

APPROACH CHANGE: A RESPONSIBLE AUTO INDUSTRY

Szilvia GÄRTNER

DENSO Manufacturing Hungary Ltd., Hungary
sgartner@denso.hu

ABSTRACT

“Enterprises, even national and regional economies, will not succeed unless they promote sustainable development. And sustainable development is only possible in dynamic economies. CSR already contains this double purpose, economic and societal. It is above all a question of creating value for companies and for society at large.” In modern society cars play one of the most important roles, and this is unlikely to change in the near future. The automotive industry has developed spectacularly in the past decade and has become the most important economic sector in many developed countries. According to estimates, over 600,000,000 passenger cars travel the streets and roads of the world today. In my written report and presentation I would like to show, through the example of DENSO Manufacturing Hungary Ltd., how strict the internal world of the automotive industry is and how they are trying to adjust to the variable expectations of the market. In this quote from the DENSO president’s message you can see that future business will be based on environmental consciousness and responsibility: “Amid a shakeup of the automobile industry, DENSO will meet stakeholder expectations by maximizing its collective knowledge and capabilities based on corporate social responsibility (CSR).”

Keywords: automotive industry; sustainable development; corporate social responsibility

THE DILEMMAS BETWEEN BUSINESS AND ITS RESPONSIBILITY

The concept of CSR has a long history, perhaps as long as the history of business itself (Asongu, 2007). A range of terminology is used to signify the social responsibility of business, such as business ethics, corporate citizenship, and sustainable development in addition to CSR.

According to the interpretation accepted by the European Union CSR means that enterprises incorporate voluntary into their strategies social and environmental considerations. While in the 70s Milton Friedman has expressed his opinion about the connection between business and responsibility as follows: *What does it mean to say that "business" has responsibilities? Only people can have responsibilities. A corporation is an artificial person and in this sense may have artificial responsibilities, but "business" as a whole cannot be said to have responsibilities, even in this vague sense (Milton, 1970)* now the focus on CSR has increased in significance. For the first time in many years, the right of business simply to do business is being widely questioned and corporations are working harder than ever to display that they responsible corporate citizens.

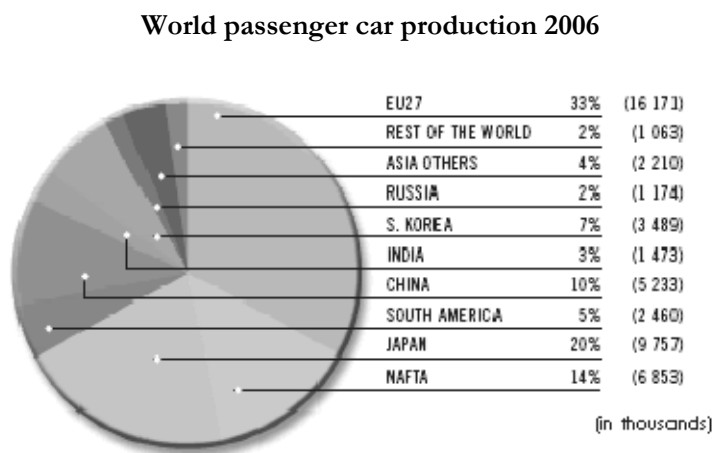
The situation of the automotive sector

In the society of nowadays cars are playing one of the most important role, and in all probability this won’t change in the future as well. The automotive industry has

developed spectacularly in the past decade and has become the most important economic sector in the developed countries. According to the estimations over 600,000,000 passenger cars travel the streets and roads of the world today (www.worldometers.info, 2011).

The ratio and distribution of the world passenger car production is presented by the *Figure 1*. In case if we consider the automotive sector as a country this would be the 6th biggest economy of the world.

Figure 1



Source: www.worldometers.info, 2011

We have to remark that not only the automotive industry itself could achieve this distinguished position but cooperating with the connecting suppliers (such as metal-, plastic-, steel-, glass-, textile industry or even the telecommunication). The production of the approximately 60 million cars provides employment for about 9 million people directly, and the supply chain ensures further 5 million workplaces, which means for more than 50 million people safe job all over the world.

