

Chapter 2

Framework of Services Offshoring

Abstract In this second chapter, we develop a “Framework of Services Offshoring”, which contains a thorough analysis of the classification and drivers of services offshoring. The classification, in Sect. 2.1, examines how services offshoring is defined, which forms it can take, and which service activities are involved. First, we compare and contrast outsourcing and offshoring before deriving our own working definition of services offshoring. Second, we focus on the *service* part of services offshoring, defining services and describing the implications of their new tradability. We also classify services trade and the relevant service activities. Third, we focus on the *offshoring* part of services offshoring and discuss the make-or-buy decision in efficiency-based, resource-based, and transaction costs-based theories of firms. Section 2.2 identifies the main drivers of services offshoring. We first describe changes in the global environment, namely developments in ICTs as well as multilateral and regional liberalization of trade in services. We then discuss market-oriented, cost-oriented, and procurement-oriented services offshoring motives of firms, also including newer developments. Finally, we focus on developments in the destination countries, namely the availability of human capital, the presence of multinational companies, and the liberalization of service sectors.

2.1 Classification of Services Offshoring

The classification of services offshoring explains what services offshoring means and which forms it can take. The forms can vary with respect to the offshored services and the organizational form offshoring can take. We contribute to the growing services offshoring literature in a number of ways. First, we clearly distinguish outsourcing from offshoring, and offer a general and a special working definition of services offshoring in Sect. 2.1.1, which constitutes a contribution in the light of the existence of many misleading definitions. Second, many technical papers, such as econometric estimations or theoretical models, reduce services to a technical input

factor. In the “real world”, however, services can take different forms and can be provided in different ways, which is taken into account in Sect. 2.1.2. Third, outsourcing and in-house production are often assumed to be given, when, however, they are the result of a previous make-or-buy decision and are thus endogenous. Section 2.1.3 explains the make-or-buy decision in efficiency-based, resource-based, and transaction cost-based theories of firms.

2.1.1 Definition of Services Offshoring

Despite the public debate on the advantages and disadvantages of buying goods and services from abroad, it seems that neither a terminology nor a definition of the phenomenon has become universally accepted. Often, terms such as outsourcing, international outsourcing, offshoring, offshore outsourcing, and even fragmentation of production or FDI, are used interchangeably to refer to this phenomenon but, strictly speaking, they do not mean the same thing. Different economists use different definitions and nuances, and thus a clear definition of offshoring is essential for our study. In the following two sections, we define the terms outsourcing (Sect. 2.1.1.1) and offshoring (Sect. 2.1.1.2) and distinguish them from each other. The third sub-subsection derives our own general and special working definition of services offshoring (Sect. 2.1.1.3).

2.1.1.1 Definitions of Outsourcing

Traditionally, firms produce a large percentage of their goods in-house and thus possess a *high degree of value added*. Such firms are also called vertically integrated. In the extreme case they encompass all levels of the value chain, from R&D via the procurement of inputs and their logistics, the production process and assembly, the logistics of the products and services, and marketing and sales to after-sales services. Supporting processes for all stages of the value chain include human resources, accounting and finance, call centers, and IT. Complete vertical integration often results in immobile and inflexible firms that struggle to adapt to the requirements of globalization. Especially, the pace of information flows is reduced within such a corporate structure. Therefore, manufacturing firms have, since the 1960s, started to *break the value chain down* by delegating parts of their value chain to specialized external contractors. In particular, non-core activities not considered decisive for the firm’s performance were contracted out. This phenomenon was called outsourcing, a neologism which is made-up of the terms *outside resource using*. The written-out form indicates that resources from an external supplier outside the firm are used, be it from the domestic country or from abroad.

Box 2.1 presents selected definitions of (services) outsourcing published in recent years which emphasize different aspects of outsourcing. The definition of Abramovsky et al. (2004) corresponds to the general meaning of outsourcing derived above, which includes material and service inputs as well as domestic and foreign inputs, provided they are purchased and not produced in-house. Bhagwati et al. (2004) underline the meaning of *services* within the outsourcing discourse. They show that, at the beginning of the 1980s, the term outsourcing describes the external procurement of physical inputs, while in 2004, the same term has a completely different meaning. Their focus on international service inputs constrains the more general definition. Pujals (2005) and Kirkegaard (2004) also concentrate on services, and define outsourcing as the provision of services from an *outside specialist provider*, whereby the former points out that the nationality of the provider is irrelevant.

Some authors relate “outside” to resources outside the *frontier* of a country, which also comprises in-house production. Amiti and Wei (2005) remark:

“Some people interpret ‘outside’ to mean outside the firm, and others outside the country. Both usages are common (Amiti and Wei 2005, p. 311).”

Amiti and Wei (2005) use the specific term “international outsourcing” to make sure that they include only the procurement of foreign inputs. Their definition of international outsourcing comprises both the external and in-house provision of goods and services. The definition of Anderton et al. (2002) focuses on the international relocation of low-skill-intensive parts of production and thus limits outsourcing, to low-wage labor-abundant countries.

In our opinion, the definition of outsourcing meaning the relocation of formerly in-house-produced inputs to an external firm has become more widely accepted. Hence, outsourcing in our study relates to this definition. A special sort of outsourcing is BPO, which can be defined as “a contractual service to completely

Box 2.1: Selected definitions of outsourcing

“Outsourcing is specialisation outside the firm. This occurs when firms opt to ‘buy’ rather than ‘make’ in-house. That is, outsourcing involves greater specialisation as firms switch from sourcing inputs internally to sourcing them from separately owned suppliers (Abramovsky et al. 2004, p. 7).”

“It [outsourcing] referred now to a specific segment of the growing international trade in services. This segment consists of arm’s length [or what Bhagwati (1984) has called “long-distance] purchase of services abroad, principally, but not necessarily, via the electronic mediums such as telephone, fax and internet and includes, for example, phone call centers staffed in Bangalore to serve customers in New York and X-rays transmitted digitally from Boston to be read in Bombay (Bhagwati et al. 2004, p. 2).”

“Outsourcing refers to firms purchasing services from outside specialist providers. Conversely, the Word “Insourcing” refers to the production of something inside a company. Outsourcing can be domestic or abroad (Pujals 2005, p. 4).”

“Outsourcing refers to companies (or governments) purchasing services from outside specialist providers at arms length. This may include a wide range of services, such as cleaning, catering, security, building maintenance, as well as business services such as IT support, consulting, advertising, payroll management, accounting or specialist design (Kirkegaard 2004, p. 22).”

“In this paper, we focus on international outsourcing, defined as the procuring of service or material inputs by a firm from a source in a foreign country. This term includes both intra-firm international outsourcing (by which the foreign provider of the input is still owned by the firm) and arm’s-length international outsourcing (by which the foreign provider of the input is independent from the firm using the input). International outsourcing is part of a country’s imports (of goods and services) (Amiti and Wei 2005, p. 313).”

“Outsourcing occurs where firms take advantage of both the low-wage costs of relatively labour abundant countries and modern production techniques – whereby the process of manufacturing a product can be broken-down, or fragmented, into a number of discrete activities – and move the low-skill-intensive parts of production abroad, but continue to carry out the high-skill intensive activities themselves.

‘Moving the low-skill-intensive parts of production abroad’ does not necessarily mean that the firm is involved in outward foreign direct investment, it can also mean that the low-skill parts of production are closed-down and replaced by imports – of either intermediate or finished goods – from low-wage countries (Anderton et al. 2002, p. 3).”

Source: own illustration

manage, deliver, and operate one or more (typically IT-intensive) business processes or functions” (Mattoo and Wunsch-Vincent 2004, p. 767). *Insourcing*, on the other hand, means the opposite – that externally purchased inputs get vertically integrated into the value chain and are produced in-house.

2.1.1.2 Definitions of Offshoring

In the following, the notion of offshoring is defined. Originally, the term was used in financial economics, since many offshore financial centers are former British colonial islands located off-shore of the mainland such as Singapore, Hong Kong, and the Caribbean Islands. Today, offshoring in the financial context must rather be understood in juridical than geographical terms. That means offshore financial centers describe locations with zero or very low tax rates, weak financial regulation,

as well as strict banking secrecy and anonymity. Another feature is that financial institutions in offshore centers are engaged primarily in business with non-residents (IMF 2000).

The term offshoring has extended from its solely financial meaning to the term materials (or goods) offshoring and more recently also services offshoring. The starting point is a firm which is located in the domestic country. Offshoring is used as a general term to describe all kinds of entrepreneurial activities in a country other than the domestic one in order to support a company's business. The foreign activities can happen for several reasons, but a main motive of firms is to exploit wage differentials between countries.

Box 2.2 presents selected definitions of offshoring, which are more homogeneous than in the case of outsourcing. Garner (2004) and Abramovsky et al. (2004) describe probably the most general definition, where offshoring means the relocation of jobs and production abroad. Garner (2004) outlines the two forms of offshoring, namely within or outside the MNC, and distinguishes offshoring from the term outsourcing. Abramovsky et al. (2004) stress that offshoring can be undertaken to serve foreign markets or to use the output back in the home country. They thereby refer to the existence of several offshoring motives. The definitions of Erber and Sayed-Ahmed (2005) and Sinn (2005) focus on cost-savings as the main motive.

As mentioned in the previous sub-subsection, Amiti and Wei (2005) define international outsourcing as the procurement of inputs from abroad, whereas Anderton et al. (2002) define outsourcing as the relocation of in-house-produced goods to low-wage countries. Strictly speaking, their definitions of outsourcing should be considered definitions of offshoring. In the context of his "bazaar hypothesis", which has spawned a large debate among economists not only in Germany, Sinn (2005) on the one hand limits offshoring to the relocation of internal services to a foreign subsidiary, while on the other hand, he calls the provision from foreign suppliers, which is the complementary aspect of the term offshoring, foreign outsourcing. Probably the clearest definition is given by Grossman and Rossi-Hansberg (2006a) who distinguish the term offshoring from outsourcing. The former thus focuses on the geographical scope of the activities, while the latter captures the organizational form.

As in the case of outsourcing, there exists no general definition of offshoring, but many economists understand it to mean the relocation of production processes to another country, be it in-house or externally. A specific form of offshoring is

Box 2.2 Selected definitions of offshoring

"The term "offshoring" refers to the relocation of jobs and production to a foreign country. The relocated jobs and production could be at a foreign office of the same multinational company or at a separate company located abroad. In contrast, the term "outsourcing" does not necessarily imply that jobs and production are relocated to another country (Garner 2004, p. 6)."

“Offshoring occurs when firms move production overseas. This could be to serve foreign markets – for example to substitute for exports – or to import overseas produced imports for use back [. . .] (Abramovsky et al. 2004, p. 7).”

“Offshoring can be defined as relocation of business processes (including production, distribution, and business services, as well as core activities like research and development) to lower-cost locations outside national borders. This term assumes the perspective of the country of origin (Erber and Sayed-Ahmed 2005, p. 4).”

