

## CASE 13: HACKEFORS MODEL, SWEDEN

### BASIC DETAILS

**Name of initiative**

Hackefors Model

**Type of initiative**

Network /Supply chain approaches

**Country/Region**

Sweden

### PART 1: BACKGROUND INFORMATION

**Actors involved in the delivery of this initiative**

The initiative was developed by a private company, Altea AB, which first applied it to the district it belonged: the Hackefors district. The company is currently running the initiative in other districts, where it acts as consultant and co-ordinator, selling the model as a service.

**Target audience**

The target audience is clusters of SMEs. Usually, participating companies belong to the same sector of industry or to the same company group.

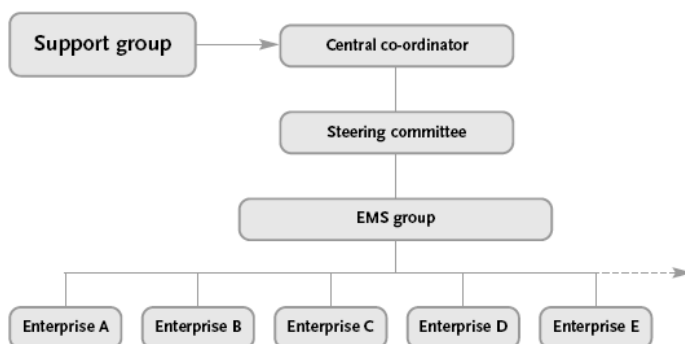
**Objectives**

The initiatives aim at providing compliance assistance and improving environmental performance of enterprises, through the adoption of ISO 14001. Recently most enterprises require an integrated certification, adding to the environmental system the quality system ISO 9001.

**Description**

The model originated in the Hackefors industrial district in Sweden in 1997 and is a network approach to EMS implementation. All participating companies appoint an environmental manager; together these form the EMS group. From this group a steering committee is selected and a central co-ordinator appointed (see figure 1). The co-ordinator is responsible for the network and the common parts of the system, including common documentation. The co-ordinator acts as a hired and shared environmental manager of the group. A motivated and well-trained co-ordinator appears essential for the success of the approach.

*Fig.1: Organisation of the Hackefors Environmental group according to the Hackefors Model*



Source: Ammenberg, J., Boriesson, B. and Hielm, O. (2000)

Each enterprise develops its own EMS, although a large part of the documentation is identical for all companies (the EMS manual). Centralised handling and steering of many of the EMS documents saves the SMEs much of the administrative work. The initiative provides support to participating SMEs throughout all the stages of ISO 14001 until certification. The approach involves monthly meetings with homework, training for environmental managers and employees as well as dedicated enterprise visits.

#### **Main intended benefits for SMEs**

SMEs enjoy the benefits of being able to implement an EMS at reduced costs and reduced administrative work. The model facilitates both implementation and maintenance of an EMS and provides training to the involved enterprises.

#### **Principal influences that led to the development of this initiative**

SMEs were not able to cover the expense and time needed to achieve ISO 14001 certification. Groups of enterprises then found it more effective to develop a network approach, thus saving costs in terms of consultancy services and administrative workload.

#### **Who was involved in the development of the initiative?**

The initiative was the initiative of Altea AB.

#### **Main outputs**

The main outputs of the initiative are the drafting and implementation of enterprises' individual ISO 14001 environmental management systems, and integrated environment-quality systems. So far the initiative has involved approximately 600 firms in about 40 different networks, all based in Sweden. In addition, in other countries 6 more companies obtained certification through the model, and 2 are about to achieve it. The great majority of companies involved are SMEs. Only two companies have more than a thousand employees: one of them adopted the model as part of a network, while the other achieved certification alone.

## **Similar initiatives**

None aware of

## **PART 2: COMMUNICATION**

### **How SMEs are made aware of the opportunities under this initiative**

There is no communication or marketing 'tool' in place to attract SMEs to this initiative. Instead, information is spread by the companies adopting the model. An increasing number of districts interested in implementing the model have contacted Altea, just by learning about the initiative from existing networks. There is not an active communication strategy in place. Nevertheless the long-term goal of Altea is to reach SMEs throughout Europe, thus a marketing strategy is currently being discussed.

### **What has worked well/less well**

The model's effectiveness was such that this initiative spread, especially at national level, without the need for communication and marketing tools. The initiative also gained credibility at the international level, having been discussed in several publications, academic research and in the European Commission's 'Best' Project of 2004.

