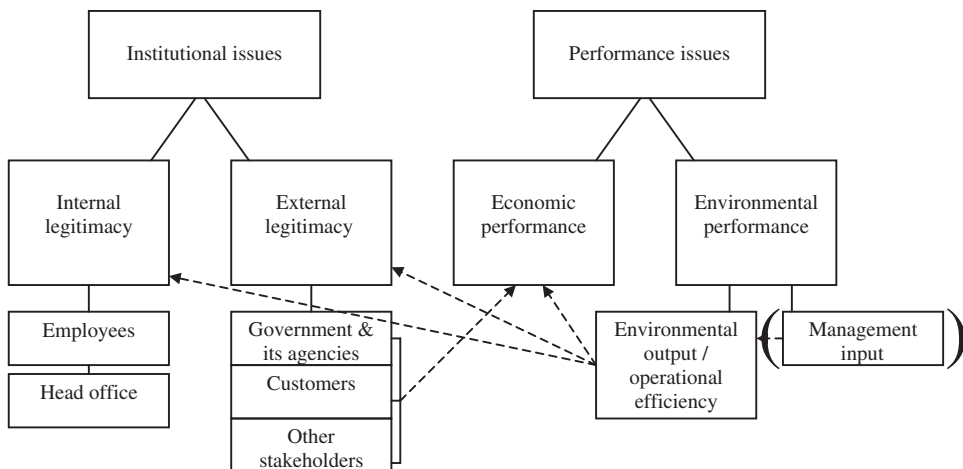


Figure 1. Theoretical framework of performance and institutional issues in the adoption of environmental management systems

Note: Discontinuous arrows denote an influence of one type of factor (e.g. environmental performance) on another type of factor (e.g. internal legitimacy).

enhanced safety procedures (Morrow and Rondinelli, 2002), increased management and employee environmental awareness, and waste reduction and recycling efforts of employees (Rondinelli and Vastag, 2000) and benefits in terms of *environmental outputs*, such as actual reductions in resource use, waste and pollution. While the assumption behind EMS and other environmental management measures is that increased management input will lead to improved environmental output there is little hard evidence that EMS in themselves lead to an improvement in actual environmental performance (Freimann and Walther, 2001; Hertin et al., 2004). In the analysis we define environmental performance in terms of environmental outputs, i.e. reductions in resource use, waste and pollution.

The theoretical framework takes into account the potential difficulties in separating institutional and performance factors strictly, as attempted by some of the institutional literature. Staw and Epstein (2000) argue that it is often conceptually difficult to separate actions based on shared, taken-for-granted assumptions from those based on more familiar cognitive shortcuts and that there is no reason to assume that a course of action pursued for legitimacy ends will necessarily have negative consequences for performance. Actions prompted mostly by institutional factors may, nonetheless, have an impact on performance issues, and changes in performance as a consequence of adopting a management innovation may have an impact on the organization's internal or external legitimacy. In Figure 1 such influences of one factor on another are represented by discontinuous arrows. The first such assumed influence is from environmental management inputs (not truly considered an environmental performance benefit here, hence placed in brackets) to improved environmental outputs/efficiency. Improved environmental outputs and efficiency are assumed to have an impact on institutional drivers as they are likely to improve the organization's legitimacy with key stakeholders. Through improved efficiency, improvements in environmental performance may also have a positive impact on economic performance. The difficulty of separating institutional and

performance issues is most obvious in relation to commercial pressures for the adoption of (certified) environmental management systems. Adopting a management innovation because of customers' expectations will have a positive effect on the company's economic performance and might therefore be seen as an economic performance factor. However, if customers expect a supplier to adopt an environmental management system, even though there is no clear evidence that such a system leads to a reduction in environmental impacts, it would seem that the whole organizational field uses such systems as legitimacy rather than (environmental) performance enhancers. Customer pressure is therefore discussed as an external institutional factor but this is linked to potentially improved economic performance.

METHODOLOGY

The research approach for this study was qualitative and interpretive in nature, consisting of three longitudinal case studies in the UK water & sewerage industry, using in-depth interviews. The in-depth, qualitative approach was chosen as it allowed the collection of data of sufficient richness to capture complex motivations against a fairly detailed company and industry background. Interviews allowed the collection of relatively rich data with a reasonable time commitment from the researcher and without undue interference with the normal processes of the case study companies. A small number of case studies gave the opportunity to speak to several respondents in different hierarchical and functional positions within each company, thus giving a much richer picture than interviews with fewer respondents in a larger number of companies would allow. Choosing companies from the same industry allowed for meaningful comparisons between them. The three companies were chosen to represent variety according to a number of *prima-facie* characteristics, such as ownership (two UK owned, one part of a large foreign group), nature of the geographical terrain and population, and other business interests besides water & sewerage. This variety was considered potentially influential, not just for the adoption of EMS, but for other issues related to a wider study into environmental strategy and management in the water industry, of which this paper forms part. Availability of access to the companies played an important part in the final choice of the case companies.

The research took place in two phases: the first phase in 1996/97, comprising interviews with 30 respondents all together; and the second phase in 2001/02, consisting of interviews with 17 respondents in total, seven of whom had also been interviewed in the first phase. The interviews followed a semi-structured schedule and lasted between 45 minutes and two hours. They were mostly tape-recorded and transcribed. Where this was not possible, due to respondents' unease with being tape recorded or technical difficulties such as background noise, extensive notes were taken during and immediately after the interview and written up within three days. It was agreed between the researcher and the respondents that the identities of the companies and individual respondents would not be revealed. Companies are therefore referred to by pseudonyms and respondents by their role in the organization. Further details about the companies studied and the respondents are provided in Table II.