“Offshoring is the practice by which companies outsource processes, chiefly IT-based services, across large distances to other parts of the world, often low-wage countries (Schaaf 2004, p. 3).”

“The Bazaar-Hypothesis acts on the assumption that more and more German manufacturing companies relocate labor-intensive parts of their value chains to foreign subsidiaries (offshoring) or purchase them from providers abroad (foreign outsourcing) in order to escape from high labor costs (own translation of Sinn 2005, p. 5).”

“The terms offshoring and outsourcing are sometimes used interchangeably, but we believe that such usage is confusing. We prefer to use “offshoring” to mean the performance of tasks in a country different from where a firm’s headquarters are located and reserve “outsourcing” for the performance of tasks under some contractual arrangement by an unrelated party. Thus, offshoring can be conducted in-house or at arms-length, while outsourcing can be performed in a domestic or foreign location (Grossman and Rossi-Hansberg 2006a, p. 3).”

Source: own illustration

nearshoring which includes the relocation to countries that are geographically closer to the country of origin. In the German case, the move to CEECs would be subsumed under nearshoring. Accordingly, Schaaf’s (2004) definition of offshoring mentions the feature of large distances between the domestic and the foreign firms. A new buzzword used by service providers and consulting firms is *bestshoring*, reflecting the experience of firms that not all offshoring decisions are satisfactory and strategically effective. Finally, the term *onshoring* describes the shift of production processes that have formerly been performed abroad back to the domestic country.

2.1.1.3 Working Definition of Services Offshoring

Outsourcing asks for the “source” of production, i.e., whether the input is produced by an internal source (self-production or subsidiary) or an external source

Dimension: Country	outside	(3) <i>Captive Offshoring/FDI</i>	(4) <i>Offshore/International Outsourcing</i>
	inside	(1) <i>Captive Home Production</i>	(2) <i>Onshore/Domestic Outsourcing</i>
		inside	outside
		Dimension: Firm	

Fig. 2.1 Classification of offshoring
 Source: own illustration

(independent supplier/subcontractor), wherever the source might be located geographically. Offshoring, on the other hand, asks for the “shore”, or country of production, i.e., whether the input is produced at home or abroad regardless of the source. The matrix in Fig. 2.1 presents the synthesis of outsourcing and offshoring.

There are four possible combinations of both criteria:

1. An internal source of production in the home country (*captive home production*),
2. An external source of production in the home country (*onshore or domestic outsourcing*),
3. An internal source of production abroad (*captive offshoring or FDI*), and
4. An external production abroad (*offshore or international outsourcing*)

Offshoring comprises both the internal (3) and external production (4) in a foreign country.

There are three possibilities for firms that start out as exclusively domestic producers to arrive at offshoring. First, firms that already practice onshore outsourcing begin to recruit foreign providers (from 2 to 4). Second, firms that have not yet outsourced start to consult foreign suppliers (from 1 to 4). And third, some firms that are not yet engaged in foreign production might start to build up a subsidiary abroad (from 1 to 3) (Abramovsky et al. 2004).¹

Many authors focus either exclusively on materials offshoring or do not explicitly distinguish services offshoring. Exceptions are, for example, Kirkegaard (2004), Bhagwati et al. (2004), and Amiti and Wei (2005). Due to the increased relocation of business services, our definition seeks to reduce offshoring to services offshoring. To sum up, our working definition must so far meet three main criteria. First, the country of production plays the decisive factor, as only foreign production is concerned. Second, the boundary of the firm is neglected, so that both internal and

¹Theoretically, one could also imagine a firm that previously outsourced to a domestic supplier and instead builds a subsidiary abroad (from 2 to 3). Practically, however, this might rarely be the case, as the foreign subsidiary requires internal knowledge about processes and services that are no longer performed in-house.

Box 2.3 Working definitions of services offshoring

General definition of services offshoring:

“Services offshoring *in the broader sense* comprises all kinds of foreign service activities of a multinational company that are aimed at supporting its domestic production, and include both captive offshoring and offshore outsourcing.”

Special definition of services offshoring:

“Services offshoring *in the narrower sense* designates the provision of service inputs from a foreign supplier that are produced abroad mainly for cost reasons and re-imported to the home country. The foreign purchase either happens externally, via an independent supplier (offshore outsourcing), or internally within the multinational company (captive offshoring).”

Source: own illustration

external production are considered simultaneously. And third, the working definition focuses on services. These three criteria are reflected in our *general definition* of services offshoring (or services offshoring in the broader sense) in Box 2.3.

The motives behind an offshoring decision can be mainly market-oriented, cost-oriented, or procurement-oriented (see Sect. 2.2.2). Services offshoring is expected to have the potential for harming domestic labor markets when formerly home-produced services are relocated for cost reasons and re-imported to the country of origin. Hence, the previous domestic production and the offshore production are substitutes. Therefore, the *special definition* of services offshoring (or services offshoring in the narrower sense) focuses on cost-oriented motives (see Box 2.3). In most cases, these re-imports are composed of intermediate inputs that are further processed into final goods in the home country. However, they could also consist of final goods, as global corporations in the major industrialized countries are not strictly involved in assembly (see Sect. 4.1).

The combination of captive offshoring and offshore outsourcing in our working definitions has at least two advantages over definitions that only focus on one aspect. First, the decision for in-house production or external procurement has become increasingly determined by cost-oriented motives rather than by strategic reasons. Thus, FDI might be chosen due to tax benefits in the destination country. Moreover, FDI often arises in the form of mergers and acquisitions (M&As), where already existing foreign companies are bought up, and the foreign production is not really self-performed (Abramovsky et al. 2004). Focusing solely on FDI could therefore be misleading.

Second, many studies only center on one aspect of offshoring when analyzing possibly related labor market effects. In the 1980s, economists focused on the impact of growing international trade flows on domestic labor markets, whereas in the 1990s, many studies measured the effects of FDI on home employment. Our working definition in the narrower sense has the advantage of integrating both.

Services offshoring and subsequent re-imports of intermediate or final goods from the offshore-location (within or outside the MNC) to the country of origin can be considered a special form of international trade. Hence, an integrated definition protects against possibly misleading conclusions when evaluating the labor market effects of offshoring.

2.1.2 Services and their Tradability

Services are of particular interest, since their significance has grown in terms of both quantity and quality, which also applies to Germany. In *quantitative* terms, services clearly dominate the *structural distribution of German FDI*. In 2005, the share of service investments in the worldwide stock of German outward FDI constituted more than 70.6% compared to 58.7% in 1995. This corresponds to a growth rate of 480% over the period compared to a total growth rate in outward FDI stocks of 399%. One could object that large parts are composed of investment companies, but the share excluding the latter nevertheless reached 59.4% in 2005 compared to 53.2% in 1995 (Deutsche Bundesbank, several time series). Service investments appear to be much faster and less costly compared to manufacturing investments, as neither large factory buildings nor assembly lines are needed.

The *foreign employment of German MNCs* also reflects the process towards the tertiarization of the economy. In 2005, 41.7% of the employees in foreign subsidiaries were occupied in the service sector, while this share was only 28.1% in 1995. Thus, services employment grew by 260% over the period, while total employment increased by 176% (Deutsche Bundesbank, several time series). Not only the foreign in-house production, but also the external procurement of services abroad is expected to grow. An analysis of the Deutsche Bank Research predicts that the *process of relocating IT-services abroad* will yield an enormous growth potential for the German economy, especially for small- and medium-sized firms. The study expects that offshoring will reduce the prices of IT-services, which will lead to a further ICT penetration of the German economy (Schaaf 2004).

In *qualitative* terms, services have undergone a tremendous change. One and a half decades ago, most services were considered non-tradable, but the emergence and development of new ICTs has contributed to overcoming geographical distance. This development has started to break down the prior universality of the uno-actu-principle, which is elaborated in the following sub-subsection (Sect. 2.1.3.1). Services are further classified into their modes of provision (Sect. 2.1.3.2), before presenting several classifications of service activities (Sect. 2.1.3.3).

2.1.2.1 Services and the Uno-Actu-Principle

The first classifications of services are found among the classical economists, who distinguished productive from unproductive labor depending on whether the

worker was involved in the production of goods or services. T.P. Hill's "On Goods and Services" (1977) traces this distinction back to Adam Smith's *Wealth of Nations* (1776):

"[. . .] in the chapter on capital accumulation Smith was at pains to distinguish a labour service which "fixes and realizes itself in a particular subject or vendible commodity" from labour services which "generally perish in the very instant of their performance". The first kind of labour service was described as "productive" and the second as "unproductive" (Hill 1977, p. 330)."

Hill points out that the classical view restricts the concept of wealth to material goods, where labor is only considered productive when it materializes in goods. However, some classical economists recognized the potential of certain services to raise LP, such as J.S. Mill's *Principles of Political Economy* (1852) that categorizes service industries in productive labor (e.g., education and health) and unproductive labor. According to Mill, services that raise LP contribute indirectly to the production of goods.

"Such labour may be said to be productive indirectly or mediately, in opposition to the labour of the ploughman and the cotton spinner, which are productive immediately (Mill 1852, p. 60, taken from Hill 1977, p. 331)."

Hill further mentions that "the distinction between productive and unproductive labor has been perpetuated through Marx's influence in the distinction drawn in the MPS (material product system) between the material and non-material spheres of production" (Hill 1977, p. 311).

"The non-material sphere embraces all activities directed towards rendering services to the population in order to satisfy certain personal and social needs of people. The features of services are, first, that the time they are rendered is, as a rule, the same as the time they are consumed, and second, that the object of the application of labour is man himself, while the object of the application of labour in the production of material goods are natural things and natural forces (UN 1974, p. xxix, taken from Hill 1977, p. 329)."

Neoclassical economists, however, find little relevance in distinguishing between goods and services. "Marshall, for example, dismissed services as "immaterial products" while present day economists tend to describe them as "immaterial goods" or simply as "goods" (Hill 1977, p. 315). As, according to Hill, services and goods are basically different, he provides his own definition of services (see Box 2.4). When one person agrees to a service, she orders it. This leads to the activity of another economic agent, which in turn results in the change in the condition of the person and of goods, respectively. Thus, Hill differentiates between the change of a person and of a good. The condition of a person can be changed physically by services such as passenger transportation, hairdressing, and medical treatment or mentally by services such as education and communication. Services that affect goods are, for example, transportation of goods, postal deliveries, repairs, cleaning and maintenance.

"This definition accords with the meaning of the word "service" as used in ordinary speech and by economists. It is consistent with the underlying idea which is inherent in the concept of a service, namely that one economic unit performs some activity for the benefit of another. In this way, one unit "serves" the other (Hill 1977, p. 318)."

Box 2.4: Selected definitions of services

“A service may be defined as a change in the condition of a person, or of a good belonging to some economic unit, which is brought about as a result of the activity of some other economic unit, with the prior agreement of the former person or economic unit (Hill 1977, p. 318).”

