

## ONZIEME RENCONTRE INTERNATIONALE DU GERPISA ELEVENTH GERPISA INTERNATIONAL COLLOQUIUM

Les acteurs de l'entreprise à la recherche de nouveaux compromis ?  
Construire le schéma d'analyse du GERPISA

Company Actors on the Look Out for New Compromises  
Developing GERPISA's New Analytical Schema

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### MODULARITY AND OUTSOURCING: THE NATURE OF CO-EVOLUTION OF PRODUCT ARCHITECTURE AND ORGANISATION ARCHITECTURE IN THE GLOBAL AUTOMOTIVE INDUSTRY<sup>1</sup>

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At a juncture when the outsourcing of modules has become a panacea for all sorts of problems in the auto industry, it is worthwhile taking a sober look at what can, and cannot, be expected from it. Recently, both OEMs (original equipment manufacturers) and suppliers are interested in capturing value from vertical dis-integration of a modular sort, but neither side appears to know fully what costs and gains are involved in pursuing a specific path to outsourcing modules. Baldwin and Clark (1997 and 2000) clearly laid out the 'power of modularity' using the US computer industry and its one time near monopolist, IBM, as evidence. But in many other sectors whose industry structure is more fragmented from the start, such as the automotive industry, there exists a choice in paths to be taken to 'go modular'. Depending on the path chosen, as this chapter will show, technological know-how and capabilities end up being distributed quite differently between OEMs and suppliers. While the scope for choice of different paths is limited to an extent by the existing industry structure and initial conditions in organisational capabilities, much of it is in the hands of the companies involved in the supply chain. As Starr noted over three decades ago, 'turning to the modular approach produces a great deal of unplanned obsolescence' and 'the design and engineering costs of entering into such production configurations can be exceptionally high' (Starr 1965, p.139). The question is whether there is enough will power within leading automotive companies to incur this necessarily high set-up cost of going modular. This strategic choice, in turn, will determine the future of the industry structure, and in particular the power dynamics between the OEMs and suppliers. This chapter analyses how strategic considerations moderate the way product architecture affects organisation architecture and vice versa.

The chapter is structured as follows. The first section provides a definition of modularity in product architecture and organisation architecture. Three distinct paths to achieving the outsourcing of modules are identified by separating out outsourcing and

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modularisation. The second section examines the mixed motives of OEMs and suppliers wishing to ‘go modular’. It is argued that different combinations of these motives predispose companies to choose a different path to outsource modules. Lastly, the chapter considers the implications of these different paths for industry dynamics and supplier relationships. Although the empirical details of this paper is largely about the auto industry, much of the findings have relevant implications for any industry that designs, produces and distributes a complex product involving multiple technologies.