Although the initiative has managed to attract SMEs without a marketing campaign, in the future it may suffer from the lack of a communications strategy. The absence of such a strategy may restrict its visibility with less well informed companies and companies outside of Sweden.

### **Proportion of the target audience engaged in the initiative**

The target audience is Swedish clusters of SMEs. In 2003 there were approximately 485,000 SMEs the majority of which (454,000) were micro enterprises. Assuming that the number of SMEs has not changed significantly, the 600 companies which have adopted the model represent circa 0.12% of total Swedish SMEs.

## **PART 3: BUDGET**

### **Total budget**

The total budget is related to the number of companies and networks adopting the model. Since Altea AB's only activity is the management of the Hackefors model, we can take its turnover as an indicator of the dimension of this activity. Altea currently employs 7 people, and its turnover is circa 5-6m SEK per year (€50,000 - 650,000).

### **Expenditure per annum**

Yearly expenditure depends on the number of companies and networks adopting the model. It is to be noted that usually the development and implementation of the group EMS does not take more than one year. It can be assumed thus that the cost for the first year is based on the participation fees that companies pay for the implementation of the model.

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<sup>1</sup> European Commission, 2003: Observatory of European SMEs. 2003/7 SMEs in Europe 2003.

Further work is required afterwards to keep the system updated and working. This service is provided by Altea at a monthly rate of 700 -1000 SEK (€75-100), ie approximately €900-1200 per year.

### **Start up costs**

The Hackefors model took 1.5 years to be developed (by Berit Börjesson, founder of Altea AB). Although the first application of the model took longer than it does today, the cost for enterprises to participate was not higher. An estimate of start up cost thus could be given by the current participation fees, and it will be highly dependent on the number of firms involved. It should be noted that this fee did not change after the public funding was suspended.

### **Ongoing costs**

Participating companies together finance the central administration, i.e. the work done by the central co-ordinator and the support group, the training provided and the development of the environmental management system. It is not possible to split the cost into single categories, since the overall service is provided by Altea, often in an integrated manner. The ongoing costs are therefore comprised of the firms participation fees plus the yearly fee companies pay after reaching certification, for the service offered by Altea to maintain and update the system. The yearly service includes four internal meetings with the coordinator, two internal audits, additional training, legal updates on the website and, optionally, legal compliance checks.

### **Source of funding**

Currently the model is reproduced on a commercial basis, this meaning SMEs have to pay for the service provided. However, SMEs involved in the initial Hackefors model had access to up to 50% government subsidy for training. When the initiative became a private commercial venture, it was able survive without public support, although the training provided was reduced. When publicly funded, the initiative provided 32 hours of training half funded by governmental subsidies. The cost of training borne by enterprise was €58 per employee. Once privatised, the number of hours for training has roughly been halved (16 hours). When subsidies were removed, there was not an increase in the participation fee paid by enterprises.

### **SME contributions**

SMEs have to contribute themselves. The cost for participating depends on their size:

- 5 employees: 28,750 SEK (€3,087)
- 10 employees: 47,500 SEK (€5,100)
- 50 employees: 157,500 SEK (€16,909)

Currently most networks apply for an integrated management system, in order to obtain both an environmental and quality certification. The price for this kind of service is higher:

- 5 employees: 37,500 SEK (€4,026)
- 10 employees: 63,500 SEK (€6,817)
- 50 employees: 228,500 SEK (€24,532)<sup>2</sup>

### **Steps taken to secure long-term finance**

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<sup>2</sup> All data in Euro were calculated at 19.04.06 exchange rate

None have been taken, although some continuity is ensured by the fact that after the certification is achieved Altea AB remains as the central co-ordinator.

### **Cost effectiveness**

Although it may be difficult to assess the exact amount of cost savings delivered by the Hackefors model, comparisons between consulting services made by the service provider have indicated that the price for group certification is about 65% lower than for individual certification. Many of the cost savings are due to the sharing of expenses between the involved enterprises.

Furthermore, a group of enterprises can have a bargaining advantage when negotiating the choice of an external auditing authority than would be the case if negotiated individually. For example, the price of external audits agreed with certification companies is cheaper, because the overall time spent for auditing a whole network is shorter, given that many documents are the same in every company. The use of internal auditors is also cost effective compared to having one internal auditor at every company or using external consultants. Co-ordinated training also costs less than would be the case if each company was to do this alone; and effective and rational administration has led to further savings.