“Services are not separate entities over which ownership rights can be established. They cannot be traded separately from their production. Services are heterogeneous outputs produced to order and typically consist of changes in the condition of the consuming units realised by the activities of the producers at the demand of the customers. By the time their production is completed they must have been provided to the consumers (UN 2002, p. 7).”

“Services are usually perceived as intangible, invisible, perishable and requiring simultaneous production and consumption, while goods are tangible, visible and storable, and do not require direct interaction between producers and consumers (UNCTAD 2004, p. 145).”

Source: own illustration

The ‘Manual on Statistics of International Trade in Services’ which has been developed and published jointly by the WTO, the European Commission, the IMF, the OECD, UNCTAD, and the UN, respects the 1993 System of National Accounts’ (SNA)² definition of services (see UN 2002, in Box 2.4). This definition refers to the above definition of Hill by mentioning the changes in the conditions of the involved parties. It further outlines the impossibility of establishing ownership rights over services and the non-separability of services from their production when being traded (UN 2002).

It might be reasonable to contrast goods and services when formulating a general definition of services, as both singly and in combination constitute the only outputs in the value-adding production process of the economy. Due to the limited durability of services, they are considered not storable or transferable. Hence, *direct contact* between the producer and consumer of a service is required, which is called the *uno-actu-principle*. The Latin term *uno actu* in the ablative case can be translated into the English term ‘through/with one action’ and implies that a service must be produced and consumed on site. According to the *uno-actu-principle*, either the consumer of a service has to seek the producer out or vice versa. A typical example is the service of a haircut, where the person that wishes a haircut (consumer) has to seek out the hairdresser (producer). Goods, contrariwise, do not demand direct interaction between producer and consumer due to their tangibility, visibility, and storability (see UNCTAD 2004, in Box 2.4).

²The Manual conforms with and explicitly relates to the SNA 1993 and the fifth edition of the IMF’s Balance of Payments Manual.

This distinction between services and goods should not be understood in a strict sense. First, some services have features of goods and are tangible (e.g., books or the printed report of a management consultant), visible (e.g., theatre), and storable (e.g., music or voice-mail). Second, most goods have the purpose to provide a service or function. Third, goods and services are mostly interacted, since in the majority of cases goods depend on service inputs in their production and vice versa. And fourth, goods and services are often consumed simultaneously (e.g., airline travel requires aircraft) (UNCTAD 2004).

The ‘Manual on Statistics of International Trade in Services’ quotes the 1993 SNA on this issue and lists service sectors that have many characteristics of goods, such as services “concerned with the provision, storage, communication and dissemination of information, advice and entertainment in the broadest sense of those terms – the production of general or specialized information, news, consultancy reports, computer programs, movies, music, etc. The outputs of these industries, over which ownership rights may be established, are often stored on physical objects – paper, tapes, disks, etc. – that can be traded like ordinary goods. Whether characterized as goods or services, these products possess the essential characteristic that they can be produced by one unit and supplied to another, thus making possible division of labour and the emergence of markets” (UN 2002, pp. 7–8).

This ambiguity makes it difficult to give a general definition of services. Even the GATS renounces such and defines only services trade in terms of four different modes of supply (see Sect. 2.1.2.2). The ‘Manual on Statistics of International Trade in Services’ and the UNCTAD (2004) outline the difficulties of a general definition of services:

“These and other complications make it difficult to formulate a clear-cut definition of services. No commonly accepted definition exists (UNCTAD 2004, p. 145).”

Recent developments in ICTs, however, have made it possible to uncouple information from its physical memory, rendering the transfer of huge amounts of data possible within a few seconds (see Sect. 2.2.1.1). Thus, the universality of the uno-actu-principle has been called into question. Henneberger and Ziegler (2001) differentiate between three services categories which is based on the classification of Bhagwati (1987). In the first two categories, the universality of the uno-actu-principle holds, which is shown in Fig. 2.2. The first category contains services where the provider seeks out the user (e.g., transport sector, waste disposal) and pays the transaction costs (TACs), at least the preliminary ones. Hence, this category is characterized by a mobile provider, but immobile user. The inverse case happens, when the user (consumer) needs to seek out the provider (e.g., retail, wholesale, tourism sector) and thus pays the TACs in the second category. Bhagwati (1987) also mentions a further case where both the provider and the user are mobile, so that the service (e.g., haircuts, tailor’s suits, lectures, etc.) can be provided in either’s location. This hybrid case should be excluded from our consideration as, in reality, this general case specializes into either the first or the second category. The third category does not require personal contact between the provider and the user, as the emergence of ICTs has contributed to overcoming

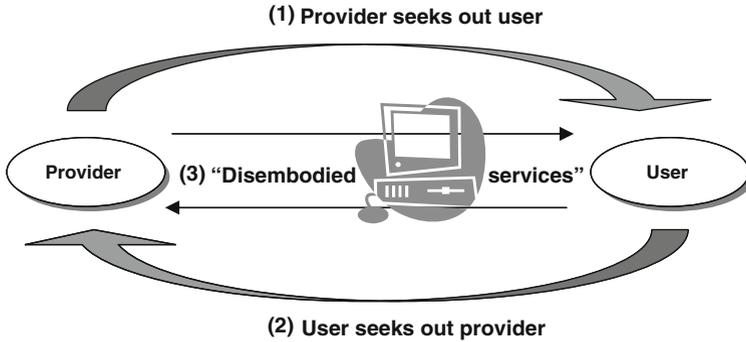


Fig. 2.2 Disembodied services

Source: own illustration based on Bhagwati (1987) and Henneberger and Ziegler (2001)

geographical distance in the formerly inviolable service sector. As the physical proximity becomes inessential, this services category is called *disembodied services* or “long-distance” services (Bhagwati 1987, pp. 552–553).

2.1.1.2 Classification of Services Trade

Classification of Service Provision according to the Geographical Location of Agents

A proposition of service classification is made by Henneberger and Ziegler (2001) who classify tradable services according to the *geographical location of the consumer and producer*. Although the authors focus on FDI as the only form of foreign production, their classification can easily be extended to the form of offshore-outsourcing. Figure 2.3 shows the four different combinations of service provision. Let us start with the situation where the producer is located in the domestic country (on the left side). If the consumer is situated in the home country, both the production and the provision of the service occur at home. If the consumer is situated abroad, the domestic producer must export its services to the foreign location.

Let us now assume that the producer is located abroad (on the right side). This could be either in the form of an affiliated branch or in the form of an independent service provider. If the producer abroad has to serve a consumer in the home country, the services are produced abroad and (re)imported to the domestic country. If the producer abroad serves the foreign market, the production and the provision of services happen on site abroad. Services trade flows are only included in the two grey-shaded areas, i.e., the producer and the consumer are located in different countries. Thus, this matrix only covers the flows of disembodied services, but not services embodied in people. The latter is included in the next classification of services trade.

		Location of the Producer	
		Home Country	Abroad
Location of the Consumer	Home Country	Production and provision of services in the home country.	Service production abroad and (re)imports to the home country.
	Abroad	Service production in the home country and exports to the foreign location.	Production and provision of services abroad.

Fig. 2.3 Classification of service provision
 Source: own illustration, taken and modified from: Henneberger and Ziegler (2001), p. 21

Classification of Services Trade According to the Modes of Service Supply in the GATS

The GATS, which entered into force on 1 January 1995, was reached in the Uruguay Round and constitutes the first attempt to extend internationally agreed rules and commitments on international trade to services trade (see Sect. 2.2.1.2). The WTO designates this achievement as “perhaps the most important single development in the multilateral trading system since the GATT (General Agreement on Tariffs and Trade) itself came into effect in 1948” (WTO 1999, p. 1). Besides the scope of the GATS, the first article out of 29 defines services trade in terms of four different modes of supply, namely cross-border supply, consumption abroad, commercial presence in the consuming country, and presence of natural persons. The categorization is subject to the mode or place of service supply and has become widely accepted.

The *cross-border supply of services* is the first mode, which describes the supply of a service “from the territory of one [WTO] Member [country] into the territory of any other Member” (UN 2002, p. 11). It allows the supplier and buyer to remain at their respective locations, as the services can be transferred mostly electronically via ICTs. Bhagwati et al. (2004) note that ICTs only facilitate the transfer of tremendous amounts of data and information, while the transfer would principally also be possible via conventional communication methods. This mode of supply is equivalent to the normal form of trade in goods and is also considered the most direct form of services trade, as it corresponds to the GATT in many ways, e.g., the clear geographical distance of both agents. A major difference is the fact that this form of services trade cannot yet be submitted to customs examinations. One can distinguish between individual suppliers, such as freelance designers, architects,

and advisors, on the one hand, and suppliers that belong to a company, such as call centers, back offices, and software programmers, on the other hand (Bhagwati et al. 2004; UN 2002; WTO 1999).

Consumption abroad constitutes the second mode of supply and covers the supply of services “in the territory of one [WTO] Member to the service consumer of another Member” (UN 2002, p. 11). Tourism is the prime example of where the service is consumed at the location of the supplier. Other examples include medical treatments of non-residents, the provision with education of foreign students (e.g., language courses), as well as ship or aircraft repair, where only the property of the consumer is located abroad (UN 2002; WTO 1999).

In the third mode of supply, the provision happens “by a service supplier of one [WTO] Member, through *commercial presence* in the territory of any other Member” (UN 2002, p. 11). This mode allows for direct contact between the producer and consumer through the establishment of a foreign branch, which is decisive for services, such as banking, legal advice, and communications. It embraces various stages of the value chain, such as production, distribution, marketing, sales, and delivery. Medical services by a foreign-owned hospital and courses in a foreign-owned school are further examples. Foreign workers are not necessarily employed if a local workforce is sufficient (UN 2002; WTO 1999).

In the fourth mode of supply, the service procurement is effected “by a service supplier of one [WTO] Member, through *presence of natural persons* of a Member in the territory of any other Member” (UN 2002, p. 11), i.e., individuals move to another location where they provide services. This could either be in combination with mode 3 or without the necessity of a commercial presence. The former includes domestic managers or specialists that are sent to a foreign branch, while the latter includes individuals that are employed by a foreign firm or that are self-employed. Mode 4 implies temporary migration, as only non-permanent employment is covered. Since the GATS does not define “non-permanent”, the concretization depends on the countries’ commitments, which generally involves between 2 and 5 years. Services in the domain of construction and consulting as well as in the medical and educational sector are further examples of mode 4 services (Bhagwati et al. 2004; UN 2002; WTO 1999).

The four modes can be classified according to the territorial presence of the transactors beginning with the consumers (UN 2002, p. 22):

1. Consumer outside the territory of residence: consumption abroad (mode 2).
2. Consumer inside the territory of residence:
 - (a) Supplier outside the territory of the consumer: cross-border supply (mode 1).
 - (b) Supplier inside the territory of the consumer:
 - Through commercial presence (mode 3).
 - Through the presence of natural persons (mode 4).

