

Environmental Management and Leadership — Neste as an Example

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SUMMARY

This article presents the case of Neste as an illustration of Environmental Management and Leadership. Two conceptual instruments are required in this research. The 7-S framework organizes Neste's Environmental Management and Leadership into manageable areas which facilitates the review of their contents and emphasis. The development of Environmental Management and Leadership in Neste and some reasons for it can be viewed by Ansoff's matching triplets.

The contents of Neste's Environmental Management and Leadership are ample and versatile. They reach from systems, skills, strategies and structures to staff, symbolic behavior and shared values. The first mentioned management-dominant areas are more emphasized in Neste than the last mentioned leadership-dominant areas. However, the leadership-dominant areas have now begun to gain more attention and gradually they are drawn towards the management-dominant areas.

The development of Environmental Management and Leadership in Neste follows Ansoff's scale: from the stable level of the sixties and the reactive level of the seventies to the anticipatory level of the eighties and the anticipatory/entrepreneurial level of the nineties. The deviation of the areas has increased. The environmental level of the business world and society as well as the general organizational conditions in Neste on each decade correspond with the level of Neste's Environmental Management and Leadership. This may suggest that it could be possible to explain the development of Environmental Management and Leadership by these two factors.

Environmental Management and Leadership of a company can be described through general management and leadership theories which offers great research opportunities.

Keywords: environmental management, environmental leadership, sustainable development.

INTRODUCTION

Environmental problems have become an important issue in the business world during the last few years. Companies all over the world are beginning to realize that it is in their own interest to have an environmentalist approach to their business. A company's environmental impact on nature is reflected in the willingness of its interest groups to cooperate. As well as providing threats, the growing concern for the environment offers great business opportunities.

The reconciliation of economics and ecology may well be a matter of survival for business. This will be possible through Environmental Management and Leadership. In the following the case of Neste is presented in connection with Environmental Management and Leadership. Neste is suitable for this purpose mainly because of its long experience in environmental questions and its ability to cover all the costs caused by Environmental Management and Leadership.

First, the concepts of Environmental Management and Environmental Leadership are defined, and the case company, Neste, is briefly viewed. Second, an additional instrument, the 7-S framework, is introduced to organize the ample material of Neste's Environmental Management and Leadership into manageable areas. These areas are studied from the point of view of their contents and emphasis. Finally, to be able to view the development of Neste's Environmental Management and Leadership, another instrument, Ansoff's matching triplets, is introduced. This will show how Environmental Management and Leadership have developed in Neste and also give some reasons why such changes have occurred. The timespan covers decades from the 60s to the 90s.

ENVIRONMENTAL MANAGEMENT (EM)

Environmental Management (EM) became known in the late 80's as the way in which environmental protection tasks are being managed in companies (e.g. in Davis 1990). Nowadays there are some consultants who help companies to arrange their EM (e.g. Elkington — Burke 1987, Winter 1987, Royston 1991). Powerful organizations like the International Chamber of Commerce have also given their recommendations for EM to the business world. (e.g. Environmental Guidelines. . . 1990) They are based on the principles of Sustainable Development to which more and more companies are gradually willing to commit themselves (ICC "Business Charter. . ." 1990).

Sustainable Development involves meeting the needs of the present without compromising the ability of future generations to meet their own needs. Economic growth provides the conditions in which the protection of the environment can be best achieved, and environmental protection, in balance with other human goals, is necessary to achieve growth that is sustainable. (Our Common future. . . 1987)

At the beginning of this year twenty-six Finnish companies gave their commitment to follow these principles (Teollisuus etsii. . . 1991). Some research has been done to combine ecology with management (e.g. Seidel 1989 and 1990, Davis 1990) and both of them with the concept of Sustainable Development (e.g. Nijkamp — Soeteman 1988, 88—102).

