The automotive equipment industry in France is the world’s number four, with turnover rising by 3.5% in 2001 and now standing at 25.2 billion euros. The growth in the automotive manufacturing market has positive repercussions on the original equipment market, although the aftermarket is far less affected. The relations between equipment manufacturers and car makers are now global. Over the last decade, the equipment manufacturers created jobs but are now restructuring their industrial sites in Europe, with their research and development efforts, price constraints, the demand for quality and ever tighter deadlines making significant inroads into their profitability. As co-designers of innovative projects, with the car makers, they are setting up a new industrial organisation capable of providing modules combining various basic equipment items. The supply chain is now no longer hierarchical and set in stone and is constantly changing to suit the projects in order to make best use of synergy and the skills available. By using the new information and communication technologies, particularly Internet marketplaces, the equipment manufacturers are adapting to the constantly expanding place of electronics in the automobile.

Plastics, metalwork, glass, rubber... the expanded automotive supply chain comprises a mosaic of companies and trades. The equipment manufacturers are one of the key links in this chain, with their activities reflecting the health of the automotive industry (for a classification of equipment manufacturers as used in this survey, see the table on p.4).

The contents of this issue is taken from the study entitled "L’industrie de l’équipement automobile (Chiffres clés Analyse, Sessi), to be published in the last quarter of 2002.

The automotive equipment industry in France is the world’s fourth largest. In 2001, its turnover rose by 3.5%, as a result of heavy demand from domestic car makers. It now stands at 25.2 billion euros, or one quarter of the turnover of the
European regulation No 1400/02

This new regulation concerning car distribution will apply from 1 October 2002, and run until 31 May 2010. It will have an impact on the sale and supply of spares. Until October 2002, the car makers supplied their approved repair and servicing workshops with most spare parts. The new regulation deregulates the procurement of original equipment parts. Henceforth, official or carmaker approved servicing shops will find it easier to obtain original parts directly from the equipment manufacturers who supply the car maker. They will also be able to obtain parts from other equipment manufacturers who produce and offer equivalent quality spares, generally at lower cost. But for work under warranty, recall operations and free after-sales service, the repair shop will be required to use parts from the car maker. The equipment manufacturers will be allowed to put their brand or logo on all parts they produce. This is one way of moving a step closer to the end-user, i.e. the consumer.

Direct repercussions on the original equipment sector.

Over the last six years, the European automotive picture has been dynamic, with 14.7 million vehicles being produced in 1995 and 20.3 million in 2000, or a rise of nearly 40%. Furthermore, over the various vehicle ranges, the standard specification is increasingly luxurious, with optional equipment priced attractively for the customer. In 2000, 65% of vehicles were equipped with air conditioning as standard, as opposed to 5% in 1990.

Unlike the original equipment market, the aftermarket is stable. Despite the rise in the number of vehicles on the roads, growth in this area is stagnating, as the reliability of the equipment fitted to the new vehicles is improving and their functional life is constantly increasing.

The new European regulation is opening up prospects for the equipment manufacturers, who are already developing new commercial strategies, such as setting up specialised networks dedicated to maintenance and repairs (see box above).

Growing globalisation

The automotive market is a global one. The car makers obtain supplies from around the world and are expanding into the emerging markets, encouraging the equipment manufacturers to follow suit. But if the equipment manufacturers are setting up shop abroad, it’s not just because the car makers want them to. In a bid to expand their own customer portfolio, they have their own strategy.

In France, the foreign presence is particularly strong. Subsidiaries of foreign groups, mainly American and German, account for more than 60% of the sector turnover and nearly 75% of exports. The main world automotive equipment players are present in France, attracted by the potential of the French automotive manufacturing market. In 2001, Renault and PSA represented one quarter of all new car registrations in the European Union.

The trade balance shows a structural surplus, with a coverage ratio of 150% in 2000, although three-quarters of all exports are intra-group. The factories producing the automotive equipment are highly specialised. Furthermore, the French car makers send their overseas plants the equipment they have themselves made or which was partially produced by the suppliers.

The growing globalisation of trade is also the consequence of the worldwide automotive equipment organisation. A small number of large multinational groups exist alongside regional suppliers, as well as international specialist groups. Driven by advances in electronics, telematics, new engines and high value-added materials, new entrants are investing heavily in the automotive sector. They come from industries as varied as aerospace, IT, telephony and entertainment (games consoles).