Offshoring is often seen as a substitute for mode 4, since jobs move to foreign workers and not vice versa. Services that were formerly only provided by the

presence of natural persons can now be traded electronically according to mode 1. In India, for instance, the share of on site exports through temporary movement of service suppliers (mode 4) in total IT exports has declined, while at the same time, the share of cross-border exports (mode 1) has risen. This is especially the case for low value and high volume activities, such as call center and other back office services (Chanda 2006). Nevertheless, the relationship between mode 1 and mode 4 is considered complementary, since the presence of foreign workers in a country stirs up the firms' awareness of more available talent abroad (van Welsum 2004). Thus, one can argue that the presence of many Indian IT-specialists in the US has influenced the offshoring decisions of American firms in India.

The relationship between mode 1 and mode 3 can likewise be considered complementary, if the commercial presence abroad leads to an increase in cross-border supply. This could be the case when international relocation goes along with growing service imports from the foreign location to the country of origin. Alternatively, international relocation could increase exports from the country of origin to the destination country, which is studied by Pain and van Welsum (2004), but their results are considerably heterogeneous with respect to different services categories. Analyzing further possible relationships among different modes of supply, Chanda (2006) finds that “[t]he most common linkage that emerges is that between modes 3 and 4, where temporary movement of service providers complements commercial presence, and there is a supporting and intermediary role played by mode 1 in this process” (Chanda 2006, p. 4).

Our working definitions of services offshoring comprise mode 1 service supplies, where services can be traded despite the physical distance between the producer and the consumer. The cross-border supply of services can happen in the form of external service providers abroad or in the form of in-house provision. Despite the possibility of FDI, mode 3 services are not considered, as we focus on users in the country of origin and not in the destination country.

2.1.2.3 Classification of Service Activities

As a clear definition of services does not exist, the “pragmatic approach” simply selects activities that are considered services. Even this approach has its difficulties, as the boundaries between the economic sectors are no longer clear cut when the complexity of production processes grows. Kalmbach et al. (2005) show that the terms business services, production-related services, and industry-related services are often used as synonyms. They come to the conclusion that no classification has become universally accepted, but that a multitude of different definitions co-exist (Kalmbach et al. 2005). Therefore, we present several approaches of service classifications in the first part. Since we focus on tradable business services with a potential for offshoring, business activities, commercial services, other business services, technological services, as well as IT and BPO services are defined in a second step.

Several Approaches of Service Classifications

In the *residual approach*, all activities that do not belong to the primary and secondary sector are assigned to the residual service sector. This approach results in ambiguous classifications, where some activities, such as construction, repair or electricity, gas, and water supply, are sometimes classified as in the secondary and sometimes in the tertiary sector. A second approach distinguishes *consumer services* from *producer services*, whereby the first describe final services and the latter constitute intermediate services. A third and early attempt was made by Browning and Singelmann (1975), who differentiated between *distribution services* (transport, storage, retail, wholesale trade), *producer services* (banking, finance, insurance, real estate, engineering, architectural, accounting, legal), *social services* (education, health, welfare and religious services, postal services, governmental services), and *personal services* (domestic, repair, barber and beauty shops, hotels, restaurants, entertainment). A fourth possibility is the classification of services according to their factor- and knowledge-intensity. One can distinguish between *capital-intensive services* (e.g., electricity, telecommunications, and transport), *human-capital-intensive services* (e.g., call centers) or *knowledge-intensive services* (e.g., insurance and professional business services) (UNCTAD 2004).

Related to the last classification is the fifth approach that classifies services according to their required skill-intensity. Barth (1998) distinguishes between *primary services*, including more simple office work, trade and sales, while *secondary services* subsume more qualified activities, such as R&D, management, consulting, and the provision of information (Barth 1998, p. 18). A more detailed classification can be found in the World Investment Report 2004 of the UNCTAD (2004), differentiating low-skill, medium-skill, and high-skill services. While Barth (1998) includes all kinds of service activities, the UNCTAD (2004) focuses only on tradable services. *Low-skill services* “are services with the lowest entry barriers in terms of skills, scale and technology. [...] They tend to need general – but not very high – levels of formal education, a working knowledge of the relevant language and/or basic computer skills” (UNCTAD 2004, p. 151). Examples are data entry and call centers, although some call centers demand a higher skill-intensity. *Medium-skill services* “are complex services that require more advanced skills” (UNCTAD 2004, p. 151). Examples include financial and accounting services, standardized programming work, routine data analysis and processing or back-office services such as ticketing and billing. Specialized training would generally be required (and so also the necessary training institutions). *High-skill services* are “the most creative and skill-intensive end of offshored services, with the most stringent entry requirements. [...] These require advanced skills at high levels of specialization, often with strong educational institutions” (UNCTAD 2004, p. 151). Such services encompass, for instance, R&D, design services, architectural drawings, new software development, animation, medical testing or analysis, and technology systems design (UNCTAD 2004).

Finally, we present the approach of Abramovsky et al. (2004), where the service classification depends on the demand side. Business services are demanded by

Table 2.1 Service classification

Services		
Other services	Business services	
	IT-enabled services	IT-computer services
– Wholesale and retail trade	– Renting of machinery equipment and other	– Software consultancy
– Financial activities	– Research and development	– Data processing and database activities
– Transportation and communication	– Legal activities	– Hardware consultancy
– Real estate	– Market research and management consultancy ^a	– Maintenance and repair of computing machinery
– Hotel and restaurants	– Architectural activities and technical consultancy ^b	
– Public administration	– Advertising	
– Health	– Other business services ^c	
– Education		
– Other services		

Source: own illustration. Based on: Abramovsky et al. (2004, p. 9)

^aBusiness and management consultancy, market research and public opinion polling, management activities of holding companies

^bArchitectural and engineering activities and consultancy, technical testing and analysis

^cLabor recruitment and provision of personnel, investigation and security activities, industrial cleaning, photographic activities, packaging activities, secretarial and translation services, other business activities

private and public companies, while other services are demanded by individuals (see Table 2.1). *Other services* consist of miscellaneous services, such as trade, financial services, transportation and communication, personal services, and social services. *Business services* are further subdivided into IT-enabled services and IT-computer services. The latter “consist of hardware and software consultancy, maintenance and repair of computers, and data processing and database activities. *IT-enabled services* include professional services (legal, accountancy, market research, technical, engineering, architectural, advertising, and consultancy), but also other more diverse activities such as labour placement agencies, renting of machinery, R&D, and call centres” (Abramovsky et al. 2004, p. 9). The smaller category *IT-computer services* thus comprises such services that are in direct contact to information technologies. The larger and expanding category IT-enabled services covers all services that are only enabled by information technologies (Abramovsky et al. 2004).

The Definition of Business Activities

Kalmbach et al. (2005) select eight services out of 27 from the German input-output tables, which they define as *business activities* in the broader sense.

Consumer-related³ and social services⁴ are not considered, since the former in general do not represent typical offshoring services and the latter are not tradable. Business activities comprise ‘other business activities’ in a narrower sense (sector 62), as well as the following seven sectors: ‘wholesale, trade and commission excl. motor vehicles’, ‘post and telecommunications’, ‘financial intermediation’ (except insurance and pension funding), ‘activities related to financial intermediation’, ‘renting of machinery and equipment’, ‘computer and related activities’, research and development (sectors 46, 54, 55, 57, 59–61). We exclude ‘wholesale, trade and commission excl. motor vehicles’ services from the original definition, since they do not represent typical offshoring services to our opinion. Abramovsky et al. (2004), for instance, classify them among non-business services (see Table. 2.1). In opposition to Abramovsky et al. (2004), however, we follow Kalmbach et al.’s (2005) approach to include financial intermediation and related activities. Banking, insurance, and finance represent 35% (and thus the largest part) of the total services offshoring market as will be shown in Sect. 3.2.1.1, which justifies our selection.

The calculation of services offshoring intensities (Sect. 3.1.3) as well as the econometric part of this study (Chap. 5) both rely on the definition of business activities according to Kalmbach et al. (2005), while the structure of German services offshoring (Chap. 3) is mainly based on services trade data from the IMF and German Balance of Payments statistics. In the following, the relevant service classifications are described and reviewed and then matched with the definition of business activities according to Kalmbach et al. (2005).

Other Commercial Services

The service classification of the International Trade Statistics of the WTO (2004) is based on the fifth edition of the IMF Balance of Payments Manual (BPM5). In the BPM5, the current account is subdivided into goods, services (including government services, n.i.e.), income (investment income and compensation of employees), and current transfers. Commercial services are defined as services minus government services, n.i.e. and are further sub-divided into transport, travel, and other commercial services. *Other commercial services* comprise the following components as defined in the BPM5:

(1) Communication services, (2) construction services, (3) insurance services, (4) financial services, (5) computer and information services, (6) royalties and license fees, (7) other business services, and (8) personal, cultural, and recreational services (WTO 2004).

Other commercial services are of special interest for our study, as they contain four services categories that match the definition of business activities according to

³Sectors within the classification of the German Federal Statistical Office: 45, 47–53, 56, 58, 69–71.

⁴Sectors within the classification of the German Federal Statistical Office: 63–68.

Kalmbach et al. (2005), namely (1) communication services, (4) financial services, (5) computer and information services, and (7) other business services.

The following definitions of these four services categories are taken from the ‘Manual on Statistics of International Trade in Services’ (see Sect. 2.1.2.1). The first category *communication services* is further subdivided into postal and courier services and telecommunication services. *Postal and courier services* focus on the pick-up, transport, and delivery of printed matter (e.g., letters, newspapers, periodicals, brochures), parcels and packages, including post office counter and mailbox rental services. Telecommunication services comprise the transmission of sound, images, or other information by telephone, telex, telegram, radio, and television cable and broadcasting, satellite, electronic mail, facsimile services, etc., as well as cellular telephone services, internet backbone services, and on-line access services, including provision of access to the internet. The second category *financial services* covers financial intermediation and auxiliary services that are provided by banks, stock exchanges, factoring enterprises, credit card enterprises, and other enterprises. Life insurance enterprises and pension funds are not included.

The third category *computer and information services* is subdivided into computer services, news agency services, and other information provision services. *Computer services* consist of hardware and software-related services and data-processing services, such as: hardware and software consultancy and implementation services; maintenance and repair of computers and peripheral equipment; disaster recovery services, provision of advice and assistance on matters related to the management of computer resources; analysis, design and programming of systems ready to use (also web page development and design), and technical software consultancy; system maintenance; and data-processing services (data entry, tabulation, processing, web page hosting services) to name some of them.⁵ *News agency services* comprise the provision of news, photographs, and feature articles to the media. *Other information provision services* include database services, database conception, data storage, and the dissemination of data and databases, both online and through magnetic, optical, or printed media; and web search portals (UN 2002).

The fourth category *other business services* consists of trade related services, operational leasing (rentals), and miscellaneous business, professional, and technical services. Due to their diversity, other business services are described more precisely in the following paragraph.