## **PART 4: EVALUATING EFFECTIVENESS**

### **A- Performance**

#### **Delivering improved compliance with environmental legislation and/or improved environmental performance**

As legal compliance is one of ISO 14001's main requirements, companies obtaining this accreditation are guaranteed to be in formal compliance with the applicable environmental regulation. Every company holds a register of environmental legal requirements affecting their activities. In addition, companies adopting the Hackefors model together sign up to a service which provides a database of latest issues of environmental legislation on Altea ABs website. Companies can check for any new regulations, ask for information and, by paying an additional fee, can have their compliance checked by Altea. The central co-ordinator is responsible for the identification of legislation common to many of the companies within the group, while environmental co-ordinators are responsible for individually applicable requirements.

#### **Outcomes, ie changes in behaviour**

The first initiative, held in the Hackefors district, involved 36 SMEs, the majority of which were, surprisingly, micro firms. Since that time, the model has been reproduced in 40 different groups in several other Swedish regions, and in 2004 the number of firms being certified to ISO 14001 as a result of this model raised to 600. Amongst these, 59.1% of certificates have been issued to micro enterprises; 29.6% to small enterprises; 9.4% to medium-sized companies and 1.9% to large companies. It is also worth mentioning that 8.2% of all the enterprises that adopted the model had only one employee.

According to a recent study on the Hackefors model<sup>3</sup>, the initiative has resulted in energy cost savings, improved relationships with customers, increased interest in training, and certification cost savings as a result of group certifications. In the same study, surveys revealed that over one third of the involved companies had undertaken further collaboration with other network members in many areas such as training and recycling. This seems to imply that the model, more generally, has made participants more aware of the benefits of network approaches.

### **Main strengths**

- Takes a network approach, which can be used by a variety of firms from different industrial sectors.
- Makes ISO 14001 more affordable for SMEs: the network approach requires less human and financial resources and may lead to significant cost savings, compared to individual certification. Provides an experienced coordinator, offering support throughout the process.
- Is delivered through a network of environmental representatives from each company, and coordinated centrally.
- Encourages relationships between companies, which may then cooperate in other network activities (such as training, district heating, electricity purchase, etc).

### **Characteristics contributing to the identified strengths:**

#### ***a. Communication***

No communication strategy has been developed so far, although the Hackefors model has a good reputation among the customers and promotion has worked well through word of mouth.

#### ***b. Delivery***

The model is applied to enterprises as a service provided by Altea, which acts as central co-ordinator responsible for the network and the common parts of the system (see fig.1)

#### ***c. Management***

The experience of the co-ordinator is a key factor for the success of the initiative. The co-ordinator is a member of Altea, thus a well trained professional with proven experience in the field of group certification.

#### ***d. Funding***

The initiative is well functioning even without public funding. The price for companies was not raised when the funding was suspended.

#### ***e. Other***

The method of group meetings has proven to be highly beneficial, not only for the implementation of the EMS, but also for building relations between the involved companies

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<sup>3</sup> Hallinan & Jenks, 2003

### **Other factors which may have contributed to its success**

An increased awareness and interest of SMEs in EMSs was noted, particularly since they have been required when applying to some public contracts/projects.

### **Main weaknesses**

According to research<sup>4</sup>, disadvantages may include dependence on the central organisation/coordination. The central coordinator is a crucial figure, who must be a good communicator, a capable leader and should have a good understanding of the entire district. The central design of the EMSs may result in decreased flexibility of the individual company EMS. Also noted was the fact that the whole standardised EMS process could be too much of a burden administratively for the smallest firms taking part in the networks. It is not always easy for some companies to maintain network links after certification is achieved.

### **How could these weaknesses be addressed?**

In order to avoid heavy dependency on one person, many people in Altea have experience of the Hackefors model, and can act as or help the co-ordinator. For network relations to continue, someone should be responsible for collective activities also after the ISO standard has been reached. This is why after the certification is achieved Altea AB remains the central co-ordinator.

### **Attempts made to improve the initiative**

The ISO 14001 certification approach has recently been integrated with other systems, eg. ISO 9001, OHSAS, etc. This means that the manual and the procedures implemented though the Hackefors model can, on request of the company/network, integrate the environmental requirements with other standards (such as quality and security). More efforts have been focused on spreading the model internationally.