DENSO Corporation is one of the biggest automotive suppliers in the world and in my manuscript I would like to show in which kind of frames this sector operates and how has been adopted to the changeable and renewable expectations of the market.

CSR IN THE PRACTICE

DENSO Corporation

This kind of adjustment had the meaning of the profit maximization and additionally the growing until now. We can read in the book *Toyota method* (Kilker, 2008) that „Toyota is continuously improving the quality of its production, processes and product development. The result is an amazing business history: bigger and bigger market share and increasing benefit against the competitors, who are decreasing their prices; appreciated business results among the business leaders”.

This kind of improvement we can follow in the case of DENSO Corporation, which has been a part of Toyota formerly.

The firm established in 1949-ben in Kariya originally has developed from the electrical and radiator sections of the Japanese Toyota Motors Company Ltd. The word 'DENSO' means electric equipment and produced until 1952 exclusively electric products for radiators and washing machines. The real breakthrough was the diesel cars from 1952, afterwards the company could open its new affiliates at first in the Asian and after in the overseas countries. Actually DENSO has in 32 countries 186 affiliates, and one of the biggest is the Hungarian plant. In 1997 before joining to the European Union Szekesfehervar was chosen from 14 cities as a plant site. The aim was to have a central place, where the Japanese have the possibility to gain market share for their products in the European market. Due to the EU membership DENSO has got several advantages. In the beginning of the investment the company was exempted from the industrial tax, the salary level was very low but on the other hand the qualification of the employees met the DENSO requirements. After the joining there was no custom fee, the wages were even yet lower than in Europe and the products could be sold for „west” price.

As I mentioned in the introduction the auto industry is one of the most dynamic sector all over the world. DENSO has from the establishment in 1949 a special company policy and strategy. In its mission is the defined the following: „its development will be carried out taking into consideration the needs of the environment”. In 1960 the president declared in his message for the employees: „...we are paying attention to the requirements of the environmental standards and carefully consider the interest of the local community....that is the reason why we defined our environmental protection policy, which is mandatory for all DENSO companies.”

From 1967 Denso has tried to reduce the air emission of the parts during the production phase. This kind of endeavour has met completely the legal requirements of that time. In 1992, when environmental protection has got globally bigger role than ever DENSO established the environmental committee and carried out the first Environmental Action Plan. The second Environmental Action Plan published in 1996 included already mandatory tasks and targets for all DENSO plants. The next greatest step was the DENSO EcoVision in 2000, which is defined in the spirit of the sustainable development. This program has four pillars: environmental management or eco-management; eco products; effective energy usage – eco factory; and stronger cooperation with the stakeholders – eco life. At present this program has the second version, the EcoVision 2015, which is made for 10 years and it includes additionally to the environmental protection and sustainability the corporate social responsibility as well.

To prove this commitment to the sustainability DENSO highlights during its research and development activity to increase the fuel consumption efficiency and the cleanness of the emitted gases, resp. to decrease the contribution to the climate change of the air conditional systems built into the cars. To avoid the damage of the stratospheric ozone as first in the world DENSO has developed the 'Freon free' car climate equipment, which uses only CO₂ as cooling materials.

DENSO Manufacturing Hungary Ltd.

DENSO Manufacturing Hungary Ltd. (DMHU) as a part of the DENSO Group has been operating in Hungary since July 1997 (*Figure 2*). The two main shareholders of the company are DENSO Corporation and DENSO International Europe B.V. with a proportion of 70% and 30% ownership, respectively. In Hungary, this is the first investment of DENSO, while in Europe our company is the fifth manufacturing plant. The plant which was established with an investment of 75 million € is located in the Sóstó Industrial Park in Székesfehérvár. The Japanese management selected the town from among 14 European cities.

Figure 2

The Hungarian plant



Source: DMHU

The operation of DMHU is based from the establishment onwards on the Environmental Action Plan and from 2001 on the EcoVision. The operation of the company can be divided for three milestones: the first period was about the environmental protection and took from the establishment in 1997 until 2001. The second period took from the first sustainability report 2001 till 2008. In 2008 the Corporate has required from the affiliates to incorporate into their strategy the corporate social responsibility.