Other Business Services

The category *other business services* include merchanting and other trade-related services, operational leasing services as well as miscellaneous business,

⁵Besides the provision of packaged (non-customized) software, non-specific computer training courses are excluded from computer services, as the first is classified as goods and the latter belongs to *other personal, cultural, and recreational services*. The download of software via the internet was being discussed during the preparation of the Manual.

professional, and technical services. *Merchanting* means the purchase of a good by a resident of the compiling economy from a non-resident and the subsequent resale of the good to another non-resident. *Other trade-related services* cover commissions on goods and service transactions between *residents* (merchants, commodity brokers, dealers, and commission agents) and *non-residents*. *Operational leasing services* include resident/non-resident leasing (rental) and charters of ships, aircraft and transportation equipment, such as railway cars, containers and rigs, without operators and crew. *Legal services* cover, for instance, legal advisory and representation services in any legal, judicial, and statutory procedures.

Accounting, auditing, bookkeeping, and tax consulting services include the recording of commercial transactions for businesses and others, examination services of accounting records and financial statements, business tax planning and consulting, and preparation of tax documents. *Business and management consulting and public relations services* cover advisory, guidance, and operational assistance services provided to businesses for business policy and strategy, and the overall planning, structuring, and control of an organization. *Advertising, market research, and public opinion polling* comprise, e.g., the design, creation and marketing of advertisements by advertising agencies. *Research and development services* cover services that are associated with basic research, applied research, and experimental development of new products and processes.

Further services within the category of other business services are architectural, engineering, and other technical services, waste treatment and de-pollution services, agricultural, mining, and other on-site processing services. Finally, ‘other business services’ include the placement of personnel, security and investigative services, translation and interpretation, photographic services, building cleaning, real estate services, and the distribution of electricity, water, gas, and other petroleum products, while ‘services between related enterprises, n.i.e.’ comprise services that cannot be classified to another sub-category (UN 2002).

Technological Services

Every two years, the German Federal Reserve Bank (*Deutsche Bundesbank, DBB*) publishes the Special Statistical Publication No. 12 “Technological Services in the Balance of Payments” (*Technologische Dienstleistungen in der Zahlungsbilanz*), which contains international trade flows of *technological services* between Germany and all other countries. The data are based on the balance of payments statistics, especially on the *Deutsche Bundesbank* statistics on external payments, which in turn is based on the Foreign Trade and Payments Act (*Außenwirtschaftsgesetz*) of 28 April 1961, and supplementary provisions, especially section 59 et seq. of the Foreign Trade and Payments Regulation (*Außenwirtschaftsverordnung*). According to this regulatory framework, only financial transactions of more than 12,500 € are considered, which hence does not cover gratuitous foreign exchange of technological transfer, which is mainly important for patents and licenses (*Deutsche Bundesbank 2006a, b*). This publication aims to map Germany’s receipts of and expenditures for “technological

knowledge”, and consists of patents and licenses, R&D, and computer services, as well as ‘engineering and other technical services’.

Patents and licenses include the usage, purchases and sales of patents, inventions, processes, and intellectual property rights. *R&D* mainly contains payments for the research and development of new products and processes including scientific advice. *Engineering and other technical services* cover payments for the planning and design of manufactured products and aggregates (e.g., engineering and construction, maintenance and inspection, and technical consulting and planning) as well as payments for information, consulting, and training in the scientific and medical area.

Finally, *computer services* include the development and maintenance of software and the installation of hardware, unless such services are not covered under ‘system development’ in R&D. Examples are payments for data processing, analysis, planning and programming of ready-for-use systems (including the development and design of websites), as well as technical software-consulting, development, production, provision, and documentation of customer-specific software (including customer-specific operating systems), maintenance and other supporting services, such as training courses within the scope of consulting services, basic R&D in technical computing, and the payments for licenses. One specialty is the treatment of software. If standardized software is traded in the form of data storage carriers (CD-ROM, floppy disk, DVD, etc.), the value of both the software and the data storage carrier must be registered as trade in goods in the foreign trade statistics of the German Federal Statistical Office. If software is traded online via the internet, these payments are classified as computing services (Deutsche Bundesbank 2006b).

Three of the four technological services categories match the definition of business activities used in this study, namely R&D, ‘engineering and other technical services’, as well as computer services. Patents and licenses, contrariwise, are of less interest, as they are certainly not offshored for cost reasons. Other services categories of interest that are not part of the technological services, but reported separately in the German Balance of Payments statistics, are *financial services*, i.e., essentially payments for bank commissions, as well as *other business services*, such as commercial services, communication services, which consist of postal and courier services and telecommunication services, commissions, and rental and leasing services.

Information Technology and Business Process Outsourcing Services

Statistics on services especially in India mostly focus on IT and BPO services. Mattoo and Wunsch-Vincent (2004) present the following list of IT and BPO services, whereby the categories can mutually overlap. *IT services* are generally computer-related services and include software development and implementation services, data processing and database services, IT support services, application development and maintenance, business intelligence and data warehousing, content management, e-procurement and business-to-business marketplaces, enterprise

security, package implementation, system integration, enterprise application integration, total infrastructure outsourcing, web services (internet content preparation, etc.), web-hosting, and application service providers.

BPO services can be subdivided into customer interaction services, back-office operations, and more independent professional or business services. *Customer interaction services* comprise sales support, membership management, claims, reservations for airlines and hotels, subscription renewal, customer services help-line, handling credit and billing problems, telemarketing, and marketing research services. *Back-office operations* include data entry and handling, data processing and database services, medical transcriptions, payment services, financial processing (financial information and data processing/handling), human resource processing services, payroll services, warehousing, logistics, inventory, supply chain services, ticketing, insurance claims adjudication, and mortgage processing. *More independent professional or business services* consist of human resource services (hiring, benefit planning, and payroll, etc.), finance and accounting services (including auditing, bookkeeping, taxation services, etc.), marketing services, and product design and development (Mattoo and Wunsch-Vincent 2004).

IT and BPO services match the definition of business activities according to Kalmbach et al. (2005) only incompletely. While ‘computer and related activities’ as well as ‘other business activities’ in the narrower sense are covered, the following services categories are missing: ‘post and telecommunications’, ‘financial intermediation and related activities’, ‘renting of machinery and equipment’, and R&D.

2.1.3 Offshoring – A Make-or-Buy Decision

The following subsection addresses the two generic organizational forms of offshoring, theoretically discussed as the make-or-buy decision. Firms thus decide endogenously whether to “make” certain levels of the value chain (in-house production) or “buy” them from an external firm (outsourcing), which implies a vertical view of the value chain. Heshmati (2003), however, notes that “[...] in practice, outsourcing is not a make-or-buy decision, but rather makes previous investments a sunk cost to the firms and this negatively affects the outsourcing decision” (Heshmati 2003, pp. 94–95). In the last decade, a host of theoretical literature modeled the make-or-buy decision abroad to determine when a firm should vertically integrate or purchase inputs at arm’s length (see e.g., Antràs 2003; Antràs et al. 2006; Antràs and Helpman 2004; Grossman and Helpman 2002, 2004, 2005; Marin and Verdier 2003a, b; McLaren 2000).

The expanded tradability of services raises the question why in-house production is still relevant. Figure 2.4 shows, for instance, that the majority of German services offshoring seems to take the form of foreign affiliates or joint ventures, according to a survey of 119 German firms based on 159 offshoring actions. External provision is most important in Eastern Europe (26%) and Asia (24%)

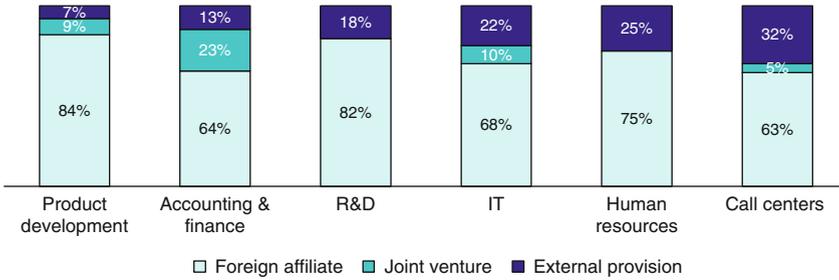


Fig. 2.4 Modes of provision of German firms by type of service

Source: own illustration. Data: Hutzschenreuter et al. (2007), p. 95. Based on 159 offshoring actions of 119 German firms

(Hutzschenreuter et al. 2007). As the discussion on make-or-buy decisions – which was originally related to goods – had already started some decades ago, the arguments must evidently go beyond the sheer tradability of services. Long before make-or-buy models appeared, the firms had discussed the make-or-buy question theoretically. Three main lines of thinking are relevant to our discussion, namely efficiency-based, resource-based, and transaction cost-based.

Efficiency-based motives, such as cost savings, are used to explain why firms buy inputs externally via the market. They are based on neoclassical economic theory that understands firms primarily as a production function. External purchases are made to save on labor costs, to raise flexibility, to focus on core competencies, or to gain learning advantages. The *resource-based view of the firm* constitutes a second stream of theories, where productive resources and competencies of a firm are the center of interest. Generally, firms have an incentive to diversify and thus grow in order to be less vulnerable in a dynamic environment. Strongly diversified firms, however, risk being involved in unfamiliar business areas, which increases the potential for business mistakes. Therefore, outsourcing helps firms to focus on their core competencies and resources. Finally, a firm's make-or-buy decision in *transaction cost-based theories* is made according to the criterion of TACs. In-house production is advantageous, when TACs are high, e.g., in the case of uncertainties, market failure, imperfect contracts, and information asymmetries. Thus, the following sub-subsections analyze efficiency-based (Sect. 2.1.3.1) and resource-based motives for outsourcing (Sect. 2.1.3.2) and transaction cost-based motives for in-house production (Sect. 2.1.3.3).

2.1.3.1 Efficiency-Based Motives for Outsourcing

There is generally no single motive that dominates a firm's decision to outsource. In most cases, many motives are simultaneously decisive. The early study of Abraham and Taylor (1996) thus states that “[t]he picture of employers' motives for contracting out that emerges from our analysis is rather more complex than that given

in the typical popular account” (Abraham and Taylor 1996, p. 417). Many of the commonly stated advantages from outsourcing reveal an efficiency-oriented view of the firm without explicitly naming it as such.

One of the main outsourcing motives is the *search for flexibility or risk-sharing*. Due to changes in the external environment, such as changing market opportunities in a globalizing world or technological changes, firms are exposed to greater uncertainty. Thus, uncertainty combined with risk averse behavior promotes the search for pooling or sharing risk and thus the search for more flexibility (Deavers 1997). According to Abraham and Taylor (1996) outsourcing gives firms the possibility of smoothing the work load of the regular work force. Firms might favor a relatively stable work flow, since more volatility on the demand side can raise costs, e.g., due to the need to vary the number of regular workers or to employ more workers than necessary in off-peak seasons.