Table II. Case study companies and respondents

<i>Company</i>	<i>Water Co.</i>	<i>Hydro Co.</i>	<i>Aqua Co.</i>
No. of interviews at Stage 1	8	7	12
Respondents at Stage 1	<ol style="list-style-type: none"> 1. Environmental Director, Water Division, responsible for overall environmental strategy for this division, initiated EMS 2. Environmental Management Systems Manager, Water Division, responsible for the implementation of EMS 3. Conservation Manager, Water Division (= #9 below), closely involved not only with wildlife conservation but all environmental issues in company 4. Regional Production Manager, Water Division, reporting on environment effects through EMS 5. Technical Support Officer, Sewerage, reporting on environmental effects through EMS 6. Regional Estates Manager, Water Division, responsible for environmental management in that region 7. Technical Controls Manager, Waste Division, responsible for environmental management in that division 8. Director, Environmental Consultancy Division, consulted on major environmental management decisions throughout company 	<ol style="list-style-type: none"> 1. Environmental Director, Water Division (= #8 below), responsible for environmental strategy for the entire division, part of top management team 2. Environmental Manager, Water Division, day-to-day responsibility for environmental management in this division 3. Environmental Co-ordinator, Water Division (= #9 below), part of central environmental team in this division, closely involved with designing environmental management tools 4. Area Sewage Treatment Management, Water Division (= #12 below), responsible for environmental management in that area, reporting on environmental effects 5. Regional Sales Manager, Water Division, involved with environmental issues concerning customers 6. Facilities Manager, Water Division, closely involved with environmental management of company sites 7. Water Supply and Conservation Officer, Water Division, responsible for co-ordinating wildlife conservation efforts across company, interest in all environmental management issues 	<ol style="list-style-type: none"> 1. Group Technical Director, environmental champion in top management team 2. Group Health, Safety & Environment Manager, devolved responsibility for environmental strategy and management across group 3. Group Environmental Advisor, working closely with (2), environmental management expert for the group 4. Environment Manager, Utilities Division (= #15 below), responsible for implementing environmental management in division, environmental expert and champion for that division 5. Waste Compliance Officer, Utilities Division (= #18 below), responsible for waste management from a compliance perspective 6. Conservation, Access & Recreation Manager, Utilities Division (= #17 below), responsible for wildlife conservation efforts across company, strong interest in environmental management issues in general 7. Waste Water General Manager, Utilities Division, responsible for environmental management in that aspect of company

Table II. *Continued*

<i>Company</i>	<i>Water Co.</i>	<i>Hydro Co.</i>	<i>Aqua Co.</i>
			<div>8. Waste Management Officer, Utilities Division, responsible for environmental management in that area</div> <div>9. Water Supply Manager, Utilities Division, responsible for environmental issues in water supply</div> <div>10. Business Quality Manager Electricity, Utilities Division, involved in developing EMS for this part of company</div> <div>11. Standards Officer, Energy & Telecoms Division, involved in developing EMS for this part of company</div> <div>12. Energy Services Manager, Energy and Telecoms Division, involved in customer advice and energy savings programmes</div> <div>13. Procurement Services Manager, Services Division, involved in developing EMS for this division</div>
No. of interviews at Stage 2	5	7	6
Respondents at Stage 2	<div>9. Environment Manager (= #3 above), responsible for development of environmental policy and EMS for entire company</div> <div>10. Environmental Communications Manager, responsible for internal and external environmental communications programmes, working closely with #9</div>	<div>8. Environment Director, Water Division (= #1 above), responsible for environmental strategy for the entire division, part of top management team</div> <div>9. Environmental Co-ordinator, Water Division (= #3 above), part of central environmental team in this division, closely involved with designing environmental management tools</div>	<div>14. Group Strategic Planning Director, responsibilities include high level environmental strategy</div> <div>15. Environmental Manager, Utilities Division (= #4 above), responsible for implementing environmental management in division, environmental expert and champion for that division as well as, informally, for entire company</div>

Type of EMS implemented	11. Asset Manager, responsible for asset design and maintenance, including environmental issues	10. Water Supply Director, Water Division, responsible for entire water supply operation, including related environmental issues	16. Member of Environment Team, Utilities Division, responsible for environmental policy for electricity operations
	12. R&D Manager, involved in developing assets, including environmental aspects	11. Environment Director, Waste Division, responsible for environmental strategy for that division	17. Conservation, Access & Recreation Manager (= #6 above), responsible for wildlife conservation efforts across company, strong interest in environmental management issues in general
	13. Regional Environmental Co-ordinator, responsible for co-ordinating environmental efforts in one region	12. Area Sewage Manager, Water Division (= #4 above), responsible for running of sewage operation in one of three areas, including all related environmental aspects	18. Environmental Compliance Manager, Utilities Division (= #5 above), responsible for environmental management from a compliance perspective
		13. Conservation, Access and Recreation Advisor, Water Division, responsible for managing wildlife conservation effort across company, involved in other aspects of environmental management	19. Environmental Policy Co-ordinator, Services Division, responsible for initiating and coordinating environmental policy in that division
Main activities		Initially internal environmental management system based on BS 7750, later aiming for ISO 14001 for overall management system for sewerage; several ISO 9000 registrations for water supply; several ISO 9000 and ISO 14001 and one EMAS registration for waste management sites	Initially internal environmental management system based on BS 7750; later aiming for ISO 14001 for all major sewerage sites but effort not continued
Ownership	Water & sewerage Part of global utilities company	Water & sewerage; waste management Independent UK company	Multi-utility, including water & sewerage Independent UK company

The data analysis followed an iterative process where some a-priori theorization took place which found its way into the questions asked and some preliminary categories of analysis. These categories were then refined using the interpretation arising from the interviews. Paralleling Eisenhardt's (1989) suggestions of a process which leads from within-case analysis to between-case analysis, the analysis moved in three steps from the level of individual interviews to the organizational level and finally to the conceptual level. In parallel the focus of the analysis moved from personal views to shared organizational positions to a teasing out of generalizable concepts. Tabular displays and mind-maps (Miles and Huberman, 1994; Senge et al., 1994) were the graphical devices used as the basis for constructing the themes at conceptual level.

BACKGROUND TO THE UK WATER & SEWERAGE INDUSTRY

Water & sewerage is an industry with significant direct and indirect environmental impacts, including effluent discharge, the disposal of sewage sludge, resource use for the pumping and treatment of drinking water and waste water, construction activities and bio-diversity (due to their significant land holdings, often in environmentally valuable or sensitive areas). There is also a significant public health function in the provision of wholesome drinking water. The industry is subject to considerable environmental legislation and a complex regulatory field. This includes the economic regulator, OFWAT (the Office of Water Regulation); the main environmental regulator, the Environment Agency; and a drinking water regulator, the Drinking Water Inspectorate (Maloney, 2001).

