Innovation and environmental awareness based on the example of the voestalpine Group

The secrets of successful corporate management

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SUMMARY FINDINGS, CONCLUSIONS, RECOMMENDATIONS

One of the main characteristics of market economies is market competition where companies have to deliver and achieve the best possible results amid continuous challenges. It is always worth learning from the best performers. The voestalpine Group is a market leader steel producing company and a world market leader in a variety of segments.

It is characterised by advanced innovation in the fields of engineering, energy management and the protection of the environment, for which it has already earned international recognition and awards. We have made an effort to collect the factors in innovation, research, human resources management, and the protection of the environment that enabled voestalpine Group to achieve outstanding economic success. The voestalpine Group surpasses its competitors in terms of dynamism, the ability to react quickly, flexibility and by employing outstanding experts; furthermore, it also pays special attention to public relations. The company may be a role model to other enterprises, especially in Hungary.

INTRODUCTION

The voestalpine-Group is a driving force in steel production in the world, it has operations in more than 60 countries with over 360 production and sales companies, it owns hundreds of patents, and it is also quality and world market leader in many sectors. Thus it seems to be worth considering the factors that made this company so successful. It is always worth learning from the best and most successful players and voestalpine has already proved its competence.

All five divisions of voestalpine are connected to steel production: steel, special steel, railway systems, profilform, and automotive. The company's headquarters are located in Linz, Austria, functioning as a management holding and it has been listed on the Vienna Stock Exchange since 1995. Management-holdings are flat structures and the subsidiary companies are considerably independent for the sake of flexibility and innovation (*Bühner – Dobák – Tari, 2002; Werani et al., 2006*). The values of voestalpine among other things are flexibility, fast reactivity, dynamism, as well as specialisation, the best experts, expertise and the know-how ensure advantages in competition. Besides the curiosity of the researchers, excellent connections with customers and finding solutions to challenging tasks also move things forward at the company (Table 1).

Table 1

The main indicators of voestalpine-Group

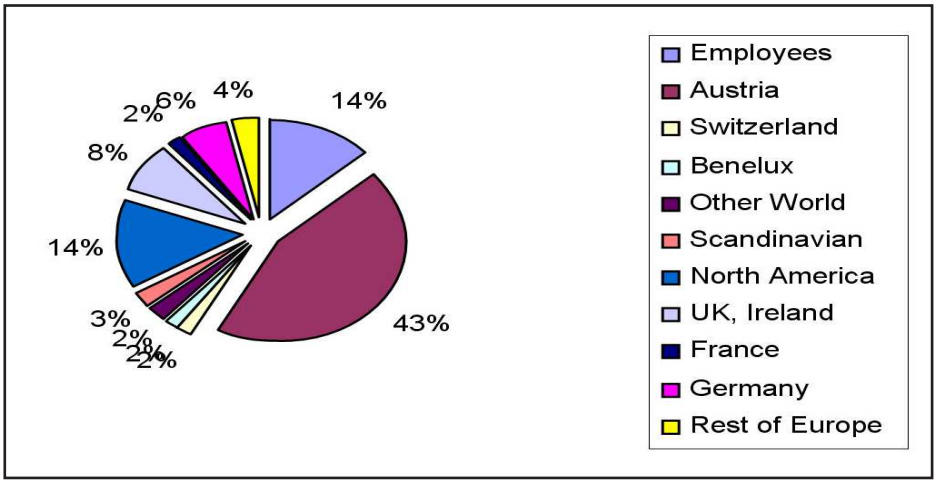
Business year[1]	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Turnover	4 391.9	4 645.9	5 779.1	6 230.6	6 943.8	10 481.2	11 625.3
EBITDA[2]	516.1	549.3	887.7	1 079.0	1 358.6	1 836.5	1 724.2
EBITDA-Margin[3]	11.8	11.8	15.4	17.3	19.6	17.5	14.8
EBIT[4]	223.0	248.3	552.5	724.1	1 011.4	1 152.6	1 016.0
EBIT-Margin	5.1	5.3	9.6	11.6	14.6	11.0	8.7
Earnings/ share (euros)	1.20	1.25*	2.36	3.25	4.76	4.69	3.41
ROCE[5]	n a	n a	15.0%	21.5%	26.2%	13.4%	11.8%
Employees (without apprentices)	n a	n a	22 695	22 918	24 613	41 490	41 216

Source: http://www.voestalpine.com/ag/de.html, own edition

Voestalpine does not only produce and sell internationally but its shareholder structure is multinational accordingly (Fig. 1).