The period of the environmental protection

DMHU has two main lines of activities. One product line comprises diesel products, especially diesel distributor pumps. In 1999 the mass production of the traditional ECD-V5 type pump had started at our site.

The following technological development and the increasingly strict environmental regulations made DENSO designing a Common Rail System (collector tube electronic distributor system), which makes it possible to reduce the level of emission of diesel cars. This system is unique in the world not only because it feeds 1800 bar pressure into the delivery tube but also because it was certified as an environmentally friendly car industrial product in Japan. In our plant its production began in December 2002.

The other group of products consists of System Control Components (SCC). With these components the different features of the engine (fuel consumption, emissions, and moment performance) can be modified. In this way it is possible to combine efficiently, economical and environmentally friendly operations.

The first measurement concerning the environmental protection was the introduction and certification of the 14001 system in November 1999, following this in 2000 was published the first report, which summarized the environmental indicators and the future targets for the stakeholders. Among the targets there was a requirement for all manufacturing plants to reduce the waste below than 50% of the basis year 1999.

A profitable connection on the line of sustainability

In June 2001 as an improvement of the existing ISO 14001 system the environmental performance evaluation according to ISO 14031 was introduced (Figure 3). This system contains already specific indicators and the CO2 equivalent of the energy usage appears also at first. This comprehensive evaluation provided a realistic view about the changes and made possible to introduce corrective and improvement actions. Since the introduction the whole system was reworked and actually the table contains already sustainable indicators (Figure 4).

Figure 3

Environmental performance evaluation ISO 14031 (1999)

Graphical representation		Protection	Measureme nt	Value						Weight	Index					score '99	score '00
No.	Sign	Index		1999	2000	2001	2002	2003	2004		0	1	2	3	4		
Basic data																	
I.	Production I		thousand pcs	30	140	210	225	n.a.	n.a.								
II.	Production II		ton	255	845	1 365	1 463	2 583	3 271								
III.	Sales		billion HUF	2,43	8,68	13,02	14,69	32,98	43,94								
IV.	No. of employees		person	440	540	560	850	1900	2200								
Input										75							
A.1 Materials				268	150	35	15	14	210	30							
1	A.1.1 Applied DENSO designated materials		kg	Not detected	150	35	15	14	210	7	>150	150-100	99-50	49-7	6-3	3	n.a.
2	A.1.2 Reused packing material ratio		%	15	20	35	42	45	57	4	>100%	>100%	99%	103%	105%	107%	
4	A.1.3 Used hazardous substances		ton	124	194,6	375,9	369,8	351,4	698,54	4	It is senseless to calculate an index, but there is a chart for presentation of the quantitative changes						
5	A.1.4 Hazardous substance ratio		kg/pc	4,13	1,39	1,79	1,65	1,32	1,63	4	>100%	This can't be given	This can't be given	This can't be given	<100%		
6	A.1.5 Mercury and Cadmium content of the product		ppm	n.d.	n.d.	n.d.	n.d.	9,03	9,03	5	45<	45-30	29-20	19-10	This can't be given	100%	n.a.
7	A.1.6 Lead content of the product		ppm	n.d.	n.d.	n.d.	n.d.	43,1	43,1	3	400<	399-300	299-200	199-100	This can't be given	100%	n.a.
8	A.1.7 Hexavalent Chromium in the product		ppm	n.d.	n.d.	n.d.	n.d.	0	0	5	200<	199-150	149-100	99-50	This can't be given	100%	n.a.
A.2 Energy										30							
9	A.2.1 Energy consumption ratio		kWh/ sales Mln.HUF	370,4	161,3	133,9	136,3	134,82	176,5	6	>100%	This can't be given	This can't be given	99-100%	This can't be given	<99%	
10	A.2.2 Gas consumption used for heating		m3/ product t	1732	673	418,5	304,5	300,9	326,8	5	>100%	100-1	100%	This can't be given	>100%	95-99,9%	<98%
11	A.2.3 Gas consumption used for production		m3/ product t	1730	556,7	429,2	398,8	437,6	475,9	7	>100%	100-1	100%	This can't be given	>100%	95-99,9%	<95%
12	A.2.4 Electricity consumption used for lighting		kWh/ product t	2487	826,7	535,4	272,2	281,5	326,8	6	>100%	100-1	100%	This can't be given	>100%	95-99,9%	<95%
13	A.2.5 Production electricity consumption ratio		kWh/ product t	10028	7005	4441,5	5152	5743,5	6655	6	>100%	100-1	100%	This can't be given	>100%	95-99,9%	<95%
A.3 Water										15							
14	A.3.1 Drain water and waste water recycling		m3	21,14	4,99	3,48	3100	1,75	1,93	4	2	2-3000	2001-18000	18001-20000	20001-20000		
15	A.3.2 Drinking water usage ratio		m3/ product t	64,7	51,4	29,23	26,1	20,9	30,1	4	>100%	100-1	100%	This can't be given	>100%	95-99,9%	<95%
16	A.3.3 Water consumption ratio by annual rainy water quantity		%	n.d.	n.d.	45,9	50,8	52,3	57,1	2	>100%	This can't be given	This can't be given	>100%	This can't be given	<100%	n.a.