The “molecular chain”

Until the eighties, the automotive industry was heavily dependent on subcontracting. This organisational pyramid gradually gave way to new forms of out-sourcing, initiated by the car makers. After having been simply tasked with executing the specifications defined by their customers, the automotive suppliers have become responsible for products and processes, or more precisely for their economic and logistic performance. They are today fully-fledged partners to whom the car makers entrust complete design and performance of a project. 70 to 80% of the total cost of manufacturing a vehicle is now handled by the suppliers.

At the same time, a new organisation is taking shape in the industry, somewhat like a “molecular chain”. Each vehicle project now brings together companies pooling skills to form a network of partners. Each project can lead to a different combination of the partner businesses, or “elementary particles”. Finally, under pressure from the social, economic, cultural and legal environment, any change to the assembly, however small, can exert a significant influence on the overall performance of the project. In this representation, the assemblies are organised to do more than simply add together the competences of the firms in the industry. Similarly, the place of the suppliers in the fabric of vertical relationships is neither strictly hierarchical, nor rigid.

Whereas the traditional view of the automotive industry led to analyses in which the car makers classified companies according to their rank in a hierarchy of suppliers, the “molecular” approach produces new typologies (see box above).
New relationships demand new typologies

The degree of dependence on the car makers

Equipment manufacturers and suppliers are analysed here according to their degree of dependence on the car makers. Five families are identified.

The automotive chain by degree of dependence

<table>
<thead>
<tr>
<th>Company profiles</th>
<th>Degree of dependence</th>
<th>number of companies</th>
<th>invoicing billion €</th>
<th>average workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>exclusive*</td>
<td>100%</td>
<td>312</td>
<td>23.8</td>
<td>561</td>
</tr>
<tr>
<td>heavily involved</td>
<td>75 %&lt;Tx&lt;100 %</td>
<td>305</td>
<td>7.0</td>
<td>208</td>
</tr>
<tr>
<td>dependent</td>
<td>50 %&lt;Tx&lt;75 %</td>
<td>107</td>
<td>2.9</td>
<td>245</td>
</tr>
<tr>
<td>relatively specialised</td>
<td>25 %&lt;Tx&lt;50 %</td>
<td>258</td>
<td>1.0</td>
<td>101</td>
</tr>
<tr>
<td>independent</td>
<td>0 %&lt;Tx&lt;25 %</td>
<td>648</td>
<td>0.4</td>
<td>64</td>
</tr>
</tbody>
</table>

* equipment, tyre, glass makers
** the degree of dependence is the share of the automotive market in the turnover of the automotive equipment manufacturers and suppliers
Source: Sessi, annual corporate survey and sectorial surveys 2000

Between 1996 and 1999, two thirds of companies were stable within the same level of dependence. In each level, it is the larger companies which become more dependent on the car makers.

Analysis by “strategic groups”

The equipment manufacturers and other suppliers were examined using an analysis of twelve economic variables, with the aim of drawing up similar profiles for the companies in terms of economic and sales performance, industrial policy and social management. Six families were identified in this way, illustrated here by the average mark-up in each class.

![Mark-up*](image)

* The mark-up is the trading profit compared with the value added before VAT
Source: Sessi

E1: The “omnipresent” equipment manufacturers are subsidiaries of the major multinational groups. They are highly capital intensive and invest permanently.
E2: The “fragile” equipment manufacturers suffer from weakened profitability and attempt to out-source part of their activities, leading to restructuring.
E3: The leading specialist equipment manufacturers are consolidating. They are highly active on the export market and successfully offer products or processes.
F1: the vulnerable suppliers are capacity subcontractors, chiefly small/medium enterprises with a low degree of dependence on the automotive industry.
F2: the suppliers in partnership with the plastics or metal industry have a profile comparable with that of the equipment manufacturers.
F3: the reactive specialist suppliers are speciality subcontractors enjoying high profitability levels.

Platforms and modules, a new industrial logic

The car makers are increasingly building vehicles around platforms. These sites produce different vehicles in the same range, using common components. In 2005, one third of world production will be with common model platforms. The equipment manufacturers have also had to adapt. They are setting up a new industrial and procurement organisation.

For non-visible parts, they propose standardised products suitable for fitting to the various platforms.