Outsourcing work to subcontractors or rescheduling work to off-peak periods helps firms to vary the number of regular workers in peak periods. Note that the costs of outsourcing exceed the costs of in-house production for a certain number of activities, otherwise a firm would outsource all activities. But even if the unit costs of outsourcing are higher, outsourcing could still remain beneficial to the firm if other costs can be reduced. A steady workflow can also be attained by extending the number of workers, so that the demand in peak seasons can be satisfied. In off-peak seasons, however, too many workers would be employed, which lowers productivity and/or the firm would have to pay high hiring and firing costs. Outsourcing thus reduces costs if the internal adjustment costs of the workforce exceed the contracting costs (Abraham and Taylor 1996). Besides labor flexibility, other types of flexibility, e.g., in corporate strategy, technology, and product range, can be increased due to outsourcing (Deavers 1997).

A second outsourcing motive is the *search for lower costs*. Abraham and Taylor (1996) explain how wage and benefit savings are possible when firms practice outsourcing. If firms subcontract less-skilled work to external providers, who pay lower wages and benefit packages, they can save partially high costs. How can external providers or subcontracting firms offer lower wages, even if they are located in the same country? One explanation given by the authors is the possibility that firms are unionized and thus pay higher wages than the firm’s real willingness to pay. In such a case, outsourcing to non-unionized firms immediately reduces wage payments. A second explanation is related to “efficiency wages” which are higher than actual market wages. Efficiency wages increase the willingness of employees to improve their job performance, reduce the labor turnover rate, attract human capital, and intensify the good will of employees towards their employers. Efficiency wages are only appropriate for employees who belong to the firm’s core activities, but less for employees who do not and/or who can easily be monitored and replaced. Since it is impossible to pay efficiency wages to the core workforce, while compensating the remaining employees with lower market wages, even non-unionized firms will take outsourcing into consideration (Abraham and Taylor 1996). As outsourcing to a domestic supplier can already lower wages, offshore-outsourcing to low-wage countries contains a much higher potential for wage savings.

Besides wage savings, Sharpe (1997) argues that “outsourcing mainly arose as a means to reduce the adjustment costs of responding to economic change – change that affects both organizations and workers” (Sharpe 1997, p. 536). Economic change includes technological innovation, rapid growth, changes in customer and worker preferences, and other shifts in supply and demand. Lowering the cost of adjusting to economic change can be achieved, for instance, when a firm absorbs general skills and technologies through outsourcing without directly investing in their development. Furthermore, external service providers have a greater motivation to hire and promote their employees at market prices compared to firms that keep these services in-house. The latter are more likely to employ workers at above market wages. By outsourcing these activities, firms are able to purchase support services at current market prices. Finally, outsourcing enables firms to simplify their management in highly growing areas or sectors with fast-paced changes. “Fast growth technology companies in highly competitive markets such as Apple, Nike, Intel, Microsoft, and Motorola outsource extensively and were among the earliest users of outsourcing. Newly emerging technology companies such as 3COM are following in their footsteps with regard to outsourcing (Sharpe 1997, p. 543).”

A third reason for outsourcing is that firms might benefit from *specialization advantages*, since external suppliers dispose of special equipment or knowledge. Specialized providers can generate scale effects, which depend on technological conditions, but also on their “ability to aggregate performance-related data horizontally across the same function at a number of different companies” (Sharpe 1997, p. 542). Linked to that argument is the capability of outsourcing suppliers to aggregate among many customers. It is, for example, easier for specialized firms to produce at the optimal scale for efficient production. For years, large firms have benefited more strongly from economies-of-scale. This advantage has been reduced due to the use of technology and outsourcing (Abraham and Taylor 1996).

Specialized services providers (SSPs) can generate higher scale-effects than non-specialized companies for the following reasons. First, one service activity can be used by more employees simultaneously without relevant cost increases. Imagine that a non-specialized company needs an instructor for its computer specialists. SSPs can reduce their fixed costs, because the instructor can teach more specialists at the same time. Second, some employees in the non-specialized companies do not work to full capacity, since they are not often or only irregularly needed in the companies (e.g., training, repair, maintenance, bookkeeping). SSPs can perform these tasks in different companies at different times, which saves fixed costs, because the same employee works continuously to full capacity. Third, not all companies introduce a new technology simultaneously, because there are early and late adopters of the same technology. SSPs could thus spread their fixed costs over a longer period of time than the companies that produce a specific service in-house (Bartel et al. 2005).

Specialization advantages are also generated due to the expertise of SSPs. Especially small or medium sized firms should outsource computer-based activities in order to increase cost efficiency, because their own computer specialists could be

inexperienced if a more complex problem occurs that they rarely face. Specialized firms can deal faster and more efficiently with complex problems due to their expertise, e.g., in more quickly identifying inefficient work patterns and processes. Finally, firms are likely to lack adequate specialists, who are expensive or difficult to attract. Thus, Sharpe (1997) argues that in-house employees working in non-core areas of the firm have lower promotion chances. If such employees provide their services to a specialized firm, their chances to pursue a career rise. High-skilled specialists thus rather tend to work in specialized firms, otherwise they might demand a skill-premium (Abraham and Taylor 1996; Sharpe 1997).

2.1.3.2 Resource-Based Motives for Outsourcing

The Basics of Resource-Based Theories

Focusing on productive resources and competencies of a firm, *resource-based theories* constitute the dominant contemporary stream of theories in the field of strategy. Edith Penrose established this approach in her book “The Theory of the Growth of the Firm” (1959), although the author maintained a certain distance towards the developing and not completely homogeneous resource-based theories of the firm. Some authors “think of Penrose as re-stating, refining, and sometimes radicalizing the basic conceptualization of the firm that can be found in the work of Marshall and his later followers [...]” (Foss 1998, p. 3). Thus, Penrose like Marshall emphasizes not only the feature of firms to generate productive knowledge, but also their capability to develop and manage knowledge. Developing and managing knowledge, in particular, is difficult to separate, which is the essential Penrosian point according to Foss (1998). The year 1984 marked a milestone of the modern resource-based theories with Wernerfelt’s “A Resource-Based View of the Firm” (1984) and Rumelt’s “Towards a Strategic Theory of the Firm” (1984). Many other contributions have followed since then (Foss 1997).

The Penrosian firm represents a collection of *productive resources* that have the capability to generate services. Productive resources are managed within an administrative organization, which can determine the amount and type of these services. Penrose hereby outlines the necessity for firms to create a sustainable *competitive advantage* over the competitors, such as technological superiority, strong marketing, and operational scale effects, by building up new resources, maintaining them, and renewing them. Productive resources thus become the unit of analysis and must have the following features. First, they must be heterogeneous in order to render rents. Second, they must be obtained at a lower price than the current discounted net value, otherwise rents are absorbed by higher costs. Third, these resources should be difficult to imitate and non-substitutable. Fourth, productive resources must be firm-specific. The main question for a firm is, hence, how to receive the highest value out of its resources. However, the *real* input factors in the production process are not the resources but the productive services which can be obtained from them (Penrose 1959; Wernerfelt 1984; Foss 1997, 1998).

According to Penrose, “[a] firm may achieve rents not because it has better resources, but rather the firm’s distinctive competence involves making better use of its resources (Penrose 1959, p. 54).”

Learning processes with regard to these productive services enable firms to diversify. *Diversification* in this context means (1) that productive possibilities of the firm can be expanded, and (2) that excess managerial resources can be used in related business fields (Foss 1998). Concerning (1), a firm is diversified when it offers new and sufficiently different products in addition to its already existing product range of intermediate and final goods. The “diversification of [...] activities, sometimes called ‘spreading of production’ or ‘integration’” increases the variety of final goods, vertical integration, and the number of basic business areas (Penrose 1959, p. 104).

Concerning (2), firms gradually accumulate physical resources, but are unable to use all of them at the same time due to coordination problems. Hence, the firm always disposes of *excess resources* which render additional revenues possible without increasing the costs. Since there are no opportunity costs for unused resources, firms have an endogenous incentive for diversification and growth. The process of diversification produces new knowledge and further excess resources, which in turn induces the managers to develop new business areas, and so forth (Best and Garnsey 1999). This process seems to require no optimal size of the firm. Anyhow, the main limitation on a firm’s growth is the shortage of managerial resources, which Slater (1980) models as the so-called “Penrose effect” (Slater 1980, p. 521). One has to further stress that firms are primarily interested in profits; therefore, only an increase in expected total profits and not the full utilization of resources or the stabilization of rents justify diversification (Penrose 1959).

Why should firms diversify? According to Penrose (1959), *efficient production* at a given product variety is only possible for large firms with strong diversification and integration for the following reasons. First, highly specialized firms are vulnerable in a dynamic environment due to technological progress and changes in consumer preferences. Only high product variety can protect a firm from major demand shifts – neither monopoly power nor technological progress alone will do. Distributing productive resources to a larger variety of goods can thus be more profitable in certain periods. Second, and more important, is the fact that diversification extends the production and investment possibilities into new areas, while maintaining or even expanding the present production lines (Penrose 1959).

Penrose (1959) accepts other explanations for integration, but criticizes their scope of explanation. “A variety of ad hoc explanations ranging from market imperfections and uncertainty to the dead hand of the past have been presented, and are true enough so far as they go, but they do not go very far (Penrose 1959, pp. 104–105).” Especially, *competition* requires strong diversification by firms. Expected actions of external competitors lead to internal adaptations in order to maintain a firm’s position, which in turn increases the internal supply of productive services and knowledge. “The Schumpeterian process of ‘creative destruction’ has not destroyed the large firm; on the contrary, it has forced it to become more ‘creative’ (Penrose 1959, p. 106).”

The Decision for Outsourcing

The possibility of purchasing and selling business areas supports “excessive” diversification, but also restrains it. In the process of increasing diversification, firms are confronted with unfamiliar business areas, in which they commit errors and in which expectations cannot be fulfilled. The stronger the diversification, the higher the number of mistakes. Firms can correct mistakes by selling unfamiliar business areas, and thus can reduce the risk of making losses. For this purpose, firms need to control whether a business area is still successful. Penrose (1959) recommends selling these business areas that a firm does not fully control in order to specialize in their *core competencies* and exploit learning effects. Selling “inefficient” businesses to specialized producers leads to *learning and efficiency effects* as a consequence of specialization, which can be increased through the adoption of a decentralized type of organization. Penrose’s arguments for selling less profitable aspects of the firm can also be applied to the make-or-buy question. To sum up, generally the necessary productive resources are produced in-house and should only be purchased externally if the firm cannot provide the necessary knowledge. Although there is no general need to produce resources in-house that can also be purchased via markets, market purchases are limited due to TACs (Penrose 1959).