German (namely ex West German) business companies are ahead of companies in most other countries in their EM practices (see articles in the Zeitschrift Führung. . . 1989). Georg Winter, the Chairman of Ernst Winter & Sohn GmbH & Co., has developed an Integrated System of Environmental Business Management which the European Community has identified as an exemplary scheme. This so called Winter Model is more extensive than many others, because it takes not only different management tasks but also some leadership qualities into account in its EM. (Winter 1987)

ENVIRONMENTAL LEADERSHIP (EL)

The concept of Environmental Leadership (EL), on the other hand, has been unknown until now. In any area of Business Administration, management needs to be enriched with leader-

ship in order to make strategic decisions operationally successful. EL could be determined as managing *people* in the environmental protection process of a company.

EL is latently present both in the German and the ICC's ideas of environmental management, but it has not been considered in its own right nor emphasized in any way. Yet it is the personnel of the company as well as other interest groups who finally determine how the Environmental Management of a company affects its business opportunities. Thus, EM requires conscious and active EL in order to succeed.

These two concepts, EM and EL, work together, usually inseparably and overlapping each other. At times, however, one of them is more dominant than the other. It is necessary to be aware of the presence of them both to be able to choose a suitable approach for each individual situation.

THE CASE OF NESTE

A critical condition for a company to practise EM and EL — and finally to protect its environment — is the sufficiency of financial resources allocated for this purpose. This requirement is demonstrated in the principles of Sustainable Development (Our Common Future. . . 1987). This is one of the reasons why it is profitable to study Finland's largest company, Neste, from the EM and EL point of view. Neste has also a long history in environmental protection.

Neste as a whole is too vast an object for a case study. I have chosen to study Neste's strategic EM and EL at the top management level at the head-quarters, and operational EM and EL on all levels of the hierarchy at the refinery in Naantali. Altogether I interviewed fourteen people in Neste. I focused my attention to the contents and the development of Neste's EM and EL.

CONTENTS AND EMPHASIS OF EM AND EL IN NESTE

The area of EM and EL is large and fragmentary. In order to study EM and EL, some instruments are required. The ample material of the EM and EL in Neste can be described effectively by the 7-S framework which includes seven areas: Strategy, Structure, Systems, Skills, Staff (= personnel), Symbolic Behavior (= style) and

Shared Values (Waterman 1988, 56—58). On the one hand this general framework for the development of strategic management divides EM and EL into seven relevant parts. On the other hand it links EM and EL with the domain of Management Theories and Business Administration in general.

In Neste the areas of *Systems and Skills* have a strong emphasis in EM. Environmentally sound technological solutions and techniques are being favoured in production processes, waste disposal, transportation and storing. The concept of Clean Technology (Huisingh 1991) has been adopted. Environmental expertise is promoted and internal as well as external co-operation is active. The problem area within Skills seems to be public relations.

The areas of *Strategy and Structure* are also rather emphasized in Neste. All divisions, sites and operational units follow the company's environmental policy. Environmental auditing will soon be practised on a full scale. Strategic plans in EM are being drafted, executed and controlled. The rather centralized structure is being decentralized, while the responsibility for the environmental excellence of sites and units has always rested on the shoulders of the operational management of a site or unit.

In the area of *Staff* working conditions and inner communications in EM are well arranged in Neste. Staff education and training in EM has just started. There is a payment system for workers and their immediate superiors in which environmental issues cover one sixth of the bonus. The system of payment by results for other personnel does not usually include environmental objectives except in connection with some projects. The psychological motivation of the staff is minimal.

Least attention in Neste's EM has been paid to the areas of *Symbolic Behavior* and *Shared Values*. This order of preferences is changing, though. Neste was one of the twenty-six Finnish companies who signed the commitment to the principles of Sustainable Development in January 1991. One of the main ideas of the concept of Sustainable Development is to recognise the environment as one of the core values of the company. It also recommends an integration of these EM principles into general business management. The concept will have a great influence on other S-areas, too. (ICC "Business Charter. . ." 1990).

