

# Changing corporate culture within the European lead/acid battery industry

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## Abstract

Recent economic and political factors have had a strong influence on the lead/acid battery industry in both West and East Europe. Since the publication in 1989 by *Batteries International* and The Lead Development Association of a map of European battery factories, the number of battery companies has declined. By 1992, a significant shift had taken place in the share of the lead/acid battery market in Europe with the result that a few companies came to influence a major proportion of battery production and sales. The reasons for this relatively fast structural change are examined. Under the pressure from continuing internal and external forces, likely outcomes for battery business in Europe are proposed as the lead/acid industry changes to meet new challenges.

## Introduction

Following many years of corporate stability, the European Lead Battery Industry is busy changing itself to meet many new challenges. New alliances are being formed. New companies are being born, some prosper, some do not. A few companies that have been a long time in the battery business are losing their commercial identity, or even passing into history.

- What has caused these changes?
- Who are the winners and losers?
- What is likely to happen in the near future?

To help answer the first two questions, a view will be given that is based on available information and observations. Regarding future changes in the industry, only likely outcomes can be postulated. Nevertheless, one matter is certain: more structural changes are likely to occur, as the enthusiastic industry consolidates and builds on its proven track record of making reliable, 'green' and cost-effective batteries to meet customer, worker and shareholder expectations. As can be seen from Fig. 1, the general economic activity in the main European countries has been, and continues to be, at widely different rates of growth. The near-term outlook for growth in the major economies in Europe ranges from poor to encouraging.

## Western Europe

Western Europe extends from the north cape extremities of Norway and Finland to the southern tip of Spain and the Straits of Gibraltar, together with the foot of Italy and the mountainous island of Sicily. On the West, there is the delightful

Real GDP, 1988 quarter 4 = 100

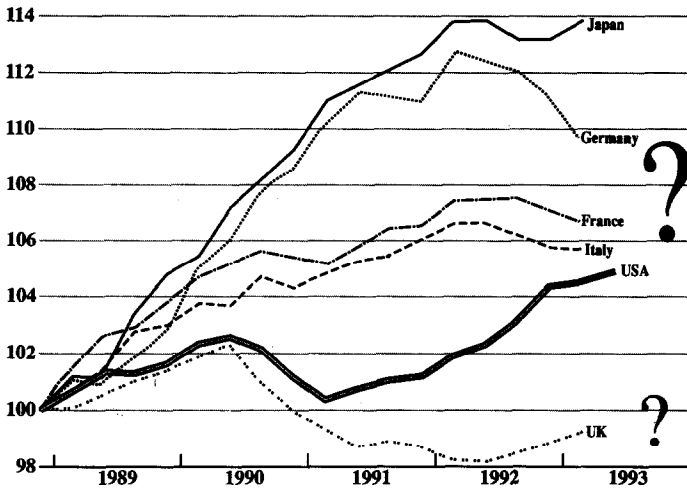


Fig. 1. Economic activity in the main European countries.

countryside of Ireland and, for today, the eastern boundary of Europe is a way line along the western borders of the former Socialist countries of Poland, Czechoslovakia, Hungary, and the former Yugoslavia.

Western Europe has a land mass of 3.6 million km<sup>2</sup>, which is about twice the land size of Indonesia. The region consists of 17 countries, 12 in the European Community and 5 others. Total population is about 373 million people who, between them, own and operate 162 million cars, trucks, buses and farm tractors. That is, on average there is one vehicle for every 2.3 persons. Vehicle production until the recent down turn was running at close to 13 million vehicles per year.

All these people and vehicles create a substantial market for lead/acid batteries. The automotive battery production of about 48 million units a year meets an original equipment (OE) need of 13 million batteries and a replacement market of 35 million. In addition, several million batteries are imported and exported. The production and use of electric forklift trucks, a plethora of specialized off-the-road electric vehicles, together with some 20 000 low-performance and some 4000 medium-performance road electric vehicles, create a market for 4 million traction cells per year.