### **Evidence of *sustained* changes in performance**

Research<sup>5</sup> revealed that the first joint EMS at the Hackefors district led to many environmental improvements. The main improvements were identified within the area of waste management, on which the companies had co-operated before the EMSs were implemented. These improvements thus may be a result of the network of enterprises, rather than the mere EMS. The categories of waste separately collected increased, from 2 to 20, and some of the waste separated at the central unit is re-used by other companies. The fraction of waste that should not be incinerated (eg electronic material) has been removed from the incinerated waste stream. Other improvements were reached thanks to the EMS, such as: reduced emissions of solvents; reduced emissions to air and water; more effective use of energy; substitution for more environmentally sound goods; and co-ordinated transportation. Other benefits generated by the network co-operation in the Hackefors district were: joint purchase of energy, creation of a district heating system, sharing of collective services (pool for workers, caretakers, security guard) and office equipments (photocopies, etc), increased interest in education.

## **B – Opinions:**

### **Deliverer's opinion of this initiative**

<sup>4</sup> Ammenbeg and Hjelm (2002) in print.

<sup>5</sup> Ammenberg and Hjelm study (1999)

The deliver considers the model to be a highly successful, effective initiative, capable of attracting SMEs to environmental management systems and developing group certification efficiently. The initiative has also proven to be a profitable activity, attracting an increasing number of companies even without the use of marketing tools. Due to their experience, the deliverers believe that the model is an economically realistic way to introduce environmental management to SMEs, and consider ongoing support as an important tool. They also believe that the initiative is even more effective now ISO 9001 has been integrated into the model.

### **Users' opinions**

In a 1999 study<sup>6</sup>, 12 environmental co-ordinators were interviewed. The majority of them believed that the EMS has made it easier to win contracts for products and services, and that ISO 14001-based EMSs lead to commercial and environmental improvements in general. In a more recent investigation<sup>7</sup>, a questionnaire was circulated among a sample of participants in 4 of the 24 SME networks currently applying the Hackefors Model. In total, 68 companies were surveyed, with 50 firms (73%) replying. One of the main reasons cited for joining the group certification network was the importance of improving the company image through ISO 14001. Interestingly, cost savings were not mentioned as being a major factor for adopting the certification. About 55% of the sample admitted that they would have never achieved ISO 14001 without a network approach. The most relevant barriers to solo certification were lack of time and lack of knowledge, but also lack of financial resources and insufficient human resources. Nevertheless 30% of the interviewed companies revealed that they had some difficulties with the joint certification group, in that the process required large amounts of time and resources, increased their workloads and sometimes turned out to be a big project for a small company.

### **Other stakeholder views**

The overall impressions are positive. For instance, the model has been rewarded by the Swedish Environmental Management Council, and a number of academics from different Swedish universities have conducted research on the model. According to the comments provided by NQA, a private company which certificated firms adopting the Hackefors model, the initiative represents a cost-effective way to reach ISO certification. It helps SMEs to save time and costs, eg those of employing someone internally (€40-60,000 on average) or hiring an external consultant. It was noted that 'With the Hackefors Model, SMEs (...) get a Group Co-ordinator who in reality works almost full-time with day-to-day environmental queries. They also get all the documentation they need at the start. On top of that they get the opportunity to share experiences and discuss systems at regular meetings with other companies in a group. They also get the opportunity to have their systems certified in a more cost-effective way.'

A possible weakness was seen as the need to improve the level of understanding of ISO standards amongst the companies themselves, which could be achieved through increasing the time of Group Meetings, or with further training (funded by EU based initiatives like Structural Funds).

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<sup>6</sup> Ammenberg and Hjelm (1999)

<sup>7</sup> Hallinan, Jenks (2003)

## **PART 5: TRANSFERABILITY**

### **Could this initiative be easily transferred to other Member States/regions?**

The fact that this initiative has been already replicated in other Swedish regions, and that it aroused the interest of some other countries, may indicate that the model has been recognised as being easily transferable and economically sustainable in the long run.

### **Has this initiative already been replicated elsewhere?**

The initiative has already been replicated in 30 different networks of companies in other Swedish regions, involving 600 companies overall. Denmark, Finland, Germany, Poland and Greece have shown interest in the model. Eight foreign firms adopted the model, although not as part of a network but as branches of Swedish companies. These are located in Denmark (5), Finland (1) and Germany (2); the latter are in the process of receiving certification.

### **If this initiative were to be replicated, what key lessons would you share?**

- It is important to keep in mind that the network of companies can include companies of very different sectors and with different internal skills.
- It is important for the co-ordinator to be flexible and understand companies' peculiarities and needs, in order to relate with each of them in accordance with their capabilities to understand and adopt a management system.
- A good engineering expertise may be needed to properly assess the environmental impacts and management requirements of each different firm involved.
- Good training of the co-ordinators is a key factor for transferability.

## **PART 6: CONCLUSIONS**

### **Sources of information/people interviewed.**

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