

# The European lead/acid industry and its future in the world market

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## Abstract

Since 1988, the European lead/acid battery industry has undergone extensive restructuring through mergers and acquisitions. Such developments have been commonly interpreted as a normal trend to optimize economies-of-scale in order to face increasing competition. Although this is one of the reasons for the concentration process, other aspects should be considered in order to understand and prepare the future of the battery industry. The automotive (SLI) and industrial battery sectors have different challenges and opportunities. Nevertheless, for the purpose of this study, the focus is essentially on the SLI business. Where appropriate, extrapolation will be made to the industrial battery business. © 1997 Elsevier Science S.A.

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## 1. Reorganization / concentration

During the past five years, the European lead/acid industry has been influenced strongly by a sequence of mergers and acquisitions. From a fragmented industry in the 1980s, when 17 manufacturers were needed to supply 85% of the total European battery market, there is now a highly concentrated industry: seven manufacturers supply 87% of the total market (two of them have a combined market share of 60%), see Fig. 1. This situation appears to be still more unusual if it is noticed that the car industry, the battery industry's main customer, is much less concentrated with six vehicle manufacturers needed to fulfil 60% of the European market. If this could be considered a normal situation for system suppliers to the original equipment (OE) market then, with only one exception, no other battery manufacturer may be considered as such. On a purely offer/demand front, the present situation is far from being stabilized.

Curiously (or not), these mergers and acquisitions were almost always supported by more or less complex financial arrangements and/or groups outside the battery industry. This may be an indication of how the industry was not able to finance on its own the consolidation of these strategies.

## 2. Why and how automotive (SLI) batteries became 'commodities'

The sales evolution in Europe during the past 20 years in the SLI market (Fig. 2) illustrates the extent of the aggressive sales strategies of the European battery manufacturers. In a slow growth volume market, where total sales increased at a rate of 1.5% per year, the exports/imports through European countries increased by 240%. This was because each manufacturer adopted the strategy of seeking additional volumes through aggressive export sales.

The export sales (OE and replacement) were price-driven, and resulted in a gross margin deterioration, mainly during the past five years. Fig. 3 shows, from a market survey, the way the average unitary gross margins behaved in the European SLI market. During this period, no real technological breakthrough occurred and thus there were no significant differentiations in products. It is assumed that, in 1996, a stronger deterioration will take place due to the very high lead prices.

Increasing competition without significant product differentiation, speeded the way in which SLI batteries became 'commodities'. Labelling batteries according to distribution requests, or to act in specific markets, is one of

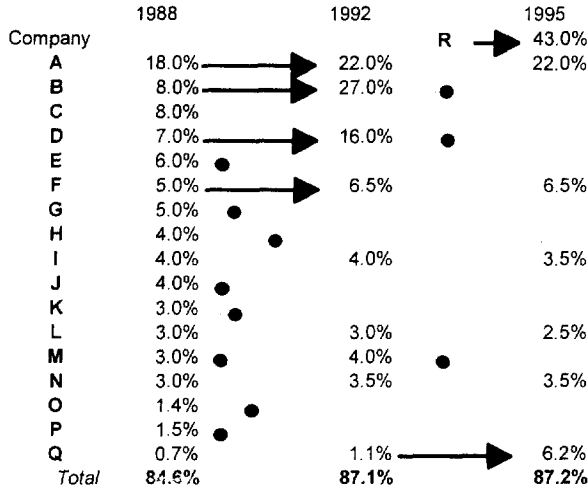


Fig. 1. Concentration process: a market-share evaluation.

the results of this process and produces reduced brand awareness and acceleration of the 'commodity loop'.

**3. Why industrial batteries were not so affected by the trend in automotive types?**

Different reasons may explain why the industrial battery business is not following the profile deterioration observed for automotive batteries and, thus, why industrial batteries are not becoming treated as 'commodities'. It should be understood that industrial batteries are not at the same mature stage of technology; the technology is still in evolution. The increasing importance of valve-regulated

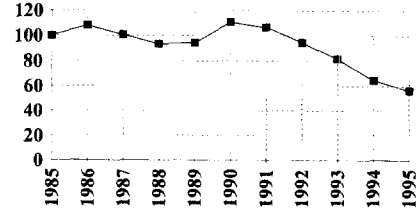


Fig. 3. Gross margin per battery (1985 = 100).

technology, that is gradually taking market share from the flooded technology, is a recent trend. In fact, this means that industrial batteries are still in strong evolution, a situation that opens opportunities for product differentiation.

Industrial batteries are much less standardized, both in technical performance and in dimensions. Less standardization is also a barrier to entering a 'commodity loop'. Industrial batteries (both motive power and standby) still have to be customized, either in terms of dimensions or electrical performance, according to customers' specifications. Working closely with OE customers is the way to put into evidence each manufacturer's advantages.

Markets for industrial batteries are much more nationalistic. The type of relationship that links manufacturers with their customers emphasizes the importance of proximity. The need for reliable after-sales service is also a major issue that reinforces the nationalistic situation.