Neste has also adopted an international environmental programme of Responsible Care in

February 1991. The programme is designed to help improve the chemical industry's environmental performance and to enable companies to demonstrate improvement to the public (Responsible Care . . . 1989). This programme will have a strong impact on all the seven areas of 7-S framework and will probably give assistance to Neste's problem of environmental public relations.

In the areas of Systems, Skills, Strategy and Structure the aspect of EM is often more dominant than that of EL while in the areas of the Staff, Symbolic Behavior and Shared Values the dominance is usually the opposite. According to the interviews it seems that the EM aspects are much more emphasized than the EL aspects. This leads to an unbalance between the areas of the 7-S framework from the environmental point of view.

If the concepts of Sustainable Development and Responsible Care are really going to be put into effect, the gap between the practices of EM and EL will decrease considerably. Therefore it is probably convenient to discuss EM and EL as if they were a single concept of Environmental Management and Leadership, EML, as in practice they should and will be.

The 7-S framework strongly suggests that an organizational change will succeed only if all the seven areas are considered during the change (Waterman 1988). But with the 7-S framework alone it is not possible to study change. For this purpose an additional instrument should be introduced.

NESTE'S EML ON FIVE LEVELS OF DEVELOPMENT

Five Levels of Development

Ansoff has presented an idea (see figure 1) in which the modes of "environmental" turbulence, strategic aggressiveness and the responsiveness of capability change on a turbulence level scale. (Ansoff — McDonnell 1990, 422)

Implementing Ansoff's idea into EML creates a semantic problem: In Ansoff's "environmental" turbulence the concept of "environment" is a general term, while in this research environment refers to environmental protection areas and is therefore a more limited concept. This is why I separate these two concepts by putting Ansoff's "environment" in inverted commas.

“ENVIRONMENTAL” TURBULENCE	REPETITIVE Repetitive	EXPANDING Slow Incremental	CHANGING Fast Incremental	DISCONTINUOUS Discontinuous Predictable	SURPRISING Discontinuous Unpredictable
STRATEGIC AGGRESSIVENESS	STABLE Based on precedents	REACTIVE Incremental Based on experience	ANTICIPATORY Incremental Based on extrapolation	ENTREPRE- NEURIAL Discontinuous Based on expected futures	CREATIVE Discontinuous Based on creativity
RESPONSIVENESS OF CAPABILITY	CUSTODIAL Suppresses change	PRODUCTION Adapts to change	MARKETING Seeks familiar change	STRATEGIC Seeks new change	FLEXIBLE Seeks novel change

Figure 1. Matching triplets — aggressiveness and responsiveness with turbulence — which optimize a firm's ROI. (Ansoff — McDonnell 1990, 422). (Note: “environmental” as a general concept).

The left-hand column of the figure shows pure operating behavior in which no strategic change takes place. This stable behavior is optimal in a repetitive “environment”. As turbulence rises, so does the aggressiveness of the strategy; and the supporting capability becomes increasingly change-seeking and open to the “environment”. A match between strategy and capability will result in optimal behavior. (Ansoff — McDonnell 1990, 422)

The development of EML of a company could be studied with the concept of strategic aggressiveness and its different levels. *The levels of EML would then be: stable, reactive, anticipatory, entrepreneurial and creative.* The other two concepts could provide a framework for change in EML. The “environmental” turbulence could represent those relevant changes in the business world and society which may have had an effect on a particular change in EML in a company. The concept of the responsiveness of capability could show the general organizational conditions for change in the company.

There is no intention to try to explain the development of EML yet, but just to put it into a perspective. To describe the development of EML of Neste within some framework will have to suffice in this initial research. Each decade from the 1960s to the 1990s will be dealt with separately. First there will be a brief review of some relevant changes in the business world and society during the decade. Then Neste's general organizational conditions for change at that time will be considered. Finally, I return to

the topic: the level of EML-areas in Neste during that particular decade will be defined.