Europeans have a great propensity for talking and communicating with each other and with the rest of the world. There are about 200 million telephone subscribers throughout the region. The battery requirements for telecommunications and the related stand-by for computers, power stations and hotels is substantial. Sales of specialized telecom and stand-by batteries are running at about US\$ 570 million per year, and are growing. In comparison, the growth in both the automotive and traction markets is flat at this time. A major initiative between the lead industry, battery makers, research institutions (including universities) and the Community Authorities in Brussels is under way to accelerate the early development of an advanced lead/acid battery for electric-vehicle use. There is much pent up demand for electric vehicles in Europe. BMW in Germany, for example, has just unveiled their concept version of a new battery electric hybrid mini car. Commercial production is scheduled for 1996/1997.

The battery industry in Europe uses about 850 000 tonnes of lead each year. There are eight major lead manufacturers in Europe that, together with four major

lead importers, meet this demand. With a lead/acid battery recycling rate of about 95%, about 50 to 55% of battery lead comes from secondary smelters. As in the USA and the Far East, in Europe there is a strong trend to use advanced alloy technology for the manufacture of maintenance-free, long-life batteries.

Methods of battery sales and distribution vary widely from one country to another. With the exception of the battery companies themselves, there is no pan-European marketers of lead batteries. In France, UK and Germany, however, mass marketing of brand-label batteries is a growing business and, in time, one or more major independent marketers of batteries could emerge.

### Times past

Historically, the battery industry in Europe has grown up based on small-to-medium sized businesses. These are usually family owned and serve a local need. Back before World War II, however, several substantial battery companies had developed, such as the VARTA-Quandt Group, ESB, Tudor and Exide. Post war, due to fears of monopolistic tendencies, the Authorities initiated steps to curb the growth of the major companies. During the last 30 years or so the battery industry in Europe has steadily grown as a result of heavy investment in equipment and technology to meet the increasing market for existing and new uses.

In 1989 '*Batteries International*' and the Lead Development Association (LDA) published a map that listed 138 battery companies in the 17 European and 4 other countries. Soon after publication, significant changes began to take place within the structure of the battery industry. In 1992, a new battery map and companion directory names and addresses were published by *Batteries International* and the LDA. Table 1 summarizes the shift in market structure that has taken place in Europe during the past five years.

### Causes and constraints

We may have to wait until the history of the battery industry is written to understand fully the reasons for the changes that are currently taking place. In the opinion of some experts, the main reasons include:

- a real move within the European Economic Community countries to form a single market
- inauspicious investment in North and South America which drained resources from core activities
- profits, that many battery companies had historically enjoyed, began to vanish as inflation and other economic factors took their toll, especially for those companies who had borrowed heavily to fund expansion in the late 1980s
- new lead alloys and innovative battery chemistry
- the rapid change taking place in Eastern Europe and the emergence of low-cost, market-driven economies
- overcapacity in automotive production

Although much is said about the 'global market' of the battery industry, the market in Europe differs from that in North America and the Far East in several ways. These are as follows:

(i) Average battery life is over 60 months. This has obvious implications for the manufacture and marketing of replacement batteries. In most European countries, the

TABLE 1

Market shares of the main lead/acid manufacturers in Europe

1988			1992		
Company	Country	Market share (%)	Company	Country	Market share (%)
VARTA	D	18	CEAC	I/F	27
CEAC	F	8	VARTA	D	22
Chloride	GB	8	Tudor Spain	E	16
Tudor Spain	E	7	Hawker Siddeley	GB	10
Hawker Siddeley	GB	6	FIAMM	I	5
Magneti Marelli	I	6	Hoppecke	D	4
FIAMM	I	5	DETA	D	3
Neste	SF	5	AC/Delco	US	3
Bosch/Femsa	D	4	Yuasa	GB/J	3
Hoppecke	D	4	Jungfer	AUT	1.5
Sonnenschein	D	4			
Hagen	D	3			
DETA	D	3			
CFEC	F	3			
Yuasa	GB/J	3			
AC/Delco	US	2			
Jungfer	AUT	1.5			
Tudor Belgium	B	1.4			
Total		92	Total		94.5

manufacturers brand labels predominate. Mass marketing of brand labels exists, but unlike North America, it has not made major inroads into the established pattern of battery distribution and selling. Neither, as yet, has the concept of the battery specialist, an approach that is proving to be so effective in winning an increasing share of the replacement market in the USA. Table 1 shows that Europe, historically, has a robust OE demand for batteries.