The industry, previously in public ownership, was privatized in 1989. One of the express aims of privatization was to enable the industry to raise the necessary capital to bring their assets up to standards demanded by European environmental legislation. Previously, the UK water industry had frequently failed to comply with European environmental legislation (one of the reasons why Britain was at times labelled the 'dirty man of Europe') and significant investment into an ageing infrastructure was needed to make compliance possible. However, the resulting price increases were highly unpopular with consumers and contributed to increased public hostility towards privatization. Therefore the newly formed private water and sewerage companies found themselves exposed to much, frequently hostile media interest and public scrutiny. Privatization of the UK water industry is discussed in more detail in Ogden and Anderson (1995), Parker (1997), Ogden and Watson (1999), Maloney (2001), and Bakker (2003).

Due to the specific nature of the assets and processes involved, introduction of full competition was considered to be difficult and the companies retained what is essentially a regional monopoly after privatization (Bakker, 2003). This monopoly continues for domestic (household) customers but some competition has been introduced for large commercial and industrial customers. To safeguard consumer interests, the economic regulator, OFWAT, agrees prices with the individual companies in a five-yearly price review (Ogden and Anderson, 1995; Parker, 1997). In the second phase of this research a new price review had recently come into force, which limited price increases and demanded considerable efficiency savings from the companies.

The non-competitive and highly regulated nature of their core water & sewerage business (for domestic users) makes expansion in this market difficult for companies. Most have therefore sought to expand into other, non-regulated markets, either by investing in related industries in the UK, such as waste management or electricity distribution, or through expansion in international markets, bidding for contracts to run water and sewerage operations overseas. There has also been a lot of takeover activity and several companies have been bought up by large foreign firms.

PERFORMANCE AND LEGITIMACY IN MANAGERS' ACCOUNTS OF ENVIRONMENTAL MANAGEMENT SYSTEMS

We shall now see how respondents in the three case study companies related environmental management systems and standards to performance and institutional issues. In line with the conditions for access, the companies are referred to by pseudonyms. The findings are summarized in Table III, which gives an overview of the type of EMS in place and then summarizes performance and institutional issues related to the adoption of EMS for each of the companies at the two research stages. In line with the theoretical framework developed above, performance issues have been divided into environmental and economic performance. We also distinguish between external and internal legitimacy. Where economic performance was thought to be influenced mostly through customer (or other stakeholder) demand, this has been classified as an institutional issue, but with reference made in the economic performance category. The entries in the table reflect respondents' way of stating these issues.

ENVIRONMENTAL MANAGEMENT SYSTEMS AND PERFORMANCE

Economic Performance

In the first phase of the research none of the respondents made a clear link between EMS and improved economic performance. In the regulated water business the lack of a competitive market was seen as the main reason why no commercial case for an EMS could be made. Although respondents felt that the customer demand was not currently there, they also thought that this was the avenue by which an economic benefit could be expected. No-one suggested that an EMS contributed to economic performance through cost savings.

In the second phase the picture had changed to some extent in all three companies. Several respondents in Water Co. and Hydro Co. argued that there was now an economic benefit from having a certified EMS as large customers increasingly demanded it and it was necessary when bidding for competitive contracts. This applied to large UK contracts, which were by then open to competition, as well as to international contracts, which were increasingly an important strategic target for the companies. According to some respondents in Aqua Co. the commercial case for introducing a certified EMS was less clearly recognized in their company. They argued that they themselves saw the potential but that the company as a whole had not yet realized it and was hence not devoting resources to the development and certification of EMS. Again, improved

Table III. Institutional and performance issues related to the adoption of EMS in the case companies

<i>Water Co.</i>		<i>1996/97</i>	<i>2001</i>
Type of EMS adopted		<ul style="list-style-type: none"> – Piloted BS 7750 [Resp. 1&2] – 2 operational regions certified to BS 7750 [Resp. 2] – Roll-out of BS 7550 certification to all regions intended [Resp. 2] 	<ul style="list-style-type: none"> – Waste water side all certified to ISO 14001 (by operational region) [Resp. 9&10] – Piloting sustainability management system [Resp. 10]
Performance issues	Environmental performance	<ul style="list-style-type: none"> – Helps to tighten up procedures and avoid incidents [Resp. 1] – External assessor of certified system imposes greater discipline [Resp. 2] – Focus on compliance issues [Resp. 1] – Company takes narrow view of environmental effects – EMS does not discourage this [Resp. 1] 	<ul style="list-style-type: none"> – EMS does not drive environmental commitment of company as before [Resp. 9] – Not used to drive wider environmental concerns [Resp. 9] – Benefits not clear at this stage [Resp. 9] – Too much a system apart – would be desirable to merge with general management system [Resp. 9]
	Economic performance	<ul style="list-style-type: none"> – Commercial benefit of certification not clear at this stage [Resp. 7] 	<ul style="list-style-type: none"> – Via legitimacy – required by some clients when bidding for contracts
Institutional issues	Internal institutional issues/internal legitimacy	<ul style="list-style-type: none"> – Early achievable goal for environmental management effort [Resp. 1] – Demonstrates company's achievement internally [Resp. 4&5] – Good for staff motivation [Resp. 2] – Importance of champions, particularly quality manager [Resp. 1] 	<ul style="list-style-type: none"> – Two earlier champions, particularly quality director, no longer with company – no clear driver for EMS [Resp. 9&10]
	External institutional issues/external legitimacy	<ul style="list-style-type: none"> – Demonstrates company's achievement externally [Resp. 2] – Helps to ensure legal compliance [Resp. 1] – Accreditation has PR value [Resp. 1] – May improve standing with Environment Agency [Resp. 1] – Desire to be industry leader in this respect [Resp. 1&4] 	<ul style="list-style-type: none"> – Increasingly necessary when bidding for contracts [Resp. 9&10]
<i>Hydro Co.</i>		<i>1996/97</i>	<i>2001</i>
Type of EMS adopted		<ul style="list-style-type: none"> – In-house system, following BS 7750 template (water business) [Resp. 1,2&3] – Site level EMS for waste business being developed [Resp. 2] 	<ul style="list-style-type: none"> – In process of developing cert. EMS (ISO 14001) at general management level for water business [Resp. 8,9&10] – Several ISO 14001 certifications at site level for waste business [Resp. 11] – Site level certification for water business considered too burdensome