The Sixties

Neste was established in 1948 but production operations, i.e. oil refining, began only in 1957. In the mid-60s the concept of nature preservation was introduced in Finland. This is why it is most convenient to start the study of EML from the events of the sixties. For business enterprises this decade was environmentally free from pressures except for the first environmental law concerning water regulations, which was ratified in 1961. In Ansoff's scale the business world and society were *repetitive* in the sixties.

During the mid-sixties Neste expanded from the Naantali refinery to Porvoo where the scale of the operations was to exceed Naantali's capacity. In the construction of the different stages of the new refinery the most advanced technology was installed in the process. However, there were as yet no environmentally good technologies to choose from.

The President was a typical entrepreneur of the time (see Hajba 1982, 33) who held all strategic management and control in his hands. The organization was structured on the line/staff basis as in the army. The general organizational conditions suppressed change in Neste and according to Ansoff's idea were *custodial*.

At the end of the decade one of Neste's tankers “Palva” ran aground and caused oil

damage. The obvious harm to nature and the great publicity made the President of the company start considering the possibilities of safer sea transportations and protection methods against oil pollution. The need for this new approach was confirmed as the environmentalists arranged a demonstration when Neste's new crude oil carrier "Enskeri" arrived in Finland in the following year.

The President travelled abroad a lot and saw there how environmentalism was being established in societies through laws and government orders and how it affected companies. He also adopted some inventions, e.g. higher chimney-pipes for refinery units in order to decrease pollution in the neighbourhood (and to spread it wider!).

Neste did not have any environmental Strategy during the early sixties because of the lack of the concept of environmentalism in society. By the end of the decade this kind of thinking was about to emerge and Neste began to adopt some environmental Systems and Skills. These two areas were moving towards the *reactive* level of EML while all the other areas remained on the *stable* level. Some implications of an environmental Strategy could perhaps be seen, however.

It seems that the EML of Neste in the 60s corresponded with the level of society as well as Neste's general organizational conditions at the time.

The Seventies

The recession initiated by the OPEC countries' boycott increased the price of oil and made a considerable cut in energy consumption necessary. This did not have much effect on Neste's actual oil refinery business, because the increase in the price of raw-materials could be compensated for by increasing the prices of the products. But it increased the cost of energy used in the production processes.

During the seventies many more national environmental laws were brought into effect and the first international agreements were made. In addition to this the environmentalists became well organized and systematized their actions. Neste was one of their eye-sores. In this way the business world and society of the 70s was *expanding* and somewhat *changing*, too.

The expansion of Neste in Finland and the first steps towards internationalization, particularly in Neste's new area of chemicals forced

the President to decentralize the organizational structure and delegate responsibilities slightly — but he still had the last word in all decisions. Neste's general organization emphasized *production* orientation.

The greatest environmental series of events in Neste in the seventies was the building of waste water cleaning units and sulphur collection units at both refineries. The waste water cleaning units built were based on the most modern biological technology for inland waters' refineries. They cleaned Neste's water emissions almost totally and in this area Neste was well ahead of its time. In fact only now, twenty years later, most other large polluting companies are investing in similar technologies. The investments in residue desulphurization guaranteed that Neste's sulphur emissions stayed well under the official limits during normal operations. These latter units have been modernized from time to time to keep up with the progressively reduced sulphur limits.

These investments made Neste's environmental Systems *entrepreneurial* within the oil refinery line of business during the 70s. The modernization of the Systems required better Skills both to choose and install the new technology and also to run the new Systems in the best possible way. At the beginning of the decade the President had appointed an Environmental Manager who started to build an expert staff department with a laboratory and work hygiene skills. She was soon promoted to Assistant Vice President of Environment and Safety, and she reported to the Vice President of Production. Thus Neste's Skills developed to the *anticipatory* level and its Structure to the *reactive* level.