Source: DMHU

Figure 4

Environmental performance evaluation ISO 14031 (2010)

Index	Measurement	GRI indicator	2009	2010	2011	2012	2013	2014	2015	Profikon	Relative index	measurement	-I	0	I
Basic data															
Production	ton									oztlop	0				
Sales	million EUR									oztlop	0				
No. of employees	person	LA1								oztlop	0				
Materials															
Packing materials	ton									oztlop	Relative packing materials	ton EUR	more	"previous year	less
Processed packing materials ratio	%	EN27								oztlop	Processed packing materials ratio	%	less	"previous year	more
Raw materials	ton	EN1								oztlop	Relative raw materials	ton EUR	more	"previous year	less
Hazardous substances	ton									oztlop	Relative hazardous substances	ton EUR	more	"previous year	less
Lead content of the parts	ppm									oztlop	0			"previous year	
Energy															
Electricity consumption	MWh	EN4								oztlop	Relative electricity consumption	MWh EUR	more	"previous year	less
Gas consumption	m ³	EN3								oztlop	Relative gas consumption	m ³ EUR	more	"previous year	less
Gas consumption for heating ratio	m ³ /product ton									oztlop	Gas consumption for heating ratio	m ³ /product ton	more	"previous year	less
Gas consumption for production ratio	m ³ /product ton									oztlop	Gas consumption for production ratio	m ³ /product ton	more	"previous year	less
Electricity consumption used for lighting ratio	kWh/product ton									oztlop	Electricity consumption used for lighting ratio	kWh/product ton	more	"previous year	less
Electricity consumption used for production ratio	kWh/product ton									oztlop	Electricity consumption used for production ratio	kWh/product ton	more	"previous year	less
Renewable energy	kWh									oztlop	Relative renewable energy	kWh EUR	less	"previous year	more
Renewable energy ratio	%	EN6								oztlop	Renewable energy ratio	%	less	"previous year	more
Water															
Communal water consumption	m ³	EN3								oztlop	Fajlagos vírfelhasználás	m ³ euro	more	"previous year	less
Industrial water consumption ratio	%									oztlop	0				
Waterbase usage	m ³	EN3								oztlop	0				
Index															
Index	Measurement	GRI indicator	2009	2010	2011	2012	2013	2014	2015		Relative index	measurement	-I	0	I
Output															
Products															

Source: DMHU

In 1997 United Nations Environment Programme (UNEP) and Coalitions for Environmentally Responsible Economies (CERES) put forward a proposal for standardizing the sustainability reports and the Global Reporting Initiative (GRI) was established. The GRI guideline 2002 makes possible to compare for companies their environmental, economical and social results and performances with other participants on the market. The first sustainability report of DMHU is also based on that guideline and was certified by KÖVET Egyesület.

From 2002 till 2006 was carried out the life cycle assessment according to the ISO 14040, which analysed both diesel and SCC products partially from the suppliers through the production. The main parameters of the analysis has been put into the SIMAPro and GABI softwares by KÖVET and the resulted summary has been sent to the design centres of the Japanese headquarters. At the turn of the millennium one of the newest mandatory elements was the zero emission (100% recycle or reuse of the industrial waste) in the EcoVision. DMHU achieved this result after two years in 2003; and the 270 tonnes of solid industrial waste is recycled by special waste contractors.