Table III. *Continued*

<i>Hydro Co.</i>		<i>1996/97</i>	<i>2001</i>
Performance issues	Environmental performance	<ul style="list-style-type: none"> – ‘Improvement’ in BS 7750 refers to system, not environmental performance – assumed latter will follow from former but not certain [Resp. 2] 	<ul style="list-style-type: none"> – Benefits of formalized EMS in risk minimization [Resp. 10] – EMS will not improve environmental performance if culture is not environmental [Resp. 13] – Possible to get ISO 14001 with little actual environmental improvement [Resp. 13]
	Economic performance	<ul style="list-style-type: none"> – Commercial benefit of certified EMS not clear due to monopoly markets [Resp. 2&3] – May become greater with greater competition in future [Resp. 3] – Burden of too much bureaucracy [Resp. 1,2&3] 	<ul style="list-style-type: none"> – Via customer demand (both water and waste business) [Resp. 8,10&11]
Institutional issues	Internal institutional issues/internal legitimacy	<ul style="list-style-type: none"> – CEO unconvinced of merits of certified system – seen as too bureaucratic [Resp. 3] – Some uncertainty about best way to formalize environmental management [Resp. 2,3&4] 	<ul style="list-style-type: none"> – More favourable attitude to certified EMS due to less anti-bureaucratic company culture [Resp. 10]
	External institutional issues/internal legitimacy	<ul style="list-style-type: none"> – Heightened interest in environmental management in general related to positive external recognition of company’s environmental reputation [Resp. 1&2] – Comparison with other companies in industry; seen as the ‘right thing to do’ [Resp. 1&2] 	<ul style="list-style-type: none"> – Customers (in competitive markets) increasingly expect ISO 14001 certification [Resp. 8,10&11] – Company expects cert. EMS from contractors – needs to set good example [Resp. 10] – For water supply, ISO 14001 certification would be purely for external image [Resp. 10] – Certified EMS does not lead to less stringent regulation [Resp. 8&9]
<i>Aqua Co.</i>		<i>1996/97</i>	<i>2001</i>
Type of EMS adopted		<ul style="list-style-type: none"> – Internal system on BS 7750 template being developed [Resp. 2,3&10] – Start on developing EMS in one division, before merger with rest of company, then beginning to be rolled out to entire company [Resp. 3] – No accreditation sought at that time [Resp. 2] 	<ul style="list-style-type: none"> – Decision to aim for ISO 14001 certification at site level on waste water side – abandoned due to cost pressures [Resp. 15] – Internal EMS continues to be pursued in parts of company [Resp. 15&19]

Table III. *Continued*

<i>Aqua Co.</i>		<i>1996/97</i>	<i>2001</i>
Performance issues	Environmental performance	<ul style="list-style-type: none"> – Formalized EMS makes environmental management less dependent on individuals [Resp. 2] – Processes are being locked in [Resp. 2] – Expectation that environmental performance will be improved [Resp. 2&3] – Seeking accreditation might encourage company to set sights too low [Resp. 4] 	<ul style="list-style-type: none"> – Accredited EMS would have improved environmental performance by changing people's attitudes [Resp. 18] – Site level EMS would be more rigorous than general management level, as planned by Hydro Co. [Resp. 15]
	Economic performance	[not mentioned by respondents]	<ul style="list-style-type: none"> – Commercial benefit of certified EMS (via customer and stakeholder interest) not generally seen in company [Resp. 15&18]
Institutional issues	Internal institutional issues/internal legitimacy	<ul style="list-style-type: none"> – Uncertainty about best way to progress environmental management [Resp. 1,2,11,12&13] – Good fit with general company culture of (then independent) division that started development as familiar with management systems approach [Resp. 10&11] 	<ul style="list-style-type: none"> – Abandonment of certification process at site level shows that environment is not top priority for top management [Resp. 15&18]
	External institutional issues/external legitimacy	<ul style="list-style-type: none"> – Shareholder concern gave impetus for EMS in (then independent) division that started development [Resp. 3] – Other external stakeholders also expressed interest [Resp. 3] – EMS (and other environmental management tools) are pushed by consultants [Resp. 9] – Becoming standard practice in industry [Resp. 2] 	<ul style="list-style-type: none"> – Accredited EMS at site level would have improved company ranking on external environmental indices [Resp. 15&18] – Cost pressure imposed by latest regulatory price review hinders development of formalized and certified EMS throughout company [Resp. 15,17&18]

Notes:

1. Although no direct quotes are given in this table, the wording reflects the wording used by the respondents.

2. Figures in square brackets refer to respondent no. in Table II.

economic performance was seen to come from customer demand, not through cost savings.

Environmental Performance

In the theoretical framework we distinguished between environmental performance relating to environmental outputs, such as pollution, resource use, wildlife conservation, etc and environmental performance relating to managerial inputs, such as processes and procedures designed to improve environmental outputs. In the interviews, respondents made a further distinction between environmental performance as compliance with

environmental regulation, relating to issues such as effluent discharge, sewage disposal, water abstraction, etc, and environmental performance relating to wider, non-regulated environmental issues, such as biodiversity, energy usage, etc.

During the first stage of the research in 1996/97 respondents often talked about but expressed mixed opinions towards the potential environmental performance benefits of EMS. Those who saw environmental benefits related them to managerial inputs, in terms of tightening up procedures and increasing environmental awareness, leading to improved environmental outputs by minimizing the risk of environmental incidents and improving regulatory compliance. But even these respondents were often sceptical about improved performance with respect to wider environmental issues. The following quote illustrates this:

I tell you the reason why they like it so much. Because on sewage treatment, for instance, they have turned the ISO 14000 into an iron procedure. '... these are the procedures you apply, these are the actions you take if anything goes wrong'. It's like a sort of Stalinism taking over, feels a bit like that. Iron procedure, which means that the supervisors and the area manager can sleep at night. Because he knows that virtually everything has been covered in the operational procedures. It works like a well oiled machine, and that's the psychological benefit. Nothing to do with the wider register of environmental effects, holistic [approaches], no such stuff. 'It helps me to deliver, keeps me out of trouble with my bosses, and the courts, and the Environment Agency'. [Environmental Director, Water Co. (Resp. 1) 1996/96]