In the course of these changes Neste's overall environmental Strategy also reached the *reactive* level and was on its way towards the *anticipatory* level. The environmental PR was left behind other Skills but proceeded anyway to the *reactive* level with Symbolic Behavior because of pressure from the more advanced areas. Shared Values stayed still on the *stable* level.

It seems that Neste's EML in the 70s corresponded rather well with the level of society and also Neste's general organizational conditions. Neste's management realized, however, that society was changing rapidly and decided to take precautions by developing technical Systems far more than was required at the time.

The Eighties

The next decade but somewhat less environmental pressure on the companies. By becoming well organized the environmentalists lost some of their creativity and initiative. They were reduced to the status of other organizations as an interest group of the companies. Naturally more environmental laws were put into effect and international agreements were made, but companies learnt how to influence their contents. A great economic boom started and continued for the whole decade. This upheaval made companies concentrate on making money. Society was *changing*, but more of the official initiative than from the environmental groups' actions.

At the beginning of the 80s a new President took charge. While his predecessor was an entrepreneur, he himself acted according to a professional manager's philosophy (see Hajba 1982, 33). Neste was in a fast process of internationalization and growing rapidly. Neste Chemicals was "conquering the world" and the centre of action was changing from oil refining to chemicals. The new President reorganized the old line/staff structure into business groups, divisions and profit centres. The general organizational conditions changed from being production oriented to the *marketing* oriented business structure and operations.

As strategic management became popular in the business world in the eighties it was also adapted to the Environmental Management of Neste. The Assistant Vice President of Environment and Safety drafted an environmental policy for the whole company. It was issued by the Corporate Chairman in 1984. The basic principals of total environmental thinking, initiative, clear responsibilities, activity and openness are still valid at home and abroad.

The President delegated the environmental line responsibilities of the Business Group Executives, Site Managers and Production Managers. At each site an Environmental Coordinator was to act as a local expert in environmental questions. The Vice President of Planning and Development included the overall environmental coordination into his duties. The environmental staff department became a strategic, guiding and assistant organ for the line organization. The parallel history and development of the environmental staff department with the oil refining division made it somewhat difficult for it to adjust to the dominance of the

chemicals group and cooperate in the most efficient way.

The revolutionary changes abroad in environmental laws and practices needed experts to follow up the development. Environmental expertise expanded also to the areas of environmental impact assessments, environmental auditing and international co-operation. Risk analyses were also done and product safety studied at the environmental staff department. The trend for environmentally more acceptable products in some other countries was expected to reach Finland at the end of the eighties and for this purpose Neste started to develop environmentally "friendly" products in its R&D department. Waste disposal was arranged and some recycling systems were installed.

In Neste Chemicals a group for environmental co-operation with representatives from all groups of personnel was established. It proved to be a very successful way for the staff to express its environmental ideas about technological and technical improvements in particular, and to activate the staff in general.

In the eighties environmental Systems were not as *entrepreneurial* as in the seventies but they still were more than just *anticipatory*, like Skills. Strategy and Structure reached the *anticipatory* level while Staff and Symbolic Behavior were striving towards this level. The PR of the Skills lagged behind the others, remaining on the *reactive* level. By the end of the decade some environmental Values sprang up to *react* the emerging pressures from the interest groups.

Again Neste's EML corresponded rather well with the level of society and general organizational conditions. The deviation within the EML areas shows where pressure from society was strongest and where weakest. It may also indicate some opportunities and limits produced by Neste's general organizational conditions.

The Nineties

At the very end of the eighties the economic boom declined and started to change into a period of depression. At the beginning of the 90s the majority of Finnish companies are making losses or considerably reduced profits. Their annual turnover is decreasing. Many companies are in financial difficulties, even going bankrupt. Neste is an exception. During the year 1990 Neste's annual turnover increased by one third, substantial profits were made and

other measurements of business success were well above the average.