High-efficiency distribution channels for industrial batteries are less able to supply more technically sophisticated customers. Efficiency-based distribution channels (i.e., mass merchandisers) are not adapted to the sale of indus-

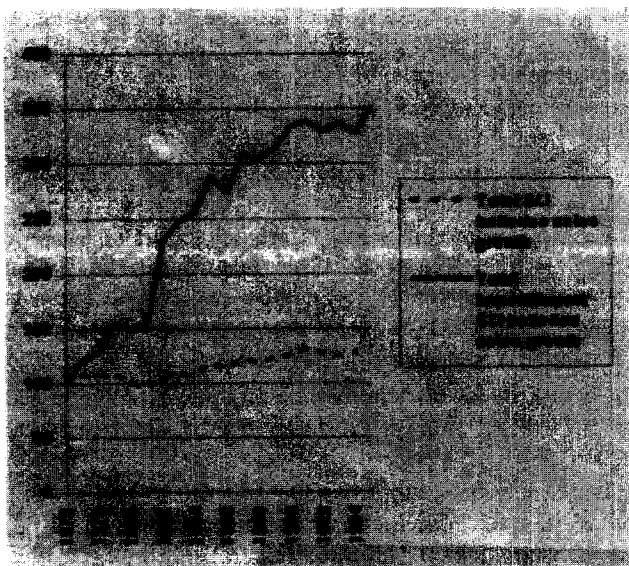


Fig. 2. SLI sales growth in Europe 1976-1994.

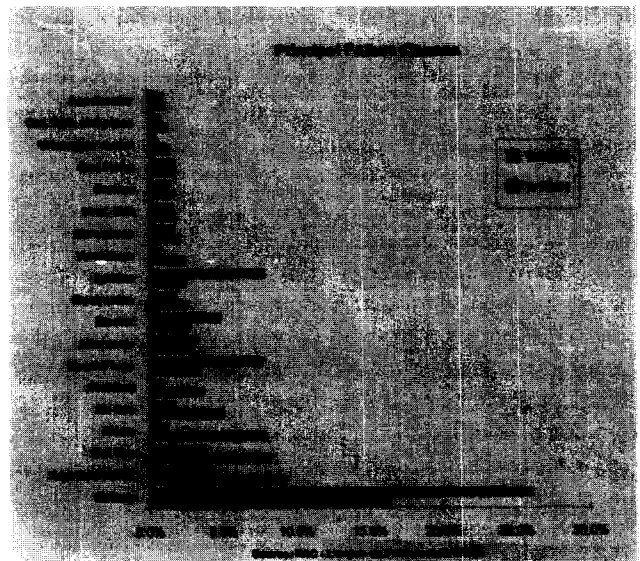


Fig. 4. Principal failures in automobiles. (Source: Financial Times: Management Reports.)

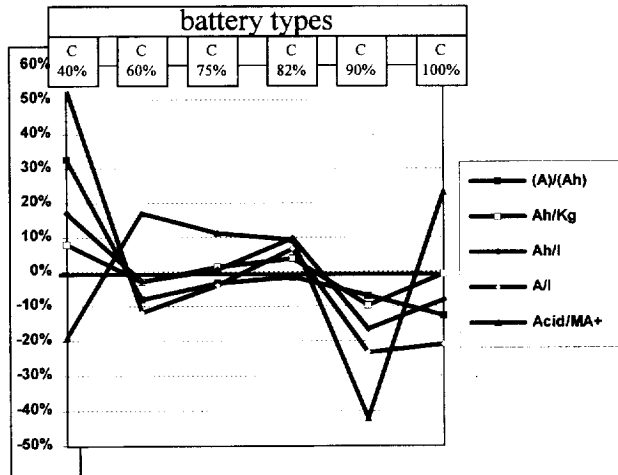


Fig. 5. Characteristics of six different battery types required by an OE customer. Parameters such as the A/Ah ratio and the acid/positive active-material ratio vary by more than 50% from one battery type to another.

trial batteries. With the probable exception of low-capacity miniaturized standby batteries (used in consumer electronics, UPS, security, etc.), industrial batteries will remain a much more specialized business.

4. Different markets, different product specifications?

Analysis reveals that markets are different from region to region in a given country. In Europe, the renewal rates of SLI batteries vary from 3.8 to up to 6 years. This is true for basically the same products. Thus, there are final user habits, car characteristics and other external conditions (such as weather and road networks) that influence the perception of lead/acid batteries. Nevertheless, it is well known that the North American SLI products and markets are substantially different from those in Europe. For exam-

ple, average battery life is 2.7 years in the USA, but more than 4 years in Europe. Battery life in Japan is 3.2 years, again a different situation.

As well as products and market volumes, distribution patterns also differ from country to country, and from region to region. In Europe, some countries have more than 50% of the replacement batteries sold through vehicle manufacturers' dealerships, while in other countries more than 50% of the batteries are sold through the manufacturers' own networks. Thus, battery manufacturers who are looking to a world market should adapt their approaches from a product stand-point to a market stand-point. It is not true to say that European starter batteries are better than North American or Japanese counterparts — they are simply different and the markets are also different.

