

about 20% compared to almost no such arrangements ten years ago.¹² In the motor vehicle sector, the Big 3 in North America formed a consortium for joint research on automotive applications for plastic components. European automakers are collaborating on developing electronics systems (the Prometheus Project), and (in conjunction with chemical and other companies) on new materials, focussing on plastic composites, ceramics and reinforced metals (the Carmat Project). With respect to semiconductors, in the 1980s three Japanese firms joined in a group to develop micro processors and new designs, while major European companies pooled R&D efforts to try to catch U.S. and Japanese industry leaders.¹³

Moreover, there is a mushrooming literature on "global management", with the emphasis on the increasing importance of a flexible process capable of integrating assets, resources and diverse human skills across international operations, standardizing where feasible while remaining sensitive and responsive to local markets.¹⁴ Product division managers are located where the strengths of an internationalized firm's operating companies are found and developed. For example, with respect to its power-transmission business, the Swiss-headquartered electrical engineering corporation Asea Brown Boveri has its manager for switchgear in Sweden, the manager for power transformers in Germany, the manager for distribution transformers in Norway, and the manager for electric metering in the U.S.¹⁵

Yet again, some caveats are useful. With respect to research and development, a detailed review of almost 700 of the world's largest and most technologically active firms (prime candidates for "global" status) reveals that they perform more than 90% of their basic research at home.¹⁶ Much of the R&D that is pooled is done among firms within the home country (e.g., the Big 3 consortium on plastics) or, and this is where much of the increase in "globalization" has occurred, among western European

¹² OECD, "The Interrelationship Between Trade and Technology Policies", TD/TC/WP(92)22, March 1992. Different (lower) numbers and percentages, but the same trends, can be found in OECD, DAFPE/CLP(92)12, October 1992, pp. 8-10.

¹³ OECD, *Globalisation of Industrial Activities*, pp. 48, 51, 73, 140, 154.

¹⁴ For a recent article that captures the enthusiasm for this phenomenon rather well, see Christopher A. Bartlett and Sumantra Ghosal, "What is a Global Manager?", in *Harvard Business Review* (September - October 1992), pp. 124-32.

¹⁵ *Ibid.*, p. 127.

¹⁶ Pari Patel and Keith Pavitt, "Large Firms in the Production of the World's Technology: An Important Case of Non-Globalization", *Journal of International Business Studies*, Vol. 22, No. 1 (First Quarter 1991), 3, 6-7, 10, 14, 16-7.