On the other hand companies at large have now realized the importance of environmental issues for their business. Their representative organizations promote and coordinate their joint actions on behalf of the extensive environmental cooperation with each other and other organizations. This gradual change of values in the business world is mainly due to the change in the values of the whole society. Although the pressure from the environmentalists was hard in the seventies, in the end they were just a minority group. In the nineties the thoughts — if not acts — of the public are environmentally concerned. In the long run it depends on the environmental image of a company whether it may continue its operations and have a sufficient market share for its products.

In addition to this, business companies as well as society in general have started to approach environmental questions from the global point of view. If in the seventies environmental protection was carried out locally and in the eighties Environmental Management included regional concerns, now at the beginning of the nineties globally oriented Environmental Management and Leadership are becoming dominant. The development of EML incorporates not only quantitative and qualitative elements but also the extent of the perspective which companies are able to comprehend and acknowledge as their territory.

Environmental laws are becoming stricter, international agreements more binding and the need for similar legislation all over the world more pressing. Environmentalists, scientists, governments, economic organizations and companies are gradually approaching each other for co-operation and joint ventures in order to find solutions — or compromises at least — to environmental problems. The most powerful environmental movement at the moment is the adoption of the principals of Sustainable Development. The level of the business world and society has become *discontinuous*.

Neste has been diversifying its operations: at the end of the eighties it started an oil trading business which turned out to be very profitable.

Neste has also joined oil search ventures and hopes that in the future the findings will provide most of its crude oil. The oil group is extending its boundaries to include Scandinavian and Baltic countries. The chemicals group

continues to conquer the world, now mainly in South Eastern Asia. The gas group has very ambitious plans for natural gas and a small separate unit NAPS (Neste Advanced Power Systems) is pioneering in the areas of sun and wind energy as well as electric vehicles. All in all Neste is a rapidly growing and diversifying company.

The structure of Neste's organization was changed in 1990 to meet the needs of the new strategies. Along with decentralization one level of hierarchy was added between the headquarters and the oil refining division to make it identical with hierarchy that chemicals group has always possessed. Many of the earlier headquarters' decisions were delegated to this oil refining group. Structure follows Strategy (compare Chandler 1962). The general organizational conditions are now *strategic*.

The environmental strategy of Neste has now become one of the President's main concerns. Still in the eighties it belonged entirely to the duties of the Assistant Vice President of Environment and Safety. This order has not been changed officially, but in practice there is no longer room for an environmental strategy which would be developed separately from other strategies. It seems to be absolutely necessary to integrate the environmental strategy into other strategies and it will have one of the leading roles in this entity.

The general decentralization of Neste concerns environmental structures, too. More independence is given to Site Managers. The Environmental Staff Department is gradually being divided so that there will be a small strategic and controlling staff unit at the headquarters and the guidance and assistance services will be brought nearer the production operations — and maybe finally integrated into them.

The expert skills and the external connections of the environmental staff department are valuable resources for the development of all areas of Environmental Management in Neste. Environmental systems must be constantly renewed and the applied techniques and methods developed. The instrument of Life-Cycle Analysis is being developed (Loikkanen 1991). Neste is also collecting all the environmental information into a file for each site. Besides this another file is being created: an information packet for the environmental education and training of the employees. The environmental co-operation group in Neste Chemicals has been active in planning employee educa-

tion in this area.

As earlier mentioned, Neste has recently adopted the principals of Clean Technology, Responsible Care and Sustainable Development. This all means that there are a great deal of rules to obey and ideas to follow. They all contribute to the area of Shared Values as well as other areas of EML. The element of Environmental Leadership is gradually penetrating into the environmental philosophy of Neste. It would need a long-term overall promotion campaign or project (like an expanded version of the campaigns in Porvoo) to make EL an active component of Neste's EML practices.

All in all the Systems and Skills of Neste's EML are now in the early nineties rising from the *entrepreneurial* level to the *creative* level. The environmental Strategy has reached the *entrepreneurial* level and the environmental Structure is following right behind it. The Staff and Symbolic Behavior of EML are on the *anticipatory* level while Shared Values and PR of the Skills are just taking the step from the *reactive* level to the *anticipatory* level.