Environmental performance benefits were perceived to accrue from the implementation of an environmental management system per se, not its accreditation to a standard, although one respondent at Water Co. thought that the external assessment of procedures involved in accreditation added a useful discipline to the process. On the other hand, a respondent at Aqua Co. suggested that accreditation at an early stage might even be detrimental to wider environmental performance:

But we certainly don't feel that [accreditation] has much to add. In fact it could take something away at the moment, because it constrains you to act in a more formal way, and there is all the time the requirement to produce documentation and satisfy the external assessors, and so on. Whilst really that will give you a tight system I think it could also be a limited system, where there is a tendency to perhaps set your sights rather lower than you might do with a less formal system. [Environmental Manager, Utilities Division, Aqua Co. (Resp. 4), 1996/97]

In the second phase of the research, less was said in general about the link between EMS and environmental performance, while a stronger link was made with economic performance. At Water Co. there were continued concerns that EMS was not driving wider environmental concerns:

At the moment it doesn't drive anything at all. . . . You just get a system, on the operations side you get a system whereby you have to look at something and you look

at the little things that are going wrong. And you just address them but they are actually, they are just still operation type things, they just happen to be a wee deal in the environment. [Environment Manager, Water Co. (Resp. 9), 2001]

Other respondents similarly argued that an EMS would not achieve much – even in terms of reducing pollution incidents – without an embedded environmental culture, that the bureaucratic burden of the system might even ‘detract from people doing the right thing’. [Conservation Manager, Hydro Co. (Resp. 13), 2001]

ENVIRONMENTAL MANAGEMENT SYSTEMS AND LEGITIMACY

External Legitimacy

Institutional aspects of the adoption of EMS were mentioned throughout both research phases, becoming somewhat more prominent in the second phase. It was argued that accreditation to an environmental management standard, in particular, was prompted by external considerations and gained the company legitimacy with various stakeholders.

In 1996/97 respondents at Water Co. argued that an EMS helped to demonstrate the company’s achievements externally:

It underlines to everybody where we are at in terms of environmental management. [Production Manager, Water Co. (Resp. 4), 1996/97]

Accreditation was seen to provide some additional benefits:

Bit of PR. Public demonstration that we’ve got one, we’ve got an internationally recognized, accepted standard, we’re among the very best. Bit of security against the [Environment Agency]. In the long term it may actually cause the EA to monitor less. [Environment Director, Water Co. (Resp. 1), 1996/97]

In Aqua Co. the first attempts to introduce an environmental management system had been made in a division that had been an independent company before. It was claimed that attempts to make environmental management more formal and systematic were prompted by institutional shareholders:

It was entirely driven by the large institutional shareholders. Every year the chairman used to go round the institutional shareholders . . . and when he went around in summer 1994 . . . they started asking [detailed] questions [which he] could not deal with . . . and [he] decided that the environment was important, because that is what big shareholders wanted. [Group Environmental Advisor, Aqua Co. (Resp. 3), 1996/97]

Ethical investment funds asked questions about the company’s environmental management and EMS but were not the only shareholders to do so. Specifically for EMS, environmental consultants were also seen as a driving force, although they were seen to

overstate the case for them occasionally. Respondents in Aqua Co. suggested that they were not (yet) experts in environmental management and were orienting their efforts to a significant extent along the lines of what other companies were doing.

At Hydro Co. there was little discussion about EMS in the first research phase. Environmental management in general was frequently related to external legitimacy, particularly the positive image and recognition that was to be gained from having a good environmental reputation:

I think [the increased importance of environmental management in the company] is mainly to do with two external events. . . . In the Business in the Environment Times Index of environmental management we came in the second quintile. . . . [and] earlier this year there was an analysis of 42 environmental performance reports and . . . we came second. . . . Also our chief executive was invited to join ACBE, the Advisory Council on Business and the Environment, which is also fairly high profile. [Environmental Manager, Hydro Co. (Resp. 2), 1996/97]

It was implied, albeit not explicitly stated, that introducing an internal EMS was part of this increased importance of environmental management in the company and hence, largely a response to interest from external stakeholders. Like in Aqua Co. there was also a sense that other companies in the industry were introducing these environmental management measures and that this was becoming the norm in the industry.

In 2001 external institutional aspects of (accredited) EMS had gained further importance, particularly the importance that large customers attached to them. Managers at Water Co. and Hydro Co. saw accreditation as increasingly useful and necessary when bidding for contracts in competitive markets. This reflects the increasing importance that companies attached to non-regulated, competitive markets as well as the introduction of more competition for large industrial and commercial water customers in the UK. It may also be a reflection of the increasing spread and adoption of accredited standards in general. One manager at Hydro Co. argued further that, since the company expected ISO 14001 and ISO 9000 accreditation from its own contractors, it needed to show that it adhered to these standards itself.

The reason we are now [aiming for ISO 14001] is not so much that it's an advantage but that it is a given, companies now expect it. And, indeed, we expect it of companies. When we do our own strategic purchasing, it's one of the questions that we ask companies, what formal environmental management system do they have in place? . . . And it is a bit difficult if . . . you yourself don't actually have those standards in place. So, I don't think it would give you competitive advantage but you wouldn't even be in the game if you didn't have it in the near future. [Water Supply Director, Hydro Co. (Resp. 10), 2001]

At Aqua Co. the situation was somewhat different as work towards site-level accreditation to ISO 14001 had been curtailed in 2001. This was justified with the increased cost pressure that the recent regulatory price review had imposed on the company. Environmental staff at the company argued that one of the reasons was that the external benefits

of a certified EMS were not recognized throughout the company. The environment manager expressed hopes that a recent good rating in the Business in the Environment Index, which he attributed to the – abandoned – accreditation effort, might persuade top management to allow work on EMS to continue.

