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Introduction: The diversity of internationalization strategies and trajectories of the automobile sector firms

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For most observers, the globalization of firms is underway and irreversible. In accordance with their descriptive and analytical orientation, GERPISA contributors of this book question this common affirmation relating the internationalization trajectories of car sector companies: builders, suppliers and distributors, since forty years. They show the diversity of ways and forms of internationalization, the reversibility of these processes observed in the past, the restrictive conditions of profitability in overseas operations and the prevalence of regionalization in spite of globalization attempts since ten years. For this reason, the automobile firms trajectories are grouped and analyzed by their region of origin. This book considers North America and Asia. A companion book treats of European car industry (Freyssenet M., Shimizu K., Volpato G. eds, *Globalization or regionalization of European car industry?*). In the conclusion we propose to understand the diversity of the forms of internationalization, their success or their failure, considering the difference of the companies profit strategies and the variable relevance of these strategies according to the evolutive regional context. To facilitate the reading of the following chapters, we expose in this introduction the different forms of internationalization observed in the car industry since its beginning.

The relevance of the internationalization process in the automobile industry

The internationalization of the automotive industry is a typical feature of the establishment of the first automakers who, as soon as they were able to offer products with enough competitiveness and reliability to domestic customers, did test their luck in foreign markets searching for the scale economies which were necessary to gain position in an industry in which manufacturing investments were undoubtedly high (Bardou *et al.,*, 1977; Bonnafos *et al.,*, 1983; Volpato, 1983; Laux, 1992; Chanaron and Lung, 1995). But also a quick thought on the history of such industry and a glimpse to the current structure of the automobile supply chain clearly show how the past forms of internationalization differ from those currently being developed. To a certain extent we could say that the history of internationalization of the automotive industry is the history of the automotive industry *tout court*, given the extraordinary role which such phenomenon has always played, both in defining the type of competitive confrontation between automakers, and in the evolution of growth and consolidation strategies by automakers and by their suppliers.

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Such statement aims at underlining the two-edged nature of the phenomenon of internationalization in the automotive industry, on the one hand always present, but on the other hand always different compared to that which had developed in the previous years, due to the changes in automobile demand in the various markets, to the degree of maturity of the competitive challenge among industry players, to the evolution of product and manufacturing process technologies, to the opening of the various national economies to exchanges and multi-lateral agreements.[1] Hence if one wants that internationalization, as a concept both descriptive and interpretative of some of the most relevant aspects of the automotive supply chain, has some hermeneutic meaning, it must be storicised, in other words applied to a given historical time and described in the aspects which derive from it, with respect to any automaker.

The multiplicity of forms of internationalization

It is commonly agreed to divide the internationalization process in many stages, which represent the stages of progress in the manufacturing and marketing organization of industry firms on a multi-national scale. Given the aims of introduction here, compared to the essays which follow, it is worth to list, although briefly, the various roles of the internationalization process which at the beginning was measured by the amount of direct foreign investment. It was therefore referred to as :

- export of completely-built-up vehicles (CBU). It is important to note that, contrary to popular belief, such first stage represents an important international involvement as well, since it implies the establishment of a decentralised marketing organization, a network of dealers and service agents, a system of parts warehouses, a logistics organization for their shipment to end customers, and finally marketing and promotion activities, with a multi-year time-frame. All of this implies relevant investments, often higher than those required by small manufacturing and assembly plants. The failure of some European automakers in entering the North American market as well as of some North American firms in entering Europe through various historical stages, including most recent ones, stems just from the complexity of problems which arise even during such first step of the internationalization process and from the difficulties shown by firms in adapting the marketing and product strategies, which were successfully carried out in the domestic market, to the need of foreign markets.
- assembly abroad of vehicles semi-knocked-down (SKD), that is vehicles partially assembled which require further operations, mainly with respect to the coupling of internal parts to the external body. It is a rather frequent solution in the first stages of the internationalization process, but currently seldom applied outside the manufacturing of vehicles in small volumes.
- assembly abroad of vehicles completely-knocked-down (CKD), that is complete assembly of vehicles whose individual parts are imported from abroad.
- assembly of vehicles CKD through component parts partially manufactured in the same country and partially imported.
- Assembly of vehicles CKD starting from components wholly manufactured in the country where assembly takes place. A further development of such stage can consist in the organization of product export flows by the foreign country where assembly takes

[1] On the reorganization of the automobile industry which took place after the oil shocks of the 1970s see Freyssenet *et al*. (1998).

place towards more export markets (or even return exports to the country where the automobile company is based).