Neste's EML still corresponds with the level of society and general organizational conditions in Neste quite well. Deviation within EML has a poor effect on Neste's general organizational conditions. Therefore much effort is being put into the areas which are lagging behind in order to make them catch up the others.

According to Ansoff's scale the trend in the next decade will be towards a *surprising* society, *flexible* organizational conditions and correspondingly towards a *creative* EML.

From the Sixties to the Nineties

The development of all seven areas of Environmental Management and Leadership from the 60's to the early years of the 90's is shown in figure 2.

It seems that in the sixties the level of EML in Neste was *stable* i.e. there were virtually no strategic (or operational) environmental actions. In the seventies Neste's approach was mainly *reactive* to environmental questions with the exception of the very advanced environmental

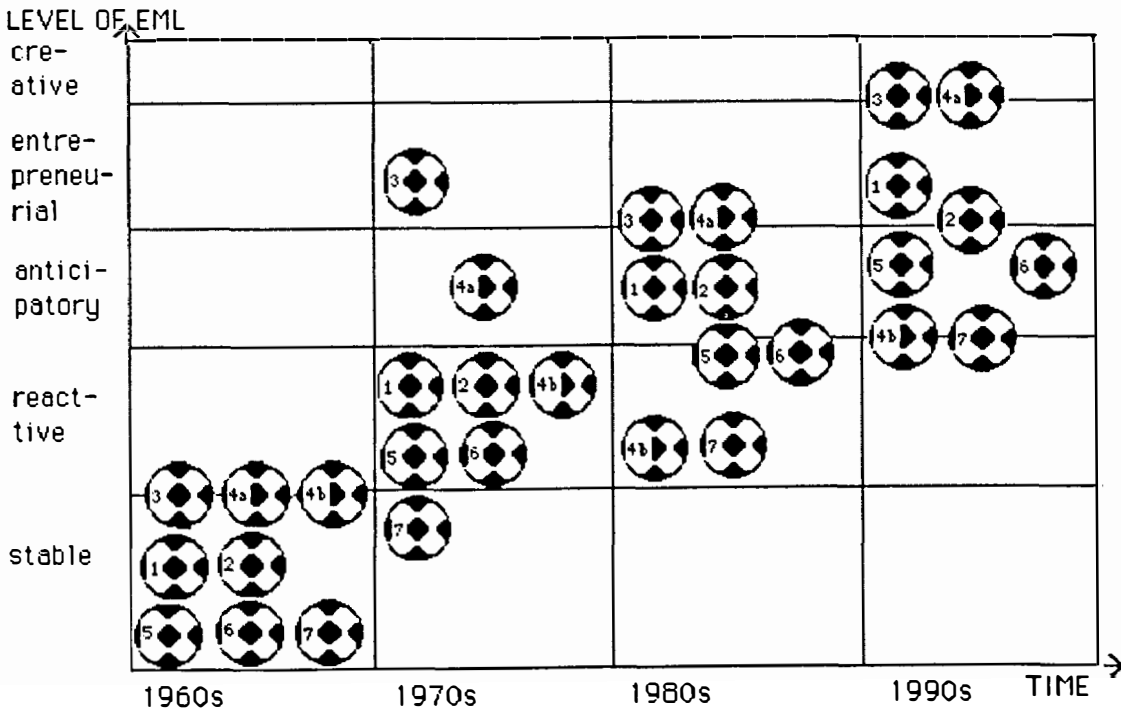


Figure 2. The development of the seven areas of Environmental Management and Leadership in Neste. (1 = Strategy; 2 = Structure; 3 = Systems; 4 = Skills; a = all but PR, b = PR; 5 = Staff; 6 = Symbolic Behavior; 7 = Shared Values).

THE LEVEL OF EML	Stable 1960s	Reactive 1970s	Anticipatory 1980s	Entrepreneurial 1990s (?)	Creative 2000s ?
EM					
EL					

Figure 3. The Development of Neste's Environmental Management (EM) and Environmental Leadership (EL).