Internal Legitimacy and Institutional Issues

EMS were also seen to provide internal legitimacy for environmental management. This was particularly important in the light of considerable uncertainty about the best way to start and progress formal environmental management and improve environmental performance in the first research phase. In Water Co. accreditation to BS 7750 was seen as an early goal that the company could aim for and was thus thought to be motivating and giving direction to their efforts. The other side of this argument emerged in Aqua Co. in 2001, where some respondents took the abandonment of efforts to achieve ISO 14001 for waste water treatment sites as a sign that environmental management was not given priority by the top management of the company:

Because of all the re-structuring and change that have gone on, what I've seen happening is that the focus on environmental issues has actually slipped. The classic example is that two years ago we were heavily going for 14001, and now we're not. [Environmental Compliance Manager, Aqua Co. (Resp. 18), 2001]

The readiness with which formal environmental management systems were adopted seemed linked to organizational history and culture. Where a company culture generally supported formal management systems the introduction of an EMS seemed less controversial. For instance, managers at one, previously independent division of Aqua Co. said that formal management systems were something they were used to in other areas of management, so introducing an EMS seemed an obvious direction for their early environmental management efforts. At Hydro Co. differences in attitudes towards the adoption of ISO 14001 between the two research phases were explained by a change in organizational culture, away from strong opposition to the bureaucracy associated with formal systems towards a much more formal and bureaucratic way of operating in general. Given the more favourable disposition towards formal management standards in general, having ISO 14001 was then seen as reinforcing the company's strategy of positioning itself as a leading environmental services provider. A company's history of involvement with (environmental) management standards may also influence subsequent involvement with other, similar standards. Thus Water Co., one of the pilot companies for BS 7750 during its development, was also involved as a pilot company in a new sustainability management standard in 2001. Company culture was also seen as important in terms of the actual environmental performance benefits that an EMS could provide. Managers in all three companies explained that, without an embedded environmental culture, the introduction of an EMS in itself was unlikely to improve environmental performance.

Another highly significant internal factor is the role played by individual managers at critical times. At Water Co., in the first research phase, a charismatic environmental

director had been appointed. Sensing that a demonstrable early achievement for environmental management was needed, he encouraged the introduction of an environmental management system and the pursuit of accreditation to BS 7750 despite personal scepticism about the usefulness of such a system for tackling wider environmental issues. The system itself was then developed and maintained under the direction of the quality director, who was personally much more interested in formal management systems and made efforts to use the system as a vehicle to drive forward environmental performance improvement. Due to reorganization and staff losses, neither of these two directors remained in post in 2001. At that stage, respondents did not really see the EMS as driving the environmental agenda in the company. While the EMS had not been abandoned, it seemed that it was only a significant driver of the agenda while people with influence used it as a vehicle for improvement.

The influence of individual managers could also be felt at various stages in the other two companies. At Hydro Co., in 1996/97, the then chief executive – as well as the entire company culture – was said to be opposed to very formal, bureaucratic systems and hence to the adoption of BS 7750. In 2001, the new chief executive was said to be far more supportive of such systems, a factor in the decision to aim for accreditation to ISO 14001 for the management system. At Aqua Co., in 2001, the abandonment of efforts to have most waste water sites accredited to ISO 14001 was also attributed to the opposition of influential top managers.

DISCUSSION OF RESULTS

The three case studies show significant institutional factors in managers' perceptions of environmental management systems. The nature and workings of these institutional factors and how they related to any performance issues associated with EMS varied between companies and between the two research periods. Figure 2 gives an overview of the institutional and performance issues associated with EMS in the first research period. The structure of Figure 2 is based on the theoretical framework presented in Figure 1 but shows issues found important in the case studies, rather than those derived from the literature.

The key findings from the first research phase were that there was little or no perceived economic benefit from the adoption of environmental management systems due to the lack of competition in the market. There was no suggestion that EMS might contribute to economic performance via cost savings and improved operating procedures. There were some perceptions that EMS would contribute to better environmental performance on regulated environmental issues but respondents had very mixed views on this point. A key factor in the adoption of EMS at the time seems to have been the need to improve external legitimacy in a climate of increased public scrutiny of and hostility towards the industry. A good fit with organizational culture and the agency of individual managers were also seen to be influential.

External pressure for improved environmental management and performance was perceived to be significant during the first research phase but there seemed to be little specific pressure for the introduction of EMS. A number of managers expressed uncertainty as to how best to respond to the external pressure. At the same time, formal

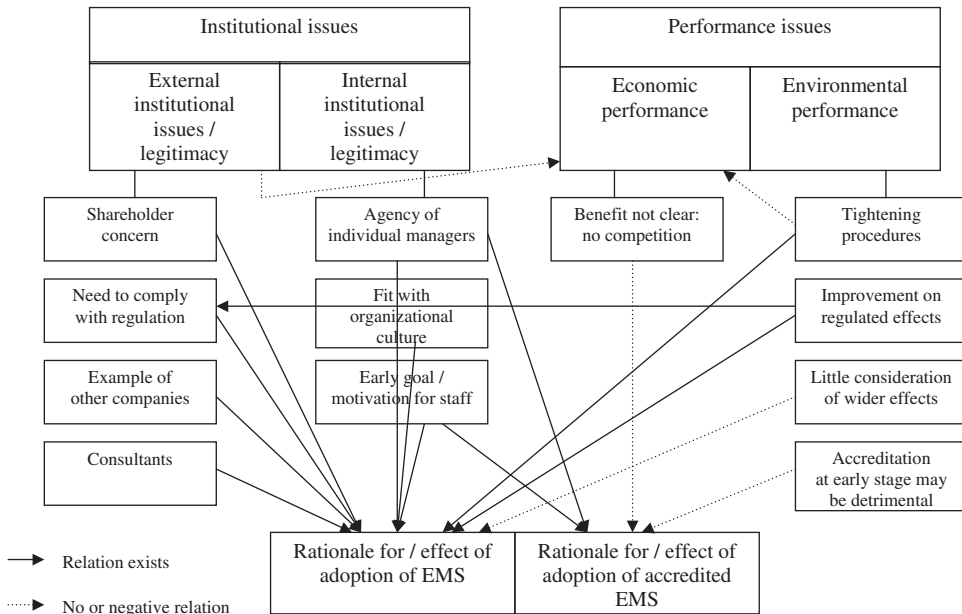


Figure 2. Institutional and performance issues in the adoption of EMS in the three case studies – first research phase

environmental management was new in these companies and not everyone outside the environmental management function was agreed on its necessity or benefits. Environmental managers therefore had to perform a double legitimization act: gaining internal legitimacy for formal environmental management (which entailed persuading some powerful top and senior managers as well as staff) and improving the external legitimacy of their companies with environmental stakeholders. At the time environmental management systems were increasingly being introduced by large and well respected companies across different industries. Introducing an EMS – either to an accredited standard or on the template of it – would therefore seem to be a useful aid in achieving both internal and external legitimacy. In the context of significant but relatively unspecific external pressure for better environmental management it is perhaps not surprising that fit with organizational culture and the agency of individual managers should have been influential. The newness of the environmental management systems may further explain why respondents were unclear on any environmental performance benefit they would provide and whether it would be better to introduce an accredited or an unaccredited EMS.