Figure 1

The ownership structure of voestalpine AG



Source: own edition based on http://www.voestalpine.com/ag/de/group/overview/facts.html

[1] Business year is between 1 April and March 31.
[2] EBITDA: Profit from operations before depreciation
[3] EBITDA-Marge: proportion of EBITDA in total turnover
[4] EBIT: Profit from operations
[5] ROCE: Return on Capital employed

Human resources management also includes remuneration and benefits (*Angyal, 1999*). Pre-emption rights are a well known and accepted method (*Heller, 2002*). Managerial share ownership is one way for executives to enhance taking responsibility and to better identify with the company. The possibility for the acquisition of interest in a company is frequently included in the stake-holding structures (*Angyal, 2001*). Voestalpine AG went a step further. The ownership structure shows that 13.5% of the shares are owned by the employees thus they can identify with the company. The economic success of a company is a composition of a number of factors. Of the operations systems of a company (*Chikán, 2003*) we have highlighted corporate finances as an indicator, innovations, human resources, and environment protection.

The review of the good example of the voestalpine-Group – irrespective of the sector – is timely since it can serve as a role model for companies striving for best practice and the company's practices in innovation, environment protection, the use of advanced technology, training of employees, and cooperation should be followed.

INNOVATION

The theory of innovation is a relatively young science the foundation of which was first laid by *Schumpeter in 1939*. According to him the core of innovation is the new combination of the factors of production used during the creation of goods and services.

OECD defines innovation as follows: Innovation activities are all scientific, technological, organisational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations and are necessary to successfully develop and market new manufacturing goods, to utilise new manufacturing procedures and devices or to the introduction of the new approach of certain social services.

R&D embraces three basic activities: basic research, applied research, and experimental development (*Erdélyi, 1993*). This fact also implies that research and development are indispensable in any phase of the innovation process.

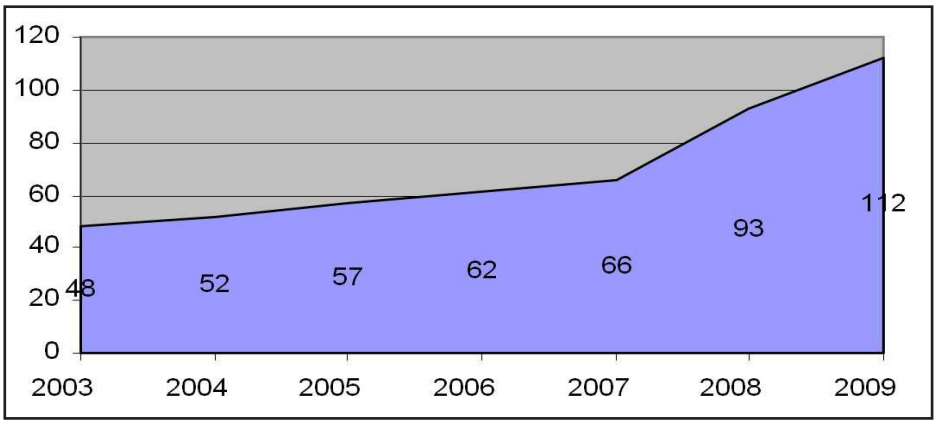
The different cases of innovation manifest themselves in the innovation chain. The innovation chain means the connection of the different elements of a company's activities – marketing, research, development, experimental production, production, and sales – in harmony with the innovation process.

"Innovation begins with the decision of the upper management to introduce the policy of continuous development and determine the applied methods" (*Heller, 2002*). "Technological innovations may improve the expenditures of a company. Companies with advanced innovations can take advantage of lower expenditures in the price competition" (*Bühner et al., 2002*) thus their competitiveness is improved. Innovation may be defined in a number of ways but the strategy of voestalpine-Group is closest to *Porter's (1989)* definition according to which "the core of competition is the implementation of continuous, harmonising developments; the series of small-scale innovations, which may create and support the advantages in competition". Fig. 2 reveals that the expenditures of voestalpine AG on research almost doubled in six years with a continuously rising trend.

