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La coordination des compétences et des connaissances dans l'industrie automobile  
Co-ordinating competencies and knowledge in the auto industry

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**MULTINATIONAL ENTERPRISES,  
INTER-FIRM RELATIONSHIPS AND THE LOCAL DIMENSION OF KNOWLEDGE  
IN THE AUTOMOTIVE INDUSTRY IN BRAZIL**

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The current path of the economic growth is based on the emergence of the paradigm of the Information and Communication Technologies (ICT), the process of relocation of the productive activity and the redirection of trade, capital and information.

Contrary to expectations, with the intensification of the process of internationalization of the economy, the transfer of knowledge and the innovative process is strongly dependent of local organizational structures and institutions, and the linkages established among the agents. In other words, the diffusion of knowledge and innovation is not an automatic process.

In this way, the formation of networks of cooperation becomes a way of absorbing existing tacit knowledge. Once the access to codified knowledge is no longer sufficient for the adaptation of individuals, firms or regions to the ever changing technological and market conditions, the social interaction between the agents becomes crucial.

To this end, new organizational forms emerge, with the emergence of new links between the agents, such as: firms, universities, science and technology institutions, local governments, financial institutions, work unions and clients, among others. As a result, the local dimension of innovation is due to the tacit knowledge embedded in individuals and organizations, interactive learning, and competence building. It is worth stressing the importance of the trust in the above relations, as a way of overcoming the uncertainties of the innovative process. Such relations would also develop faster in an environment of proximity

and identity between the agents (Locke, 1995; Humprey and Schmitz, 1998; Lastres et al., 1999).

In the case of emerging countries, there exists an additional challenge in what regards the access to the benefits of knowledge, since such an access depends on the participation in the generation of technology.

In this way, one can verify the financial globalization (Chesnais, 1998) but one can not verify the globalization of technology, since there exists no significant intensification of the flow of knowledge and work (Lundvall and Borrás, 1999; Lastres and Cassiolato, 1999; Archibugi and Iammarino, 1999; Calabrese, 2001).

Large firms play a central role in the production of technology, both quantitatively and qualitatively. Nevertheless, the generation and use of patents, and the distribution of investments in R&D indicate that such firms keep most of their technological activities in the home country<sup>1</sup> (Pavitt and Patel, 1991; Pavitt and Patel, 1999). Moreover, technological activities are heavily influenced by the characteristics of the systems of innovation of the home country, such as: the national system of basic research, education and training; the generation of sunk assets through cumulative technological processes; the capability of the financial system in recognizing the right of property of intangible assets; and the propitious macroeconomic environment for investments in technology.

The main aim of this paper is to present and discuss the impact of the current changes in the world's economy and the activities of multinational companies on the national and local systems of innovation of the auto industry in Brazil, in what concerns: i) the inter-firms relationships; ii) the relationships among firm and local institutions; and iii) the creation and transfer of knowledge.

In order to do so, it will be presented: (a) a resume of the recent changes in the paradigm of production in the world automotive industry - in order to show changes in the relationships among the social-economic agents and the role of Brazil in the distribution of the production around the world; (b) the panorama of the sector in Brazil, mainly in what regards the local features of new investments; and (c) the main features of two automotive clusters in Brazil, in what concern the local creation of knowledge and the inter-firm and institutions transfer of knowledge. Based on the comparison between these two clusters, we expect to have some clues about the local and national process of innovation, transfer of knowledge, and competencies promotion. At the same time, we expect to better understand the role of the multinational enterprises in local clusters in Brazil.

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<sup>1</sup> See the taxonomy of the main location strategies of multinational companies in Dunning (1992, 1994).

They were chosen for the study the cluster of the State of Minas Gerais (which is led by Fiat) and of the cluster of the State of Parana (which is led by Renault), in view of their importance in the industry as a whole – they are respectively the second and the third clusters in Brazil, after Sao Paulo - and because they reflect two different phases from the entrance of the automotive sector in the country. It will be put forth effort, along the work, to make comparisons with the arrangement of the State of Sao Paulo.

The study and comparison among the clusters will be based on questionnaire answers, part of the research project “Local Productive Arrangements and Systems in Mercosur”<sup>2</sup>, and secondary datas.

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<sup>2</sup>The project is coordinated by J. E. Cassiolato and H. Lastres, from the IE/UFRJ, and sponsored by BNDES and FINEP.

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