(ii) In the 1980s, business opportunities increased rapidly for batteries in the traction, stand-by and automotive sectors. The result is that today there is 20 to 100% production overcapacity, especially with automotive batteries, if one allows for additional shift working. Now that market growth has slowed, companies are seeking to improve profitability by increasing productivity and reducing the costs of battery distribution, marketing and sales.

(iii) Also, in some cases, expansion was carried out using loan finance rather than internal cash generation with the result that some companies have become financially non-viable. Balance-sheet problems have resulted in company mergers.

(iv) Although there is a Common Market in Europe, retail battery prices vary considerably throughout the region. The reasons are many, but probably the most important are the number of small battery makers that are still operating, especially in Italy and the UK. They have low overheads and generally sell their product near major towns. Their activities depress market prices for all.

(v) The buying public do not perceive batteries a value-plus item, neither are they seen as a product with particular technical attributes, such as large cold-cranking

amps (CCA) that advertisers use to big effect in the USA. Thus, sellers have a hard job of persuading car owners to pay a good price. In many ways, lead/acid batteries are perceived as a low-tech commodity item.

(vi) Batteries tend to be distributed through a multilevel distribution system that some consider cumbersome and expensive. Any profit in the product is reduced by the complexities of the distribution process. The result is that margins tend to be small and, consequently battery makers do not generate meaningful profits to plough back into the business.

The structural changes that have taken place reflect normal commercial activity for companies to become more efficient by forming larger, but fewer, operations. This trend is helping the new 'giants' in the industry justify the high cost of installing new technology and production equipment and associated environmental systems.

The drive to reduce work-in-progress by just-in-time delivery means that battery makers need to look closely at the geographic location of their plants, particularly for the OE market.

TABLE 2

Market differences for automotive batteries

	Europe	Asia	USA
Original equipment (%)	20	35	15
Replacement (%)	80	65	85
Battery life (months)	60+	28?	36
Forecasted market growth (% per annum)	1.2	3	2.5

### Present times

As can be appreciated, individual companies have perceived the opportunity for corporate change and development in different ways. For example:

- the aggressive have grown by acquisition
- some have balked at the apparent problems and opted out
- others have streamlined their operations and stayed in business much as before
- finally, there are those who have just faded away and gone out of business

In spite of many investigations, only a few companies have started up new factories to make batteries on a greenfield site.

During the last few years there have been many mergers and acquisitions within the industry. CEAC (France) has emerged as a major international battery Group (Table 3); effectively it controls the previous lead/acid battery operations of the former CEAC, CFEC, CMP (UK), Magneti Marelli (Italy), Sonnenschein (Germany) and Accumulateur Tudor (Belgium). The new CEAC owns some 15 factories with total battery sales turnover of US\$ 840 million per annum. In a similar way, the VARTA Group (Table 4), that has assimilated the former production facilities of Bosch Battery in Germany and Spain as well as BAE in 'East' Berlin, continues to be a market leader with a battery sales turnover of about US\$ 825 million from 13 factories in Europe.

Vying for third place is Tudor (Spain) who is busy rationalizing into a homogeneous and potentially powerful battery group that is based on the former assets and business

TABLE 3

Battery plants operated by CEAC

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Accumulateurs Tudor SA, Grez Doiceau, Belgium
Sonnenschein Akkumulatorenfabrik GmbH, Berlin, Germany
Sonnenschein Akkumulatorenfabrik GmbH, Bidingen, Germany
Sonnenschein Akkumulatorenfabrik GmbH, Weiden, Germany
CEAC, Auxerre, France
CEAC, Lille, France
CEAC, Nanterre, France
CEAC, Nimes, France
CEAC, Vierzon, France
Compagnie Française d'Electrochimie, Outarville, France
Compagnia Generale Accumulatori SpA, Casalnuovo di Napoli, Italy
Fabrica Accumulatori York, Fumane di Valpolicella, Italy
SAEM SpA, Monza (MI), Italy
Sinac, Romano di Lombardia, Italy
CMP Ltd., Bolton, Lancs, UK