Figure 2

Research expenditures for the voestalpine Group

(million Euros)



Source: own edition based on the website: http://www.voestalpine.com/ag/de/group/corporate_responsibility/research_development/facts.html

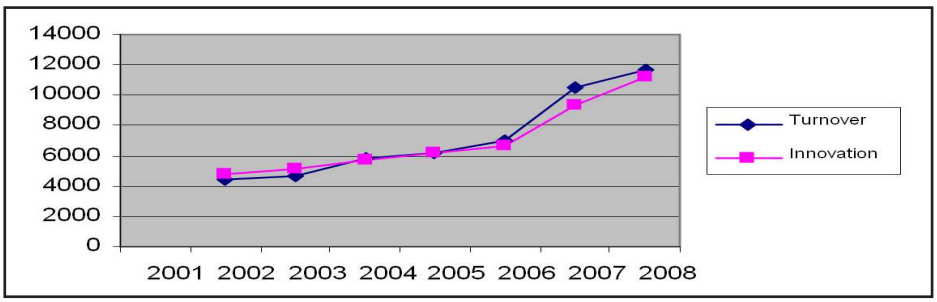
The R&D expenses of the voestalpine Group in the business year 2008/09 came to EUR 112 million, which means that the voestalpine Group has more than tripled its annual expenditures for research and development over the past ten years and it also represents an increase of 20.4% over the previous year. The research ratio (R&D expenses divided by the Group's total revenue) was at 0.9% in the year under review (2007/08: 0.9%); the ratio of R&D expenses to economic value added came to 2.6%. Group-wide, a total of 500 employees are currently working in the segment of Research & Development, which is 1.2% of the total workforce *(http://www.voestalpine.com/ag/de.html)*.

The examination of the ratio of the profits from operations (EBIT) and research expenditures did not yield any exploitable results since it reflected an unsteady decreasing tendency therefore they have been ignored. Nevertheless, the amount of research expenses multiplied by one hundred reveals that the value of turnover and the research expenses are closely related, which is also supported by correlation analysis (Pearson's R = 0,991) (Fig. 3).

Figure 3

Voestalpine AG: Turnover and Innovation (x100)

(million Euros)



Source: own edition (SPSS) based on: "The voestalpine Group in Numbers"

According to EU statistics, of all Austrian companies voestalpine spends the most money on research and development and is among the high-leverage innovators with efficient procedures, projects and programs that place the company's innovativeness above average. For example, in the largest company, voestalpine Stahl GmbH in Linz, two thirds of the products developed are classified as innovative or highly innovative according to an internationally recognized definition. The network of corporate expertise is comprised of roughly 100 different affiliations with national and international universities, universities of applied technologies, research institutions and a number of development partnerships with key customers. The R&D departments are an integral part of the corporate culture in the company. Product and process developments can only flourish in an environment where innovation, curiosity and openness to new methods and procedures are practiced in every area of the company *(www.voestalpine.com)*.

CURRENT INNOVATIONS

The challenges of the future, for example, lie in material properties that meet ever higher demands of the market. Such innovative material properties are found in extremely resilient long-life rails or high-speed railway switches that guarantee safety and optimal comfort, even at a speed of 380 kilometres per hour. Special steels have also been developed by voestalpine for the deepest pipelines in the world. These pipes can withstand more pressure and other influences than any pipe or material ever before used. Pre-mounted plug-in switches can be delivered to any railway construction site in the world and can be installed on site. This is just one of many voestalpine innovations.

Innovation in energy and environmental protection

Voestalpine is a technology leader not only in new materials, coatings, processing methods, but also a benchmark company for energy efficiency and environmental compatibility. Voestalpine is the first steelmaker in the world to replace fossil fuels in the blast furnace with waste plastics and has thus been significantly reducing the CO_2 emissions at the Linz location every year. In the past 30 years, the amount of energy used in steel production has been decreased by roughly 50%. In the past 15 years, energy consumption has been reduced by about 20%.

Current research focus

The cooperation of business and industry and science is the core of the Group's innovation strategy. For example, within the scope of the competency centres set up under the Austrian funding program COMET, several Group divisions in the metallurgy, materials development, and mechatronics segments are working closely with scientific institutes.

