

various countries on several continents. Out of this value, Nokia captured 50%, first-tier hardware vendors captured 11%, first-tier intangible vendors captured 3%, second- and subsequent-tier vendors-of-vendors in both categories captured 19%, wholesalers captured 3.5%, and retailers captured 11%. Therefore, Nokia captured most of the value added, which went to paying Nokia's indirect and direct in-house labor costs such as assembly, R&D, marketing, and sourcing but also includes its "pure" profit.

From the national economy's point of view, it is more important to consider the geographic breakdown of the total value added than to consider the companies. Even if virtually all hardware components are manufactured outside Finland, approximately 38% of N95's total value added is created domestically if the country of final sale is abroad. If the handset is sold in Finland, then roughly half (55%) of the total value added is created domestically. Taking into account both locations of final assembly and markets being served globally, over the life cycle of the product, on average, 40% of the value added was captured in Finland.

As in the case of Finland, the old EU member states have been the most frequent offshoring destination for Norway, whereas for Sweden, the most prevalent offshoring region has been the new EU member states. The most frequent destination of Danish companies has, however, been Asia (Statistics Denmark, p. 26).

Böckerman and Riihimäki (2009) examined the employment effects of offshoring using linked employer-employee data for the period 1999-2004.⁴ Their estimates indicate that intensive outsourcing (more than twice the two-digit industry median) neither reduces employment nor has an adverse effect on low-skilled workers. Hakkala and Huttunen (2010) used the same data to examine the effects on home-country employment. They found that offshoring is associated with an increase in the share of home-country tasks that are non-routine or interactive. Furthermore, offshoring to a low-income country increases the risk of job loss for workers in routine and non-interactive occupations.

R&D internationalization and offshoring

Overseas operations not only include production tasks but also include R&D. Finnish manufacturing firms currently employ 26,000 R&D employees abroad (EK 2010), which approaches their domestic R&D employment of 27,000 (Statistics Finland 2009). The number of overseas R&D employees has risen significantly over the past 15 years; in 1997, Finnish companies had only 3,300 R&D employees abroad (TT 1999). The largest firms have played a significant role in this development not only in Finland but also in Sweden and in Denmark (Braunerhjelm et al., 2010).

The rising number of overseas R&D employees does not necessarily mean that those jobs have been relocated; foreign units may do tasks that were never done domestically or may be expanding indigenously. Therefore, offshoring and foreign expansion are not synonymous.

Some 15% of companies with 50 or more employees in Finland have offshored R&D tasks (Table 3.2). In manufacturing, the top destinations are China, the old EU member

⁴ In this study, the definition of offshoring is based on firms' use of imported intermediate inputs.