In the second research phase some of the key issues in managers' perceptions of EMS had changed. These findings are represented in Figure 3.

The key developments in the second research phase were the greater perceived commercial benefit of (accredited) EMS. The companies were now operating at least partly in competitive markets and felt that having an accredited EMS was useful or even necessary in bidding for competitive contracts. By contrast, there was hardly any mention of environmental performance benefits of EMS at that stage.

External institutional pressure was seen to be coming increasingly from the marketplace. The companies increasingly felt that they needed ISO 14001 accreditation to bid

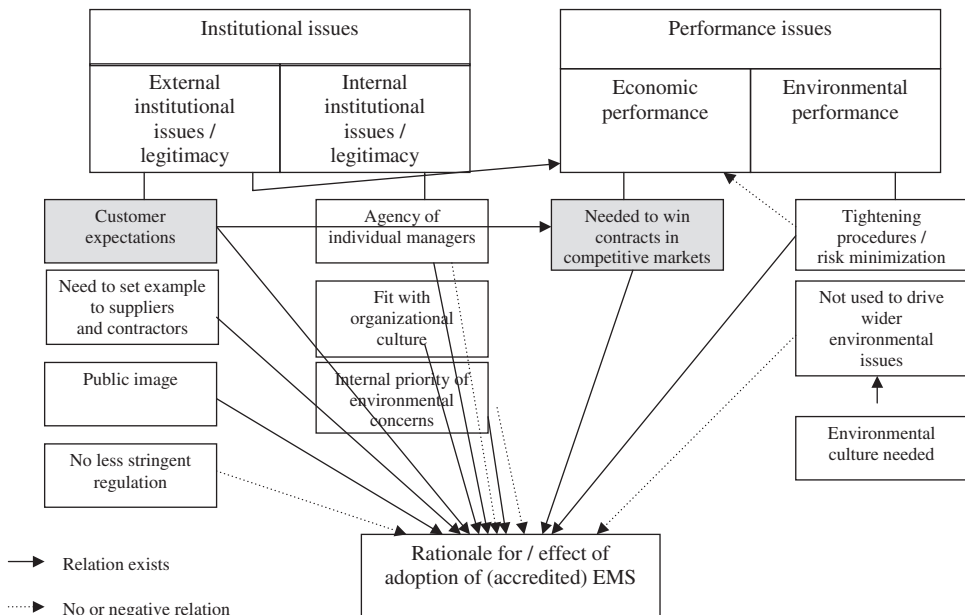


Figure 3. Institutional and performance issues in the adoption of EMS in the three case studies – second research phase

for contracts in competitive markets. At Hydro there was also a suggestion that, as the company expected an accredited EMS from its own contractors and suppliers, it needed to set a good example to maintain credibility.

There was continued pressure from other external stakeholders for good environmental management but this was perhaps perceived to be a little less urgent than in the first research phase, as the industry's performance on regulated environmental issues had improved since privatization. Accredited EMS were seen to improve the external image of company with customers and generally, as expressed in social and environmental responsibility rankings. However, these external benefits were appreciated more strongly in some companies than in others. Some contrary external pressures, such as cost savings demanded by regulatory price review, could lead to less emphasis on environmental management in general, and EMS in particular. We therefore find an external institutional context where there is continued pressure for good environmental management and some new, specific pressure for accredited EMS from the marketplace but this pressure is not perceived uniformly in all companies.

In this context internal institutional factors continue to be noticeable, particularly fit with organizational culture. At Hydro Co. a greater systems orientation in general led to a new decision to aim for ISO 14001 accreditation. At Aqua Co. a strong concern with cost reduction was seen to lead to an abandonment of attempts to gain ISO 14001 accreditation. Water Co.'s relatively long history with early involvement in environmental management standards found a new manifestation in its decision to pioneer a new sustainability management standard. We also saw a continued importance of individual agency, partly in conjunction with these organizational culture aspects. The resistance of

individual top managers to further work on ISO 14001 accreditation at Aqua Co. and the more sympathetic attitude towards systems of a new chief executive officer at Hydro Co. are examples of this. At Water Co. the departure of both the quality director and the environment director who had initiated the EMS was seen to result in less impact of the EMS on changes in environmental management although the system had not been abandoned.

We can now summarize the relative influence of institutional and performance factors in the adoption and maintenance of environmental management systems as follows.

Firstly, the evidence of this study suggests that institutional factors play a greater role in the adoption of environmental management systems than both environmental and economic performance factors.

Secondly, improvement of environmental performance seems to be only a minor aspect of the adoption of environmental management systems. Environmental performance benefits were mentioned by some respondents in the first research phase but hardly at all in the second research phase. In addition, it was debated even in the first research phase whether EMS really led to better environmental performance. Environmental performance of the water industry generally improved between the two research phases but from the evidence of the interviews it is unclear whether the introduction of EMS played any significant role in this improvement. While it is difficult to establish clear causal relationships here, respondents in all three companies chiefly attributed improvements in environmental performance to stricter regulation and – most crucially – more money for capital investments being made available after privatization.

Thirdly, this study suggests that economic performance benefits of EMS:

- (a) become stronger over time as environmental management standards become established
- (b) arise mainly out of customer demand rather than efficiency gains through improved operations
- (c) only arise in competitive markets.

Economic performance benefits were not seen as important at all during the first research phase but had become much more significant by the second research phase. This change seems to be due to two reasons. One is that some of the markets in which the companies operated had been opened to competition, increasing companies' need to conform to customer expectations. This resonates with some of the literature on privatization which contends that a focus on performance – and the performance and cost benefits expected from privatization – have less to do with privatization per se and more with the introduction of competition (Greene, 2002; Hodge, 2000). The other reason may be that accredited environmental management systems had become more widely established at that time and were becoming part of the supplier specifications in many large companies.