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TABLE 4

Battery plants operated by VARTA Batterie AG

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OFA Akkumulatoren GmbH, Vienna, Austria
VARTA Batterie AG, Hagen, Germany
VB Autobatterie GmbH, Berlin, Germany
VB Autobatterie GmbH, Hannover, Germany
VB Autobatterie GmbH, Hildesheim, Germany
Akkumulatorenfabrik, Berga GmbH, Rastatt, Germany
VB Autobaterias SA, Burgos, Spain
VB Autobaterias SA, Guardamar del Segura, Alicante, Spain
VB Autobatterie SA, Le Grand Quevilly, France
VARTA Batterie Industriali SpA, Villanova Sull Arda (PC), Italy
VB Autobatteri AB, Hultsfred, Sweden
VARTA Batteri AB, Hultsfred, Sweden
Akkuteollisuus Oy, Espoo, Finland

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activities of Tudor (Spain), Tudor (Portugal), Hagen (Germany), Tudor (Sweden), and various smaller battery makers in Norway, Finland and Austria that were previously owned by the Neste Group (Table 5).

For reasons beyond the scope of this paper, the well-known Chloride Battery Company of the UK has been essentially broken up and, today, the company is not a meaningful battery player in Europe. Ownership changes in the former Chloride facilities, however, have helped other companies become major players. BTR Hawker Battery in the UK is emerging as a large multinational battery maker with extensive production facilities in France and the UK (Table 6). Hawker now owns and operates Tungstone, Oldham Batteries, Oldham-Crompton, the former facilities of Chloride Industrial Batteries in Manchester, Oldham (France), and the UK arm of Gates Energy Products.

Gemala-Jakarta and other investors, some years ago, secured control of the Chloride Exide battery factory and business on the outskirts of London next to the large Ford

TABLE 5

Battery plants operated by S.E. del Acumulador Tudor

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Elbak Batteriewerke GmbH, Graz, Austria
Hagen Batterie AG, Berlin, Germany
Hagen Batterie AG, Kassel, Germany
Hagen Batterie AG, Soest, Germany
Tudor, Azuqueca, Spain
Tudor, Hernani, Spain
Tudor, Malpica, Spain
Tudor, Manzanares, Spain
Tudor, Zaragoza, Spain
TS Batteries, Fougères, France
Tudor Hellenic, Amarousio, Greece
Tudor Sonnak A/S, Horten, Norway
Soc. Portuguesa do Acumulador Tudor SA, Lisbon, Portugal
Aktiebolaget Tudor, Nol, Sweden
Pakkasaku Oy, Vantaa, Finland

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TABLE 6

Battery plants operated by BTR/Hawker

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Semelec SA, Zamudio (Vizcaya), Spain
Oldham France, Arras, France
Hawker Energy Ltd., Newport, Gwent, UK
Oldham Crompton Batteries Ltd., Manchester, UK
Tungstone Batteries Ltd., Market Harborough, UK
Chloride Industrial Batteries Ltd., Manchester, UK

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car factory at Dagenham. Under new management, Gemala-Exide continue to be a brand leader in the UK automotive-battery market and use products made in the UK and imported from low-cost facilities in Indonesia.

FIAMM, the second largest battery company in Italy, has recently bought control of Jungfer-Baren Akkumulatoren in Austria. FIAMM, together with GS from Japan, have built a new factory in Italy to make a range of recombinant, small, lead/acid batteries.

Other major players in Europe include Hoppecke with three factories in Germany and the recently acquired automotive battery plant in Zwickau near Dresden.

CEAG, partially controlled by the Quandt family, controls the substantial battery operations of DETA and MAREG in Germany, as well as Lead Batteries in the UK and DETA in Portugal. The last mentioned company was owned previously by Sonnenschein.

Some years ago, a joint venture was formed between Lucas (UK) and Yuasa (Japan) to operate the former Lucas automotive battery factory in Birmingham, UK. Today, the factory is producing over 2 million batteries and is one of the largest in Europe.

About 12 years ago, Delco Remy, from the USA, built the first factory in Europe to make lead-calcium maintenance-free batteries with expanded metal grids. Today, the Delco factory at Sarreguimines (France), close to the centre of a significant

percentage of European vehicle production, makes on one site more automotive batteries than any other company in Europe.