By participating in K1-MET (Competence Centre for Excellent Technologies in Advanced Metallurgical and Environmental Process Development), a sustained and effective collaboration between science and industry is being undertaken to accelerate development of the metallurgical principles of steel production. In the next few years, close to EUR 20 million are being invested in this project. In the MPPE project (Integrated Research in Materials, Processing and Product Engineering), materials development is being vigorously pursued. A total of EUR 53 million is being invested in this competency centre to foster the development of new products.

Great importance is also placed on the exchange of knowledge and networking and sharing know-how within the Group across all divisions. The "voestalpine Sy-

nergy Platform 2008," addressed primarily welding. The project "Welding of high-strength steels" is a Group-wide project at the highest and most sophisticated level involving the know-how of all five divisions.

Human resource

Another field of innovation is human resources management. One of the areas of strategic actions is the strategy of corporate resources expansion (*Székely, 2000*). This chapter does not have an outstanding role on the website of the company we believe it is necessary to deal with it separately since according to the rules of microeconomics supply is determined by a number of factors (*Farkasné Fekete – Molnár, 2006*), e.g.

- the decrease in the price of the factors of production (e.g. the price of work);
- technological development: the cost per unit is less;
- the number of suppliers, etc.

The voestalpine Group chose to produce goods that not many companies are capable of making thus it can obviously be considered as a "differentiating strategy" (*Székely, 2000*), and it applies advanced technology and experts. By doing so it ensures significant profit while paying decent sums for work (*Marosi, 1983*), which is a real incentive for the employees to have a stake in the company.

In current modern economies the most typical example of intervention into matters concerning competitiveness is when the state – perhaps together with trade unions – sets a minimal wage level (*Farkasné Fekete – Molnár, 2006*). The principle of fair wages must be mentioned here, which according to the European Social *Charter (1961)* means a wage that provides a suitable living standard both for the employees and their families. Thus the price of the factors of production cannot be lowered below a certain level. The question of what can be done is raised then.

Replacement

One of the answers about how to improve productivity lies – according to Taylor – in the thorough selection and further training of the workforce (*Marosi, 1983*).

The other method also relies in replacement, only in a slightly different way. It is often very difficult for our students to find a place for training because companies are reluctant to train students. They consider it a waste of time since a trainee requires full attention, may be at a loss, and by no means are they efficient. However, this might not be the right approach. Voestalpine AG has a quite different attitude. The most important indicators include "employees – without apprentices", which indicates that there must be a large number of apprentices at the company. The company seems to be good at numbers and is aware of the fact that the unit cost can be calculated by dividing the price of work with the work completed. On the other hand it is also well known that every worker has a learning curve where marginal productivity is continuously improving although it may take months and the indicator is rather poor. It can be easily calculated on the basis of unit price that it is a lot more economical to train the new workforce as an apprentice for less wage and by the time they become real employees for real wages they are likely to be towards the end of the learning curve. Furthermore, this period provides excellent opportunities to gain valuable information about the apprentices and helps select the most talented ones much more accurately than a job interview, thus it is an excellent tool in the selection process.

Voestalpine has the largest practical training centre in Austria (*http://ooe.orf.at/stories/83489/*). Besides, the "Startschuss für Life" programme was launched in 2006 so as to make the company more attractive since it was aware of the fact

that due to demographic tendencies trained workforce will become an ever more valuable asset. These measures are to retain the current workforce in arouse the interest of the younger generation. The company further intensifies trainee programmes and tightens connections with universities for the sake of highly trained workforce. With this method productivity is boosted indirectly, which has always been an important goal of the company (*http //www.handelsblatt.com*).

This example proves that a company must consider long-term effects and act accordingly to establish effective operations and achieve market leader position.

The company's experts pay continuous attention to the changes in the international market and they intervene accordingly. Thus for example changing to renewable energy resources may be feasible without an increase in the energy costs of the company only by considering the price of fossil fuels, changes in the state regulations, technological improvements, and many other factors.

Corporate Governance

According to Ford one of the main points of customer relations is trust between seller and buyer and both parties must be aware of this trust (*Ford, 2003*) and this can be achieved only by fair behaviour.

The Austrian Corporate Governance Code came into force in October 2002. The Code provides Austrian stock corporations with a framework for management and control. The Code aims to establish a system of management and control of companies and groups that is accountable and geared to creating sustainable, long-term value. It is designed to increase the degree of transparency for all stakeholders. The Code is based on the provisions of Austrian Stock Corporation, stock exchange and capital market law, as well as the OECD Principles of Corporate Governance. Since 2002, the Code has undergone a number of amendments.

