

Coordinating globally dispersed research centres of excellence—the case of Philips Electronics

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Abstract

Multinational enterprises (MNE) have increased their research and development (R&D) investment in foreign countries, especially since the early 1980s. This quantitative growth is accompanied by a qualitative dimension which is the restructuring of global R&D towards corporate-wide centres of excellence (CoEs) in highly internationalized corporations. The basic assumption of this paper is that the capability of coordinating these centres is a decisive competitive advantage and at the heart of a global learning process. The paper explicitly analyses research CoEs. It aims at developing possible mechanisms for their coordination and a conceptual framework for the use of suitable coordination mechanisms. A case study on the electronics company Philips illustrates the conceptual part. Finally, a model of coordinating global research CoEs is derived.

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1. Introduction: empirical trends in the R&D internationalization and the significance of coordination

Although research and development (R&D) as a business function is not internationalized as much as production or marketing, empirical research on the globalization of R&D in multinational enterprises (MNE) can be summarized by the following results (see among others Archibugi and Michie, 1995; Archibugi and Iammarino, 1999; Boutellier et al., 1999; Cantwell and Janne, 1999; CEC, 1998; Kuemmerle, 1999; Florida, 1997;

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Meyer-Krahmer and Reger, 1999; OECD, 1998; Pearce, 1999; Serapio and Dalton, 1999):

1. R&D investment abroad has increased since the early 1980s;
2. the globalization of R&D is yet better described by ‘triadization’ because R&D target regions/countries are mainly North America, Japan, and western Europe;
3. R&D units in foreign countries have gained more responsibilities and competencies besides the still-existing traditional mode of adapting products developed in the home country and technical support for production abroad; and
4. the quantity (measured by R&D budget spent abroad to total R&D budget) and quality (function, organization, and responsibility) of R&D activities abroad differs very much between countries of origin, sectors, technology fields, and even companies.

An own survey among 209 of the world’s most technology-intensive corporations in North America, Japan, and western Europe, with R&D expenditures of US\$100 million or more, confirm the abovementioned results (see Edler et al., 2002). The degree of R&D internationalization in quantitative terms, defined as the share of the overall R&D budget spent for R&D beyond the borders of a company’s home country, increased in the sample companies (see Table 1). A striking imbalance comes to the fore if one looks at the geographic origin of the companies. Japanese companies are much less inclined to generate technological knowledge abroad and to engage in international R&D activities than North American or western European ones. The forward projection for the year 2001 from the point of view of the companies investigated indicates that the internationalization of R&D proceeds. Using the regression method, a still-growing trend towards internationalization of R&D for the year 2004 can be extrapolated.

To find out how the R&D activities in own labs are spread around the globe, each company was asked to indicate its activities within the six different economic regions North America, western Europe, eastern Europe, Japan, Asia/Pacific other than Japan, and Latin America (see Edler et al., 2002, p 159). The sample as a whole mentioned western Europe most often, followed by North America (see Fig. 1). The regional origin of the companies makes a difference. Just as Japanese companies spend relatively little R&D money abroad, as compared to the rest of the sample, they obviously do not regionally diversify their international R&D activities that much and most heavily concentrate on western Europe and North America. The companies with their headquarters in North America mention western Europe almost twice as often as Japan. At the same time, the so-called Asian Tigers seem to have gained some

Table 1
Percentage of R&D budget spent outside the home country

1995	1998	2001	Estimated 2004	Investigated companies from
25.75	30.27	33.37	43.72	Western Europe
4.67	7.02	10.52	14.56	Japan
23.17	28.38	31.67	35.07	North America

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