While Penrose (1959) treats the subject of specialization on core competencies more implicitly, *knowledge-based theories* address this issue more directly. Knowledge-based theories form a separate school of thought among the resource-based theories. Prahalad and Hamel (1990) thus put their focus on core competencies, defined as “the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies” (Prahalad and Hamel 1990, p. 82). A *core competence* should at least have three features. “First, a core competence provides access to a wide variety of markets. [...] Second, a core competence should make significant contribution to the perceived customer benefits of the end product. [...] Finally, a core competence should be difficult for competitors to imitate (Prahalad and Hamel 1990, pp. 83–84).”⁶

While knowledge is considered *one* important resource besides others in the literature mentioned above, Grant (1996), Liebeskind (1996), and Spender (1996) were among the first authors that explicitly outline knowledge as the most important resource of competitive advantage. “Since the origin of all tangible resources lies outside the firm, it follows that competitive advantage is more likely to arise from the intangible firm-specific knowledge which enables it to add value to the incoming factors of production in a relatively unique manner (Spender 1996, p. 46).” Knowledge can be considered the Ricardian comparative advantage or competitive

⁶Mahoney and Pandian (1992) also outline that *unique capabilities* in the strategic management literature “are important sources of heterogeneity that may result in sustained competitive advantage” (Mahoney and Pandian, 1992, p. 365).

advantage in business terms, as pointed out by Liebeskind (1996) when relating knowledge to rents. Specializing in less tasks, individuals can concentrate on learning new techniques and instruments, which will increase their efficiency (Smith 1776). Therefore, firms should specialize in the production of such goods where they possess a competitive learning advantage (Vang 2003). Only implicitly included in most knowledge-based theories is the notion that other areas should be purchased from external suppliers (outsourcing) who work more efficiently, contain learning advantages, and produce more cost-effectively due to specialization (Vang 2003).

2.1.3.3 Transaction Cost-Based Motives for In-House Production

The Basics of Transaction Cost-Based Theories

According to transaction cost-based approaches, TACs incur with external procurement and can outweigh efficiency advantages. The ideas of TACs have been elaborated in TAC-based theories of the firm, where opportunistic potential of the involved parties is stressed as the major reason for TACs. TAC-based theories are part of the *New Institutional Economics*, the latter representing more a bundle of multiple institutional theories rather than a general theory with a focus on social and legal norms and rules.⁷ Contrary to neoclassical consideration, firms are not reduced to a production function, but represent an organizational construction, i.e., a governance structure of contractual relations that focus on attracting orders, reducing conflicts, and realizing mutual profits. The basics of the TAC-based approach are found in Coase's article "The Nature of the Firm" (1937), where he evaluates "why a firm emerges at all in a specialized exchange economy" (Coase 1937, p. 3):

"The main reason why it is profitable to establish a firm would seem to be that there is a cost of using the price mechanism. The most obvious cost of "organizing" production through the price mechanism is that of discovering what the relevant prices are (Coase 1937, p. 4)."

Without such a price mechanism of the market, the so-called TACs, firms would not have a "raison-d'être" (Coase 1937, p. 5). Thus, transactions become the unit of analysis. Although TACs can lead to opportunistic behavior of the agents before signing the contract (*ex ante*), the focus is especially put on *ex post* possibilities (Coase 1937). TACs comprise all sacrifices and disadvantages that arise for the

⁷According to Williamson (2000), four levels of social analysis can be distinguished, namely the *social theory* at the first level, the *property rights theory* at the second level, the *TAC-based approach* at the third level, and the *principal-agent-theory* at the fourth level. Our study is largely interested in the TAC-based approach, which extends the informal rules of the first level (e.g., sanctions, customs, traditions, codes of conduct) and formal rules of the second level (e.g., constitutions, laws, property rights) by also integrating contractual relationships (Williamson 2000).

involved parties when exchanging goods and services. They include all information and communication costs that are associated *ex ante* with the initiation (e.g., travel, communication, and consulting costs), the agreement (e.g., arrangement costs, legal advice), and transaction (e.g., management costs for leadership and coordination) and *ex post* with the control (e.g., control of quality and date) and adjustment (extra costs due to subsequent changes in amount and dates) of an exchange that is perceived as fair (e.g., Picot 1982, 1991).

TAC-based theories are based on *human factors* of the agents, whose conduct corresponds to a large extent to reality. *Bounded rationality* of the agents, the result of information asymmetries, is assumed. “Bounded rationality refers to rate and storage limits on the capacities of individuals to receive, store, retrieve, and process information without error (Williamson 1973, p. 317).” Especially, contractual incompleteness in combination with the assumption of opportunism creates large problems. “*Opportunism* [!] is an effort to realize individual gains through a lack of candor or honesty in transactions (Williamson 1973, p. 317).” Opportunism thus designates the possibility of selfish individuals to maximize their individual utility at the expense of thirds, which is reflected in adverse selection, moral hazard, and other strategic behavior. Agents are further endowed with *conscious foresight* which enables them to detect possible prospective events, in order to integrate them *ex ante* in their contracts and thus to dispose of advantages (Williamson 2000).

Williamson (1975) completes the behavioral analysis of the agents with further *transactional factors*. First, transactions have a *specificity* which can be measured by means of singularity of the provision or use of the resource. The author differentiates specialized physical assets, specialized human assets, site specificity, dedicated asset specificity, and brand capital. Specific transactions thus depend on site-specific facilities, specialized machines and technologies, and specialized and qualified employees, or on buyer-specific investments. Second, agents are subject to *uncertainty*, which measures the predictability or frequency of change during a transaction (Williamson 1975).

Note that the risk of uncertainty has already been addressed by Coase (1937). Generally, agents prefer a long-term contract to a sequence of short-term contracts in order to reduce costs and risks. A long-term contract, however, contains the risk of *uncertainty* to the agents, especially to the buyer as regards future efforts of the seller. For this reason, the detailed modalities of the seller, on the one hand, are deliberately unpredicted to allow for future adjustment possibilities. The buyer, on the other hand, finalizes the details after having concluded the contract. According to Coase, “[a] firm is likely therefore to emerge in those cases where a very short-term contract would be unsatisfactory” (Coase 1937, p. 5).

Transaction Costs with Market Purchases of Services

In the following paragraph, possible TACs that occur with market purchases of services are discussed. According to Cronin et al. (2004), firms might face search, transition, coordination and exchange costs, and the costs for strategic capabilities.

First, *search costs* emerge from sacrificing time or effort to find the range of different market prices for the respective services. Since only the processes and not the services themselves can be standardized, Cronin et al. (2004) estimate search costs to be relatively high. If market prices do not represent the single criterion of utility and/or if products are not standardized, these prices might become even higher (Douma and Schreuder 1998). Due to their heterogeneity, services transactions are often uncertain. Thus, search costs constitute between 1 and 10% of the total contract value in the IT-sector (Overby 2003).

Second, *transition costs* include the training and integration of new service providers to guarantee a minimum service quality. The more national boundaries, such as cultures and business environments, are crossed, the higher are transition costs. 2–3% of the total contract price in the IT-sector are used to become familiar with the provider. Layoffs and other associated costs, such as the costs for reorganization and retraining, might lead to further 3–5%. Beyond that, during the first two years, firms have experienced a decrease in productivity of 20%, which constitutes further transition costs (Overby 2003).

Third, *coordination costs* with respect to the outsourced activities can also occur, even if the firm buys (costly) insurance against several disturbances, e.g., on the supply side. Other coordination costs comprise, for instance, sufficient telecommunication links between the purchaser and the buyer. Thus, 1–10% of the contract value can be dedicated to coordination costs in IT (Overby 2003). Fourth, *exchange costs* or contract management costs are spent to guarantee the terms of exchange, which are likely to increase for complex international contracts or long delivery periods (Hill 2003). In the IT-sector, these costs account for 6–10% of the contract value (Overby 2003).

Fifth, *the costs for strategic capabilities* comprise the risk of loss of proprietary information, which can be lowered through detailed contract specification. Moreover, asset specificity also creates additional costs, if these assets (e.g., specific training software) cannot be used for other purposes, as outlined by Williamson (1985). Finally, the infrastructural capacity is reduced, when former in-house-produced services are outsourced, since knowledge and technical capabilities, and with them several options, will disappear. Thus, keeping several activities in-house maintains a certain flexibility and protection towards future events (Cronin et al. 2004).

The Decision for In-House Production

According to Williamson (1996), markets can be distinguished from in-house production, also called hierarchy, by three main features. First, markets are characterized by a stronger intensity of incentives and limited bureaucratic burdens. Second, markets offer possibilities for economies-of-scale and scope due to an aggregated demand. Third, hierarchies possess internal control mechanisms (Williamson 1996). In various studies, Williamson explains a firm's decision for in-house production (vertical integration) with *market failure*, especially of product and capital markets.

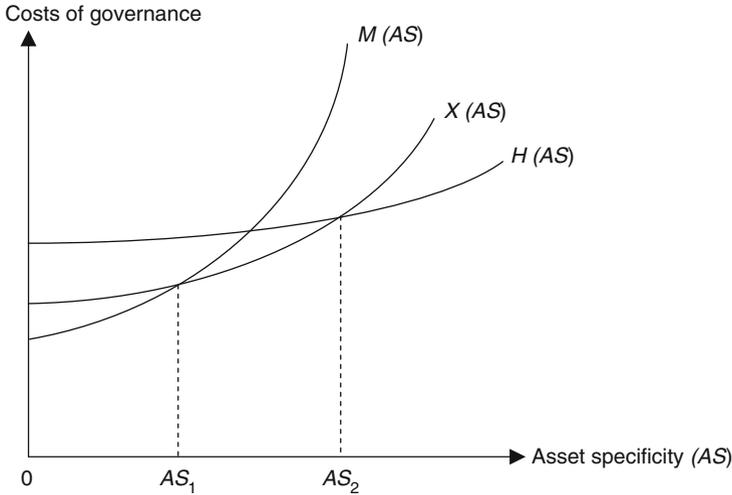


Fig. 2.5 Comparative costs of governance
 Source: own illustration. Modified from: Williamson (2002, p. 181)

Firms exist because they have the capacity to solve internal tasks more efficiently than markets, whereas markets, especially product or capital markets, discipline inefficient firms insufficiently.⁸ Inefficient firms are firms that do not maximize profits due to uncompetitive structures on the product markets, such as oligopolies or monopolies, but also due to failure of the capital market. Williamson emphasizes this latter point. According to Williamson, the corporate head office would coordinate the firm’s divisions more efficiently than the capital market would do if the divisions were independent firms. This is explained with information disadvantages (e.g., concerning the efficiency of a firm) and based on the thesis of separation of ownership and control according to Berle and Means (1932).

Thus, firms occur when the internal *comparative costs of governance* are more cost-efficient than the comparative costs of governance of the market solution. Figure 2.5 maps the comparative costs of governance in markets, $M(AS)$, and in hierarchies, $H(AS)$, both being functions of asset specificity AS . When AS is zero, the costs of governance with hierarchy are higher due to bureaucratic barriers compared to the market solution, i.e., $H(AS) > M(AS)$. The more AS increases, the more the initial cost advantage of the market solution falls, and it may even reverse itself for very large AS , where the comparative costs of governance with hierarchy are smaller than the market costs. $X(AS)$ represents a hybrid of “market-preserving credible contracting modes that possess adaptive attributes located between classical markets and hierarchies” (Williamson 2002, p. 181). For $0 \leq AS < AS_1$, the market solution dominates the two other options. If $AS = AS_1$, the market

⁸Williamson rejects the neoclassical model, where competition promotes efficiency on product and capital markets by squeezing inefficient firms out of the markets.

and hybrid solution show the same costs of governance. For $AS_1 < AS < AS_2$, the hybrid solution is preferred, while for $AS = AS_2$ hierarchy is as good as the hybrid solution. Finally, if $AS > AS_2$, hierarchy is the best option (Williamson 2002).