Fourthly, the evidence suggests that environmental management systems have an important role in signalling environmental commitment and professionalism in environmental management to external and internal stakeholders. This echoes Staw and Epstein's (2000) findings regarding the adoption of popular management innovations in general.

Finally, with respect to the role of internal factors, this study suggests that:

- (a) where external environmental pressure is unspecific with respect to EMS and where managers experience uncertainty over the best way to improve environmental management, individual managers can play a significant role in companies' decision to adopt or not to adopt an (accredited) environmental management system
- (b) in a situation of unspecific external pressure and uncertainty over environmental management, (accredited) environmental management systems are more likely to be introduced if they fit easily into the established organizational culture.

While there were important external institutional pressures for improved environmental management generally there was also, at least initially, little specific pressure for the adoption of accredited environmental management systems. This unspecific external pressure was paired with some uncertainty on the part of managers on how to respond to the calls for better environmental management. This seemed to open a space for a significant role of individual managers and the company's organizational culture in shaping the adoption (or non-adoption) of EMS. This is in line with O'Neill et al.'s (1998) findings that organizational characteristics, the level of ambiguity, as well as the nature of the management innovation all influence diffusion patterns.

All in all, the findings of this study confirm and expand an institutional perspective on the adoption of management innovations. Whereas prior work on this subject has often assumed a preponderance of performance factors or a balance of performance and institutional drivers, the results here suggest that institutional factors are, in fact, more prevalent. Environmental management standards do not seem to differ from other management innovations in this respect. The question then arises as to whether this has wider repercussions for environmental management in business. If environmental concern was just another management fashion, unlikely to have any deeper meaning or consequences, it would perhaps not matter too much. The legitimacy conveyed by the adoption of an EMS might then fulfil an important function in allowing business to keep operating and keeping potential critics and reformers satisfied. However, if one is to take the sustainability challenge seriously the implications are more worrying. The adoption of a management innovation that improves companies' environmental legitimacy without doing much to tackle their (wider) environmental performance may give a false sense of achievement and security and may stop companies and their external stakeholders to press for more far-reaching improvement. In this sense environmental management systems might actually hinder rather than promote moves towards greater ecological sustainability of business.

WIDER IMPLICATIONS AND CONCLUSION

This study has found that institutional factors were more important in the adoption of environmental management systems and standards than either economic or environmental performance issues. It also allows us to draw some more general conclusions about the way in which institutional forces shape the adoption of management innovations.

One of these concerns the way in which legitimacy can be achieved by a new management standard. By being derived from another, well established standard (i.e. the quality management standard), the new standard (i.e. the environmental management standard) would seem to obtain some of the legitimacy of that other, established standard from its inception. By having the legitimacy of an older, established standard, the new standard could then convey some legitimacy on a new area of management, which was subject to uncertainty and ambiguity.

Proposition 1a: Transparent derivation from an established management standard can convey legitimacy on a new management standard early in its life.

In some ways we may consider the ISO 14000 standard as a product of institutional pressures itself. Criticisms of corporate behaviour by Greenpeace and other environmental groups put pressure not only on individual companies but also on governmental and supranational organizations, such as the UN, which in turn put pressure on the ISO organization to come up with a standard, based on the widely accepted ISO 9000 standard, to help deal with environmental pressures. In that sense the development of ISO 14000 can be seen as an institution driven response triggered by a prior institution driven response.

Proposition 1b: The development of new management standards may itself be driven by institutional forces.

The driving forces for adoption of a management standard may vary over its life time. Early in the life of a new management standard adoption may depend on champions of the new standard being in an influential position at the right time. As a standard becomes more established it may become a widely accepted norm and its adoption may assume a taken for granted quality ('you wouldn't even be in business if you didn't have it').

Proposition 2: Adoption of a management standard may be more dependent on the agency of individual 'champions' in the organization during the early life of the standard.

Finally, the findings from this study invite some further considerations regarding the distinction between performance and institutional issues in the adoption of management innovations. A number of points arise in this respect. Performance is not a single dimension. Much of the literature on management innovations assumes that 'performance' means 'economic performance' and that the overt rationale for management innovations is to improve economic performance. However, some management innovations, such as environmental management systems, may not be aimed chiefly at improving financial performance, at least not directly. Rather they are born out of a public-good rationale, in this case that of environmental protection.

Proposition 3a: A management innovation may be chiefly associated with a public-good benefit, rather than an economic one.

The different types of performance may not be related to each other in any direct or linear fashion. Improvement in economic performance may not arise directly from the implementation of the management innovation but through improved legitimacy with various external stakeholders, such as customers. This can be quite a complex relationship. In this study, customers seemed to value their water supplier's accreditation to the environmental management standard as it helped them to demonstrate their own environmental credentials to their stakeholders. The value of the EMS seemed to lie less in any actual environmental performance improvements (the existence of which was debated) but in the external legitimacy provided by accreditation. Any economic performance benefits therefore would seem to be closely connected with the increased legitimacy conveyed by the adoption of the management innovation. This seems in line with some of the literature, which suggests that pursuing a management innovation for institutional reasons may not be detrimental to financial performance.

Proposition 3b: A management innovation may lead to improved economic performance primarily through an institutional route, via increased legitimacy with external stakeholders.

An original public-policy (i.e. environmental) performance rationale for the development and adoption of a management innovation can, over time, be replaced by an economic rationale, as the innovation becomes more widely accepted and gradually becomes the expected norm, necessary for continuing relationships with customers and other key stakeholders.

Proposition 3c: As a management innovation becomes more established, an original public-good rationale for its adoption may be superseded by an economic rationale.

Following from this discussion it seems clear that institutional pressures can be prevalent over economic and other performance issues in the adoption of management innovations. Furthermore, responding to such institutional pressures is by no means an irrational course of action for companies but, on the contrary, a very pragmatic response to those institutional forces. Rather than distracting from economic performance, conforming to institutional pressures can result in improved economic performance. It is, however, less clear whether the widespread adoption of this management innovation will actually further the original public-good (environmental, in this case) purpose of the innovation. The relation between institutional and both economic and public-good rationales for the adoption of management techniques should be further tested in future research, looking at different management techniques with both economic and public-good implications (for instance corporate social responsibility management systems and similar) and different types of industries. Future research could also usefully compare the results from this study with data obtained in different national contexts, as the specific institutional contexts vary.

NOTE

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