New forms of internationalization

However at the beginning of the 1990s it became evident that these forms of internationalization, believed to be the most typical and relevant within the strategies adopted by automakers, albeit important, were not exhaustive since they all revolved around a single parameter: the one based upon the degree of manufacturing integration achieved by automakers in the country where the end product was directed. Such integration was minimal when there was export of complete vehicles, while it was maximum with local manufacturing of parts and final assembly. With the change in industry equilibria which took place mainly in the 1990s, it became evident that internationalization is a fact which presents a range of forms which cannot be mainly related to the degree of manufacturing integration. It encompasses a growing set of features which tend to play a higher role which relates mainly to the organizational, financial and decision-making aspects (Boyer *et al.,* 1998; Carrillo *et al.,*, forthcoming; Freyssenet and Lung, forthcoming).

The forms of internationalization referred to organizational aspects can be defined by an automaker within a continuum between two extremes: on the one end an internationalization based upon a high standardisation of the various organizational and decision-making forms of activities located abroad, according to a replication of procedures adopted in the mother company, and on the other end an eclectic organization inspired by localism, where in each individual market the organizational criteria are driven by the specific traits of the foreign situation.

Financial aspects are manifold. They range from less invasive forms of financial internationalization which are characterized by the forms of acquisition and the source of borrowed capital, to stronger forms which can affect the degree of international dispersion of capital, mainly in cases in which foreign placements of stocks are not acquired by individual investors, merely interested to returns for the specific investment, but by other companies in the industry which swap stocks in order to strengthen the range of agreements which are played mainly on the industrial front. Then comes the most relevant form of financial internationalization, in which an automobile company holds such a relevant stake in a foreign automaker, to become the economic subject of reference, which inspires the manufacturing and marketing strategies.

Also decision-making aspects can be framed according to the various forms of internationalization. With the growth in forms of internationalization which has already been described, the possibility of coordinating on a tight basis the policies adopted by individual makes controlled by an automobile company acquires a specific meaning.[2] In the past, both due to the complexity of phenomena and to the absence of communication media which were adequate for the problems to deal with and to be solved, the forms of decision-making internationalization were rather modest. But now, thanks also to the innovation potential offered by the most recent systems of Information & Communication Technology (ICT), the possibility to develop competitive strategies on a worldwide

[2] We hereby refer to the concept of globalization in the meaning defined by Porter (1986) according to whom an industry can be defined as global is there are competitive advantages deriving from the integration of activities on a worldwide scale.

scale appears as hard a goal as it is necessary (at least as an end objective) for all its implications and it is currently pursued more and more firmly by all automakers, albeit with different paths and priorities. In this case as well, the forms of globalization of decision-making choices can develop on a set of areas of application, whose choice and development offer very relevant potential competitive advantages. By limiting ourselves to the analysis of the forms which are currently involving automakers to a greater extent, we must mention at least two specific areas.

The design of shared platforms. The search for scale and scope economies by suppliers can be adequately exploited only with forms of further product standardisation by automakers. However it is now evident that the "simple" forms of internationalization based upon the offer of a same model for a range of markets (world car) turned out to be a failure This has emerged with the difficulties encountered in transferring products within the most advanced markets in the triad (USA, Western Europe, Japan), but the inadequate standardisation of models is due to exacerbate as emerging markets consolidate (Eastern Europe, Latin America, China, India and so on).[3] Therefore automakers are experimenting new forms of standardisation, more refined and complex, yet partial as they aim at using common parts without the standardisation of models, which must maintain margins of customisation both related to the various national markets, and to the specific needs of the individual end customer.[4] Such process moves along the design of "common platforms" capable of using a relevant number of common sub-systems, but leaving the freedom to develop the body and other elements more readily visible to the customer according to forms which are differentiated for the individual markets. It is a key move, in order to obtain considerable cost advantages, which is also hard and complex as well. No automaker can declare to have achieved it in a satisfactory way, but all of them, without exception, are moving towards it, aware that only in such way they will manage to solve the current contradiction between the advantage of expendable variety on the marketing side, and standardisation linked to low-cost and high-quality manufacturing.

System integration and modularization. Another key element of the strategic reorganization of the automotive supply chain is the design of the vehicle by parts or systems, and modularization of assembly. They are different features, which must be considered separately, albeit they share some common aspects. Vehicle design by systems which are internally integrated stems from the fact that the vehicle can be described as a set of functional groups, each of whom is in charge of carrying out different tasks: production of moving energy and its transmission to the wheels (engine and powertrain), the braking system, the vehicle driving system, the control system, the exhaust system. In the past such systems had, on the design standpoint, a low degree of internal integration since they were made of single mechanical elements which could be designed with modest levels of interdependence. Currently all these functional systems have a very high degree of integration due to the fact that their operation is governed by electronics. In substance, each functional system is no longer the mechanical sum of many different parts, but represents an integrated complex which can be designed in an optimal way

[3] On NICSs automotive industry see in particular Humphrey et al. (2000).