Although several battery companies have died a commercial death, new ones have been born. Some like BIG and Yuasa in Wales prosper, have grown fast and are now major brand leaders.

Some years ago, several European battery companies acquired battery-making operations in North and South America. These adventures tended to drain resources from the core business in Europe. Profits did not flow as easily as expected from the 'New World'. Most companies have now disposed of their non-European manufacturing business so as to concentrate on the market they know best.

As mentioned, over the years, many industry experts have forecast that most of the smaller battery companies would merge or die. The experts have been partly correct. Most of the smaller companies have survived, some such as Oerlikon and Electrona in Switzerland have indeed merged and a few like CBS and Gotfried Hagen have gone out of business and passed into history.

A few small battery companies are operating in Germany, France and the Benelux countries. By contrast, both in Italy and in the UK, many small battery companies exist and flourish. The present generation of industry experts 'still' forecast the early reduction in their number, because of increasing environmental, legislative and market pressures. The experts may 'yet' be correct. On the other hand, it is possible that the modern European breed of battery entrepreneurs will survive and continue to prosper.

In summary, based on total lead battery production, the battery companies can be classified as follows:

- (i) Group 1: major players that typically use over 75 000 tonnes of lead per year: CEAC, Hawker, Tudor, and VARTA.
- (ii) Group 2: substantial players that typically use over 20 000 tonnes of lead per year: Delco Remy, DETA, FIAMM, Hoppecke, and Lucas-Yuasa.
- (iii) Group 3: expanding players that typically use over 10 000 tonnes of lead per year: BIG and Gemala.
- (iv) Group 4: small players that typically use less than 5000 tonnes of lead per year.

### **Future possibilities**

What changes can be expected to take place? The question is relatively easy to ask. The difficult part is to forecast the outcome. It should be remembered that wise people ask the questions, only foolish ones attempt to forecast the future. The following comments are made with this cautionary note in mind.

Within the present scenario of a static to low-growth battery market in Europe, the choices appear limited to:

- (i) continuation of the present trend of the larger companies to become larger;
- (ii) small-to-medium companies to amalgamate or go out of business, and
- (iii) diversification of lead/acid battery makers to make other types of batteries.

These are, generally, classical options. It is possible, however, that a new set of changes may occur, such as the following:

(i) Breakdown could occur in the historical cooperation between companies, especially in technological and licensing matters. In the modern world, such activities are often not in company's own economic self-interest.

(ii) There may be an emergence of combined lead producer and battery companies, particularly in the area of battery-lead recycling.



(iii) Joint-venture activities may arise between battery makers and aggressive large battery marketers.

(iv) In the search for cost reduction, will we see existing battery companies move production 'offshore' into low-cost facilities in former East European countries such as Poland or the Czech Republic? If this occurs, their West European assets may evolve more into marketing companies.

(v) Will we see product concentration? That is, the emergence of groups that just focus on one or two battery types such as automotive (OE and/or AM) or traction or stand-by. Examples include, BIG and Delco for automotive and Oldham (France) for industrial batteries. In other words, companies of today that offer a complete, across the board, range of lead/acid batteries may decline in influence.

(vi) Battery companies may not evolve into global businesses at the commercial level.

(vii) Will battery manufacturers from the Far East become more of a factor in Europe via either imports and/or transplant factories?

Clearly, there are many other possibilities that could be added to this list. In addition to normal business and financial needs, the outcome will be strongly influenced by at least three major factors, namely:

- environmental pressures
- economics and legislation of battery recycling
- technical innovation, such as the design and build of an advanced lead/acid battery for electric-vehicle use and/or recombinant automotive batteries

Clearly, it is likely that further structural changes will take place in Europe as the mother of the battery industry changes for a changing world.

### **Acknowledgements**

The author acknowledges the use and reference of recent informative papers on the European battery scene by: Dr Kellinghusen, 1992 BCI meeting, Monte Carlo; J. LeClerq, 1992 BCI meeting, Monte Carlo; A. Cooper, *J. Power Sources*, 42 (1993) 269, and R. Amastadi, 1993 BCI meeting, Phoenix, AZ, USA.