Companies voluntarily undertake to adhere to the Code. The Management Board and the Supervisory Board of voestalpine AG recognized the Corporate Governance Code in 2003 and have also implemented the amendments introduced since that date. The company observes and keeps not only the compulsory rules but also the recommended regulations. Its annual reports have been approved by independent experts (*http://www.voestalpine.com/ag/en/group/corporate_responsibility/corporate_covernance.html*).

Code of Conduct

The legal and regulatory requirements for voestalpine companies have increased dramatically over the past few years. At the same time, there has been an increase in the number and scope of financial risks, particularly those which arise from corporate non-compliance with legal or other public guidelines. For these reasons, the Management Board of voestalpine AG has decided to establish a Code of Conduct for the voestalpine Group. This Code of Conduct applies to all employees in the Group and is the foundation for proper ethical and legal conduct throughout the voestalpine Group. Special emphasis is placed on the topics of fair competition, anti-trust regulations, corruption, blackmailing, and the acceptance of gifts and conflicts of interests.

Besides corporate communication, industrial secrets, and employee conducts are also addressed. Nowadays there is a question about whether a leading company can be ethical. The answer seems to be that in the long run there is no other choice.

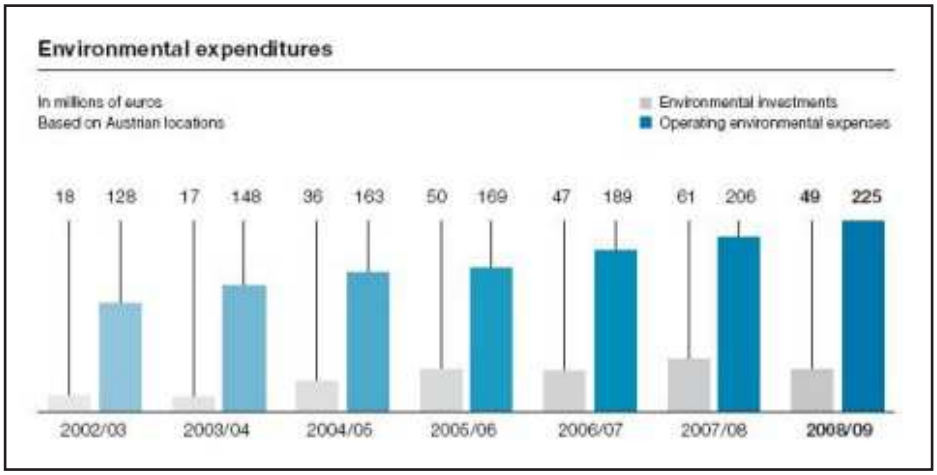
ENVIRONMENT PROTECTION

Long-term fair conduct also involves the protection of our environment. Voestalpine AG has been consistently implemen-

ting the objective of continuing improvement of the environmental standards at all of the Group's production locations for a number of years. The goal is to improve energy and raw materials efficiency as well as further reduction in air and water emissions and the amount of production-generated waste. In these areas the company is an internationally recognised benchmark in the steel industry. To maintain its own high standards an increasing amount is spent on environment protection (Fig. 4).

Figure 4

Environmental expenditures of voestalpine AG



Source: http://www.voestalpine.com/ag/en/group/corporate_responsibility/environment/facts.html

The light blue bars show environmental investments while the dark ones represent operating environmental expenses. Fig. 4 clearly illustrates a continuous improvement.

Having won the Austrian EMAS environment prize as recognition for its outstanding environmental standards the VAE Eisenbahnsysteme GmbH (VAEE) based in Zeltweg was again awarded the international EMAS prize of the European Commission in the field of "green procurement" as a recognition of ecological investment. This is the 17th European prize won by VAEE in the field of HSE (Health, Safety, and Environment). The subsidiary firm won the award as recognition of energy consumption, cooperation projects with suppliers, know-how transfer, HSE areas, and environmentally conscious suppliers. The European Commission has been awarding organisations and companies with the EMAS prize since 2005 for exemplary environmental management and audit. The voestalpine Group has been awarded a number of prizes: VAEE (2006 and 2009), dervoestalpine Schienen GmbH (*Donawitz, 2007*) and voestalpine Stahl GmbH *(Linz, 2008)*.