[4] For an analysis of the evolution of variety strategies developed over time by automobile companies see the set of essays in Lung *et al.,* (1999) On the concept of world car and of common platforms see Camuffo and Volpato (1997), Volpato and Stocchetti (2000).

only through a unitary direction, carried out by a supplier acting as system integrator[5] On the other hand, the phenomenon of modularization does not refer to the design of individual component parts of a functional system, but focuses on its assembly and on the testing activities to be carried out in the stage which comes immediately before the transfer onto the vehicle assembly line.

The module is therefore a macro-component, made up of many parts, which it is possible and economically attractive to assemble and test outside the vehicle final assembly line, in order to increase its simplicity and speed. In some cases it can therefore happen that a functional system is a module, as in the case of the powertrain of the exhaust emission system, but in other cases this may not happen. For example the vehicle lighting system or the driving system clearly represent functional systems, but their complexity and their extension over a set of vehicle parts prevent their pre-assembly as modules (Sako, Warburton, 1999).

All these new forms of design and coordination of activities are intrinsically linked to the phenomenon of internationalization since on the one hand the possibility to fully exploit the synergies deriving from these strategies lies in the development of a wide-ranging internationalization process, and on the other hand because the continuing tension between the acquisition of competences necessary to develop these highly complex projects and the constant compression of costs implies the selection both of partners with highly sophisticated technologies in the most advanced industrial areas, and of partners featuring low manufacturing costs in the emerging areas.

The de-stabilizing aspect of the globalization process

The globalization process under way is a sign of response to a situation of strong competitive tension, but it has become in turn a case of further de-stabilization depending on the variety of strategies adopted by some automakers which are obviously characterized by different evolutionary trajectories (path dependency) and by different profit strategies. [6] In such sense the policy of globalization which had initially acted as a "response" strategy to the tensions triggered by the competitive challenge is becoming, within the complex system of interdependencies of the international automotive supply chain, the triggering factor for further initiatives by companies which see themselves threatened by recent transformations.

The set of essays which follow describe in a rich and detailed the way the variety of internationalization models developed by the main automakers in the different markets. While directing the reader to them for a full appreciation of the pros and cons of the various strategies, it is however worth here to underline two phenomena which are both relevant and general: on the one hand the fast and to some extent astonishing swapping of the competitive positions which marks one more time a strong diverging trend for the individual automakers, hence the sustainability of different profit strategies, and on the

[5] The key characteristic of a system integrator is the undertaking of the responsibility for the execution of most relevant technical tasks in the product/system chain and the co-ordination of the chain's technical and operational performance over time.

[6] The original instability appears mainly generated by the fact that the development of the motorization process for the Newly Industrialized Countries (NICs) is still insufficient to fully utilise the excess of production capacity accumulated by all automakers.

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other hand a sort of convergence by individual automakers towards an attempt to strongly reduce their vertical integration.[7]

With respect to the swapping of competitive positions it is very significant that a considerable number of automakers who over the recent years did show a marked level of activity, mainly through policies of acquisitions, mergers and equity alliances such as Daimler-Chrysler, Ford and GM-Fiat, are undergoing a stage of difficulty, whereas many observers, and financial consulting companies in particular, did expect them to have a stage of strong recovery. An exception within this picture is the Renault-Nissan group, that is just the one which was credited with the hardest and most complex task. On the other hand the highest profitability spot is held by the PSA Group, which in the recent past was criticised for an excessive static attitude linked just to the refusal to pursue a more marked policy of internationalization.

Instead the traits of relative uniformity in the strategies of automakers relate to the forms of division of labor with the supply chain. All main players in the industry are developing further a program of reduction of their manufacturing borders, in order to transfer to first-tier suppliers (which then tend to be more and more indicates as tier 0.5 suppliers) not only the responsibility of development of product and process innovations, but also final assembly activities. Even Toyota, notably the automaker less incline towards this, seems to have adopted more open positions.[8]

Clearly such policy is based upon the belief that automakers are capable of maintaining, also in such different sharing of activities and responsibilities, the necessary know-how in order to integrate the contribution of suppliers into a product which is adequate for consumer needs and featuring a brand image which is strong enough to sustain an adequate premium price compared to the policies of direct market entry by component manufacturers. One more time the automotive industry appears due to feature considerable novelties and surprises.

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[7] On the singularity of "productive models " pursued by the various automobile companies and on the links between their "profit strategies" see the analysis in Boyer and Freyssenet (2000, 2002) and the conclusion.

[8] On Toyota's trajectory and its recent changes see in particular Shimizu (1999).

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