5. How can manufacturers contribute to the reshaping of their industry?

At present, the problem facing manufacturers is to know if, and how, they can contribute the reshaping of the industry. In contrast to industrial batteries, that are operating in growing standby and electric motive-power markets, the starter battery is in a 'bad shape'. Some of the factors that are responsible for this situation are as follows:

1. an almost constant volume market;
2. vulgarization of the product, it is being sold as a commodity;
3. no real technological innovations that allow differentiation;
4. no brand awareness;
5. bad environmental impact, mainly due to a lack of control by the distribution channels, and
6. price-based competition.

Furthermore, from a consumer's point of view, the SLI battery remains the most unreliable component in a car; it

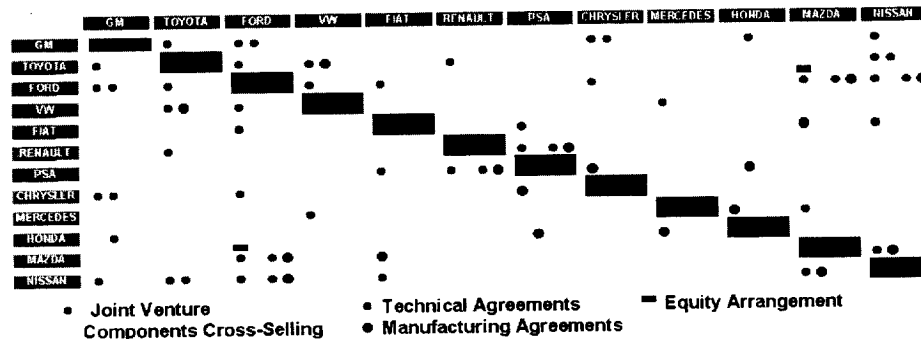


Fig. 6. Examples of global networks that are being built by car manufacturers, mainly through non-equity alliances.

is at the top of the list of failures and is responsible for more than 15% of defects according to emergency service organizations (Fig. 4).

To avoid this situation and to contribute better to re-shaping the industry, battery manufacturers must work closer with their OE customers. Following the practice of other suppliers to the car industry, battery manufacturers should help their customers to define the battery specifications and its environment in the car. In doing so, they will improve the service and fulfil the expectations of the final customers, i.e. the car drivers and not the OEM themselves. The following is an example of such an approach.

An OEM, with a wide range of vehicles, specifies different SLI batteries for its different types of vehicles. For one battery type, a certain parameter may be 50% above the average value, while for a different battery type the same parameter may be 50% below the average (Fig. 5). When important parameters (such as cold-cranking amperes per Ah, capacity per kg, acid to active-material ratio, etc.) are ignored by car manufacturers, leading to special battery designs, battery manufacturers are not rendering good service to their industry. In the great majority of situations, are over-designing all other parameters to fulfil a minimum required specification that is not balanced with the battery technology. All these batteries will be sold in the replacement market at prices according to their nominal capacities and will ignore the technical specifications and specific costs.

**6. How can battery manufacturers participate in the globalization process?**

As discussed above, it does not appear that the lead/acid industry is able to finance by itself the growth and concentration process. Nevertheless, the industry must follow the globalization process if it wants to remain as a world-class partner with its customers. One of the best ways to achieve this is through the development of alliances world-wide, i.e. in the manner that car manufacturers form strategic alliances (Fig. 6). Admittedly, among all these car alliances only one has involved equity arrangements. This situation can be extrapolated to the battery industry. If differentiation is possible, then new and interesting alliances could be available all over the world to enable the battery industry to participate in the global market.

In any event, the battery industry has to re-analyse its business. Commonly, product-oriented business definitions are the most frequent mistakes when defining each business. The following are some good examples of the differ-

ence between a product-oriented and a market-oriented definition:

Company	Product-oriented definition	Market-oriented definition
Revlon	We make cosmetics	We sell hope
Xerox	We make copying equipment	We help improving office productivity
Carrier	We make air conditioners and furnaces	We provide a comfortable climate in the home

If the same principles are applied to the battery business, then the situation could be:

	Product-oriented definition	Market-oriented definition
SLI Batteries for the OE	We make batteries according to OE customer specifications	We supply a reliable source of energy as part of electrical systems
SLI replacement batteries	We make batteries to fit with the OE specifications	We provide a service to help solve electrical failure problems

There is a gap between the products that the industry has been designing and manufacturing and those that are being sought by its customers. It is necessary to reshape product concepts and technical efforts to a market-oriented approach. If this can be achieved, then all the major challenges will be market- and technology-driven, instead of price-driven situation as at present. There will be an opportunity for real innovation and differentiation.

If the industry remains as 'commodity' manufacturers, there will be no major opportunities in the world market and the European industry will not have any cost advantages. On the other hand, if the industry changes its mind and decides to become more market-oriented and technologically innovative, then there must be closer contact with OE customers. Being 'cost effective' is not selling the 'cheapest money that can buy', but the 'best that money can buy'. This and other similar actions are vitally important in preparing the European battery industry for the future.

The above seem to be common-sense statements. Nevertheless, common sense is required if the European lead/acid battery industry, as a whole, really wants to play a major role in future world markets.