The company makes all efforts to employ highly trained experts and wants to gain a competitive edge by increasing productivity. It also means that only the necessary workforce is employed therefore it does not improve employment significantly. The operation of a steel producing factory inevitably involves environmental hazards. The efforts of the voestalpine-Group to minimise environmental pollution is commendable.

Current environmental focus

In the Steel Division (Linz site), the testing laboratory was expanded in order to

improve environmental monitoring, and a new facility was built to enable more efficient treatment of washing tower sludge and its subsequent return to the sintering plant. Additionally, the second expansion stage of the system for injection of waste plastic into the blast furnace was successfully put into operation. It further increases the degree of substitution of fossil fuel reducing agents (such as, coke, coal, and heavy oil) by using specially prepared recycled plastics. Other environmentally relevant measures were associated with the reduction of fresh water consumption and wastewater volume in the production, optimization of energy and raw material use in the foundry, another substantial reduction of energy consumption and emissions; elsewhere the focus of environmental efforts was on a reduction of noise and dust emissions. The specially designed newly developed welding additives also contribute to an increase in the efficiency of power generation plants. Surplus electricity is fed back into the public utility grid. It must be emphasized here that all the major production locations in the voestalpine Group all have environment management systems that are certified in accordance with ISO 14001 and/or EMAS.

Environmental Principles of the voestalpine Group

Total responsibility for our products: voestalpine's goods and system solutions are developed and produced in tight cooperation with customers and ecological issues such as long-lasting products, efficient use of resources, and the best possible way of recycling are also taken seriously. The voestalpine-Group is a leading European processing Group and takes its social responsibilities seriously.

Environmental principles of the voestalpine Group are as follows:

- *Holistic Responsibility for the Products*

Voestalpine produces and develops products and system solutions in close cooperation with its customers and suppliers, fully taking ecological demands such as long-life, resource preservation and optimum recyclability into account.

• *Production Method Optimization*

Voestalpine runs its facilities in an economically sensible manner using the best available technology to minimize the environmental impact. Efficient use of raw materials and energy is of prime importance to voestalpine.

• *Establishment of Environmental Management Systems*

Voestalpine facilitates the development of environmental management systems. The core of the systems is the observance of environmental obligations and the maintenance of continuous improvement programs.

• *Employee Integration*

Voestalpine sees environmental protection and continuous improvement as the task of each individual employee at all levels and in all areas of business. Responsible and expert employees ensure the best possible modes of operation of technical facilities and contribute through environmentally aware behaviour to continuous improvement.

• *Open and Objective Dialog*

Voestalpine maintains open and objective dialogs with internal and external interest groups in all issues relevant to the corporate Group's environmental impact. The group-wide exchange of knowledge between all production sites is particularly encouraged.

ASSESSEMENT

The objective of this article was to discover the economic secrets of the most successful companies. The analysis of the voestalpine Group has produced a number of examples that should be considered and the fact that the key to outstanding

achievements lies in a number of factors; besides utmost attention and efficiency is required at all times.

The voestalpine-Group has shown several examples of it:

To begin with the form of the company is management holding, which can best facilitate innovation; besides the flat company structure together with the economically independent divisions the company is made even more effective. Efficiency has been further boosted by sharing know-how amongst the different divisions.

The international operations of the company have been supported by an international shareholder structure. Expenditure on innovation is continuously growing in relation to the turnover of the company. Besides, human resources have an important role as there are strong connections with research institutions and universities and the company has established its own innovation research institutes focusing on developments in a number of areas.

The company pays special attention to its own requirements in human resources and provides apprentice training. Furthermore the company adopted and applies the rules of the Austrian Corporate-Governance Codex. The employees of the voestalpine-Group must abide by the regulations of the company's code of conduct to maintain fair play.

The company also does everything in its power to enhance environmental protection from technological development to organising open dialogues. Its activities and efforts have won international recognition and a number of environmental prizes have been awarded to the company.

Most probably it would take up a considerable amount of time to list al the factors that have led to the success of the company, but there is one very important message of the company that must be highlighted: the range of activities of a company from innovations to environmental protection can only be effective if they become fully integrated in the corporate culture and are pertaining to all the employees.

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