Systems and rapidly developing Skills. In the eighties Neste preferred to *anticipate* environmental problems; only PR and Values were left behind. The upward trend continues now in the early nineties, although the pace has dropped. Neste's approach is now either *anticipatory or entrepreneurial* depending on the area: the more EL-dominant areas belong to the first group while some of the more EM-dominant areas are even becoming creative.

The figure shows that there is a trend from the low left-hand corner towards the up right-hand corner i.e. *from the stable level gradually towards the creative level*. There is some deviation among different areas of Neste's EML, and this increases from decade to decade.

In the sixties there were hardly any leadership elements involved in Neste's EML. Their share increased very slowly during the seventies and the eighties. Now in the nineties EL may occupy nearly half of the contents of Neste's EML. This development of Environmental Management and Environmental Leadership in Neste is illustrated by figure 3.

Most of the changes in Neste's EML have happened in accordance with other more general changes in the company and parallel with the development of environmental thinking and practices in Finnish society. Thus Ansoff's idea of matching triplets (see figure 1) seems to be valid when it is applied to Neste's Environmental Management and Leadership.

CONCLUSIONS

The concept of Environmental Management has already become established, but the concept of Environmental Leadership is only being introduced. It seems possible to study both of these from a business administrative point of

view and review them as a whole management system as well as separately, to a certain extent. The 7-S framework provides rather a good instrument to organize this phenomenon which is widely spread across the business activities of a company. In reality the seven areas overlap but in spite of this disadvantage the framework is quite adequate to describe the EML of any company.

The results of another company's EML will not be the same as the results of Neste's EML, though. Every company has its own patterns but as far as Finnish companies are concerned it is possible, even probable that many of the large (state-owned) industrial companies have similar EML practices. This is mainly due to the demands of Finnish society and the cooperation between large industrial companies within their organizations. Many of the basic thoughts, procedures, structures and systems are common to industries throughout the whole of Western Civilization; the interaction between different societies has been increasing all the time.

These same tendencies prevail also in the development of EML. Although Neste has several unique qualities due to its history, ownership and market-dominance (even monopoly in some areas) which make it act differently in some occasions, its basic solutions in all areas of EML at different times reflect the society of that time more than its own individual characteristics. The great emphasis on EM, and its technological Systems and Skills, seems to be predominant in many large companies in Finland. When technology alone becomes an insufficient instrument to reach the intended environmental and business objectives, a more human approach gets its chance in the form of EL.

Ansoff's idea of five levels of strategic aggressiveness gives a refined division of EML.

It is important to remember than he does not say that a company should develop from the stable level to the creative level in any particular order; in fact no change of any kind is expected from a company as long as the level of turbulence does not change. For Ansoff there is no priority among the levels. There is no objective way of saying whether Neste's EML is developing favourably or unfavourably or in which direction it should go. (Environmentalists, authorities and also the representatives of Neste seem to hope for an upward trend, though.) The 7-S framework presupposes, however, that all the seven areas should develop at the same pace. From this angle Neste's EML is not optimal.

The point that Ansoff wants to make is that the level of strategic aggressiveness (the level of EML in this research) should match the other two variables. This kind of detailed explanatory research is still to be done if Ansoff's ideas are to be fully exploited. The material suggests, however, that there has been an overall match between the variables in Neste even though some 7-S areas have deviated from it.

It appears to be possible to generalize the results of the empirical research to management and leadership theories. This conceptual abstraction (Nurmi 1978) or analytical generalization (Yin 1988, 39—40) means that the contents and development of EML follow the same patterns as those of general management and leadership studies. Environmental questions belong to the range of interdisciplinary studies. I hope that the concepts of Environmental Management and Environmental Leadership will become relevant and important parts of General Management and Leadership and they will be welcomed into the domain of Business Administration as well as Economics at large.

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