The modular approach combines standardisation and diversity to meet the procurement needs of the platforms. The module is defined as a collection of subassemblies which do not all contribute to performing the same function, but which are located in the same place in the vehicle (front end, cockpit). The world modules market is evaluated at 45 billion euros. In 2010, these modules should account for 15% of car maker purchases. The equipment manufacturers will have to locate close to the car makers’ plants to allow assembly of the modules. They therefore frequently relocate to the industrial parks destined for the suppliers.

Development of Internet related applications

The automotive equipment sector is an area of industry that has warmly embraced the use of the new information and communication technologies: “e-procurement” for buying, “e-design” for product development, “e-supply chain” for logistics. These new technologies are now developing rapidly and contribute to reducing costs, improving quality and shortening lead times. Co-design and data transfer systems are becoming the norm and are standardising along the entire chain: the car makers, the large equipment manufacturers in charge of modules and components, and the other suppliers involved in an automotive project.

In 2000, 93% of the equipment manufacturers were using a computerised electronic data interchange (EDI) network, as against 63% in the manufacturing industry. The Internet is a vital tool for accessing the mass of information circulating along the supply chain, although the other automotive suppliers are a little slow in making widespread use of it. For example, in early 2000, only 56% of metalworking companies and 68% of automotive plastics companies were using the Internet.

Electronic commerce is developing, with the car makers and equipment manufacturers creating portals for their suppliers and marketplaces appearing on the Internet (Covisint and Supplyon). Like the car makers, the equipment manufacturers want to reduce their range of suppliers and bring down procurement costs.

Co-design extended to the entire chain

In France in 2000, the automotive industry devoted 4.5 billion euros to research and development, be it by the makers, the equipment manufacturers or the major suppliers. Owing to the increasing complexity of the products, the equipment manufacturers are involved more than ever before, with the number of researchers and technicians they employ having risen significantly in recent years: from 4500 in 1995 to 7000 in 2000.

The automotive equipment manufacturers are investing more and more in R&D and today they already cover one
third of the cost of developing a new model, with this contribution slated to rise further in the next few years. The major equipment manufacturing groups devote more than 5% of their turnover to research and development.

The equipment manufacturers are also involved increasingly early on in the vehicle design process. Innovative partnerships with the car makers are now common practice and the lead-time for developing new models is down to about 24 months. The equipment manufacturers are also looking for greater co-development with their main suppliers, with simultaneous engineering teams being set up with certain key players in the plastics and industrial metalworking sectors. Co-development with the other suppliers in the chain however remains relatively limited.

**Electronics, the driving force behind innovation**

Electronic content is the driving force behind innovation and already accounts for 20% of the average cost of a vehicle, a figure which could reach 40% by 2010. More than one third of the 3000 researchers in the automotive equipment industry are working on projects in this field. Through computers, electronics are now present in all systems and act as the backbone for most of an automobile’s functions. Consequently, the traditionally mechanical equipment manufacturers are having to shift into specialised electronics fields. As electronics take over, this will make rapid development of environmental, comfort and safety innovations even easier.

### The equipment manufacturers are designing the technology for tomorrow’s vehicles

The equipment manufacturers are now in a position to offer new technologies. In terms of engines, traditionally the preserve of the car markers, they have developed various direct injection systems designed to cut automotive pollution. While waiting for “all-electric” systems and development of the fuel cell, the equipment manufacturers have been working on hybrid engine projects (thermal and electric). The leaders, focusing on safety, are opting for complete packages which incorporate telematics. They are thus proposing systems for automatic transmission of emergency calls from a vehicle, wireless telephone systems which automatically indicate accidents or traffic jams near the vehicle and complete navigation assistance systems. This research in the field of driver assistance is a stepping stone towards quasi-automatic driving. This technological revolution should lead to further changes in the supply chain. Similarly, electrical systems are taking the place of hydraulics, for functions such as braking. Many equipment manufacturers will now have to adapt constantly, in particular in the mechanical sectors. You might say that this is the toll to be paid on the road to the future.

### Reading list

- *L’industrie de l’équipement automobile en chiffres*, Chiffres clés production industrielle (special issue), Sessi 2001
- “La consommation automobile depuis 40 ans”, Insee Première n° 844, May 2002
- Key figures 2001, Fiev annual report