At the end of 2003 an overall Energy Survey was started with Hungarian Cleaner Production Center (ITMK) together. This resulted the reconstruction of the

exhaust gas system of the die casting area, the reduction of the used pressed air and a solar system (50 m² surface) was established, which can provide about 850m³ social hot water yearly.

To reduce drinking water usage from 2002 there are two wells on the plant sites, which provide totally 40.000m³ water for sprinkling.

The Japanese government issued in 2002 the environmental accounting guideline for identifying the environmental expenses and benefits, which was introduced in some of DENSO factories. Unfortunately the Hungarian legal requirements hasn't made possible to introduce this system.

In 2008 an overall CO² analysis has been carried out to make easier the emission reduction.

Operation in the spirit of responsibility

It is true that the environmental program of DMHU contains the environmental consciousness local school program, but till 2008 this was a part of the environmental activity still not CSR. The Corporate defined and prepared the Code of Conduct in 2006 and established the central CSR committee. The expanding of this program for the affiliates has taken till 2008. In autumn of 2008 DMHU established the local CSR committee, which centralized the running activities – energy saving, school program, university lectures, summer practice, family day – managed by several departments and gave additional tasks as well (support local NGOs; DENSO Found).

At least let me finish my work with a citation, which shows that due to the economical crisis we have to work consciousness and responsible to meet every requirement of the sustainable market: „the aim is not to sell more and more cars, but to keep order in the world, to harmonize the needs of the Earth and the industry. Now it is time to concentrate for the quality and for the environment...for the expanding we have time late” (*Akido*, 2009).

CONCLUSIONS

Before drawing the conclusion from the presented case study I would like to make you known the recent message of the DENSO Corporation President and CEO about the social responsibility of the global company.

Streamlining and building a structure for a future growth

As the automobile industry undergoes immense change, it is essential to establish a strong corporate structure capable of sustainable growth in order to meet the expectations of stakeholders while also fulfilling our responsibility to society. To achieve this goal, DENSO has been pushing ahead with two major groupwide initiatives since 2009.

The first concerns streamlining operations via a comprehensive review of capital expenditures and other expenses. All operations were stopped at respective workplaces on February 20, 2009 so that a sense of crisis could be shared at all business sites and to allow for dialogue among all employees on how to increase

efficiency. Since then, we have expanded concerted efforts to eliminate waste based on the slogan "If I change, so will DENSO". This in turn has been the key catalyst behind improved profitability. The second initiative concerns building a structure for future growth. This entails accelerating technological innovation to help resolve worldwide issues such as global warming, resource depletion and atmospheric pollution. We are focusing in particular on R&D to improve internal combustion efficiency, make hybrid components smaller and lighter, and produce plant-derived materials and fuels. We are pushing forward with the establishment of R&D systems in each country and region in which we operate (*Katoh*, 2010).

We could see in the mentioned above how difficult is for a profit oriented company to find a connection between its profile and the social responsibility. In one respect I can agree with Friedman's onion: „...In a free-enterprise, private-property system, a corporate executive is an employee of the owners of the business. He has direct responsibility to his employers. That responsibility is to conduct the business in accordance with their desires, which generally will be to make as much money as possible while conforming to the basic rules of the society, both those embodied in law and those embodied in ethical custom.” In my interpretation this means that among the stakeholders of a market oriented enterprise there is a priority ranking yet. I am sure that as the market changes this priority ranking will be also changed. We could see on the example of DENSO history that before the 'CSR era' was the environmental protection the focus point of the company's R&D activities. Now the environmental protection is one the basic point in the business strategy.

For todays the reason for the existence of Corporate Social Responsibility is not discussed any more (*Tóth*, 2007), and I agree with this statement. Concerning my studies and the literature relating to CSR, I don't see that the real role of CSR is determined clearly. I didn't see any common definition or tool for defining or implementing CSR. On the other hand I see the endeavour of the companies to build this new tendency into their strategies. In the future I think the companies will hold their main roles in the economy and if they assign importance to CSR like earlier to the environmental protection then it will be also a part of the daily challenge of the global economic market.

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