Besides market failure, hierarchy can be more efficient than the external market solution due to the existence of *incomplete contracts*.⁹ According to Williamson (2002), “[a]ll complex contracts are unavoidably incomplete. For this reason, parties will be confronted with the need to adapt to unanticipated disturbances that arise by reason of gaps, errors and omissions in the original contract” (Williamson 2002, p. 174). Thus, the transaction environment with uncertainty and bounded rationality makes a complete contract impossible, since adjustments are always required. Moreover, a detailed contract *ex ante* would prevent the contract from being flexible enough for prospective adjustments. The central question is whether investments of a party lead to a *hold-up*, which is a possibility for the contracting party of a short-term change or break-up of the contract. Such a hold-up possibility would turn the own specific investments into sunk-costs (Vang 2003).

Let us assume a fully specified contract in the following. In the beginning, both parties formulate the contract and integrate the exact modalities such as prices, delivery conditions, and so forth. Nevertheless, adjustments and changes are possible afterwards. After completion of the contract, the subcontractor needs to make specific investments, which reduces his bargaining power, since his specific investments could turn into sunk-costs. In such a situation, the subcontractor would have to accept any price between the originally negotiated price and zero in order to reduce total losses. Since the subcontractor can already anticipate such a situation, he is tempted to make more general investments, which could be used more widely (i.e., with a lower asset-specificity), but would be less efficient than the optimal investment. Note that the customer can have a worse bargaining position, too, e.g., if his production depends on certain irreplaceable inputs of the subcontractor.

Time-specificity can constitute a hold-up for both parties, when the customer (resp. subcontractor) depends on the punctual delivery. The subcontractor (resp. customer) could threaten the customer (resp. subcontractor) with a delay of delivery (resp. change of subcontractor) in order to increase (resp. reduce) prices. The subcontractor will only undertake optimal investments when he has sufficient incentives, which is more likely with reduced hold-up possibilities, for instance, when the customer owns shares of the subcontractor’s firm or contracts to buy a minimum amount. If such supplementary conditions cannot be achieved, firms have an incentive for integration (Vang 2003).

“To sum up integration occurs either because the subcontractor needs to make specific investments that allow the customer to make or hold on him (or vice versa) or because the

⁹Incomplete contracts have been used in several models to explain the make-or-buy decision of a firm (e.g., Antràs 2003). Among these, Ethier (1986) stresses the aspect of information asymmetries between firms, that make it difficult for firms to control the amount of research endeavours of the adverse party and to formulate an incentive-compatible contract. Besides, the required quality is difficult to integrate into a contract.

subcontractor can make a hold up because of the customer's losses, if he does not receive the good at a certain time (or vice versa) (Vang 2003, p. 7)."

2.2 Drivers of Services Offshoring

The international trading environment has changed over the last 20 years.¹⁰ The changes reflect technological, political, and economic changes that have together encouraged more international trade and foreign investment, altered the structure of trade, and changed the relation between trade and foreign direct investment. These changes in the international economy began decades ago and have emerged gradually. Thus, we are not seeing a sudden shift in economic relations, but there has been enough change in the amount of internationalization of production to justify our designation of the past 20 years as comprising a "new wave" of globalization. This new wave of globalized production has involved a quantitative and a qualitative shift in the role of international trade.

Economists describe the new arrangements as no longer involving only trade in goods and services, but as a "trade in tasks" (Grossman and Rossi-Hansberg 2006a, b). Levy (2005) sees offshoring as driven not by comparative advantage but by firms' ability to "coordinate a geographically dispersed network of activities". He notes that offshoring "decouples the linkages between economic value creation and geographic location" (Levy 2005, p. 685). In other words, offshoring has altered the traditional link between trade and value added. Higher imports, which can lower costs considerably, can thus raise (lead) firm profits and contribute to the rising share of corporate profits in national income.

The massive expansion of supply chains internationally, with lead firms investing abroad or subcontracting with foreign producers in search of cost reductions or to better serve local markets, has been given its most important boost by *developments in ICTs* (see Sect. 2.2.1.1), in particular with the integration of computers into mass production, including product design, the management of the supply chain, the monitoring of inventory, sales and distribution, and payroll, finance, and accounting. Developments in ICTs have also led to a decline in communication costs and thus fostered offshoring, which Baldwin (2006) describes as the "second unbundling":

"Rapidly falling transportation costs – a trend which has been going on since the late nineteenth century – caused the first unbundling, namely the end of the necessity of making goods close to the point of consumption. More recently, rapidly falling communication and coordination costs have fostered a second unbundling – the end of the need to perform most manufacturing stages near each other. Even more recently, the second unbundling has spread from factories to offices with the result being the offshoring of service-sector jobs. In a nutshell, the first unbundling allowed the spatial separation of factories and consumers. The second unbundling spatially unpacked the factories and offices themselves (Baldwin 2006, p. 7)."

¹⁰The introductory notes on the following two pages have been taken and modified from Milberg and Schöller (2008).

A political development affecting the volume and direction of international trade and investment is the wave of multilateral and regional trade agreements, covering more countries than ever in history, that have reduced tariff and non-tariff barriers and most importantly have provided protection for foreign investors. The WTO has multiplied its membership over the original GATT by a factor of six, hundreds of bilateral investment treaties have been signed, and numerous regional trade agreements have come into effect. These agreements have contributed to the ongoing process of reducing tariffs and non-tariff barriers, but they have also significantly aided the globalization of production by creating protection for foreign investors. Concerning services trade, the progress of multilateral (Sect. 2.2.1.2) and regional (Sect. 2.2.1.3) trade agreements are being reviewed with regard to their scope and achievements.

Trade occurred increasingly through sophisticated global value chains, as companies in developed countries went offshore to perform both manufacturing and services. There are several motives why firms go offshore. We distinguish between market-oriented motives (Sect. 2.2.2.1), cost-oriented motives (Sect. 2.2.2.2), and procurement-oriented motives (Sect. 2.2.2.3). More recently, the latter also include the search for agglomeration advantages and the search for skilled labor abroad. While, for a long time, market-oriented motives dominated the (captive) offshoring decisions, newer studies confirm the trend towards cost-orientation not only in Germany. This has resulted in greater reliance on imports from low-income countries.

Politically, perhaps the most significant development of this period was the entry of former communist and other largely-closed economies into the capitalist world economy. The collapse of the Soviet Union and of communist governments throughout Eastern Europe and East Asia, the capitalist turn of communist China's economic plan, and even the opening and liberalization of India's economy, have all served to expand global productive capacity, international trade, foreign investment, and international subcontracting. Freeman (2007) has characterized this development as "the great doubling" of the world capitalist system's labor force as it had added 1.3B people to the pool of labor seeking work under competitive conditions (see Sect. 2.2.3.1). The role of multinational companies in this development for the host countries is analyzed in Sect. 2.2.3.2. Finally, we focus briefly on the liberalization efforts in two selected developing countries, namely India and China (see Sect. 2.2.3.3).

2.2.1 Global Developments

2.2.1.1 Developments in Information and Communication Technologies

The Age of Information and Telecommunications

The fast pace of services offshoring was mainly fostered by the development and distribution of *information and communication technologies*, i.e., technologies that enable information and communication flows.

“Information and communication technologies encompass all those technologies that enable the handling of information and facilitate different forms of communications among human actors, between human beings and electronic systems, and among electronic systems. These technologies can be sub-divided into: [c]apturing [...], [s]torage [...], [p]rocessing [...], [c]ommunications [...], [and d]isplay technologies [...] (Hamelink 1997, p. 3).”

This ‘electronic-digital revolution’ initiated the *age of information and telecommunications* (and biotechnology), also called information economy, and started in the early 1990s. The age of information and telecommunications represents the fifth Kondratieff-wave¹¹ and follows the age of electronics, computers, and robots (fourth Kondratieff) that started in the 1950s, as well as the age of oil, the automobile, electricity, and chemical innovations (third Kondratieff), that was initiated at the beginning of the twentieth century.

The age of information and telecommunications builds on partially simultaneous *developments in telecommunications and IT* during the preceding one and a half centuries. Thus, the development of telecommunication technologies can be traced back to the invention of the telegraph in 1844, followed by the telephone in 1870, the mobile phone in 1979, the Integrated Services Digital Network (ISDN) in 1987, and the broadband in 1990 (Hutzschenreuter et al. 2007). Developments in IT began with the invention of the first computer, Zuse Z3, in 1941. By 1960, there were around 7,000 computers worldwide. The first precursor of today’s personal computer was invented in 1968, followed by the predecessor of the internet – the Arpanet – in 1969. In 1971, the first micro-chip was presented to the public, which transformed the large computers into desktop computers. The first Apple computer was sold in 1976, the internet was developed in 1983, and the world wide web in 1989. In 1994, more computers than automobiles were sold worldwide for the first time (Hutzschenreuter et al. 2007; Mosdorf 1998).

More than three decades ago, Helleiner (1973) was already reporting on an early form of services offshoring to low-income countries:

“The variety of activities now being performed for export on this basis in the less-developed countries is already very large. It may be worth listing some examples in order to show the flavour of these developments. [...] Data are flown to Southeast Asia and the West Indies for punching upon tape by low-wage key punch operators, following which the tapes are flown back again (Helleiner 1973, p. 29).”

This example shows us that, in a strict sense, ICTs did not enable services offshoring, but rendered services offshoring less difficult. Developments in ICTs have eliminated technical restrictions of some former *uno-actu* services that theoretically would have been transferable (e.g., data in books and printed reports), but economically could not be traded quickly enough or at low costs. The elimination of such technical restrictions include the following advantages.

First, *digitization* allows the users of ICTs to store enormous amounts of data, which otherwise would have used lots of space in the form of data in printed reports,

¹¹The Kondratieff-waves, also called grand supercycles, have a length of between 45 and 60 years.

books, and folders, or in form of CDs and tapes. Second, developments in ICTs have made it possible to *uncouple information from its physical storage*, enabling the transfer of huge amounts of data within a few seconds ('disembodied services') and creating a new space–time structure (Boes 2004; UNCTAD 2004).

A third advantage is the possibility of *data separation*, which enables individuals to communicate independently from their physical movement, i.e., e-mails can be stored in the mailbox and then read at any point of time, whereas telephone calls require the physical presence of both actors. Fourth, the use of ICTs generates twofold externalities, which are both characterized by non-rivalry. *Content-related externalities* give users access to information (e.g., on the internet). Moreover, enlarging the ICT-network creates *network externalities*. Thus, new users of the system can benefit from the information and network structure through the exchange of information, which also increases the advantages for existing users. Fifth, ICTs represent a *general purpose technology* (GPT) that can potentially be used by any subject and any sector (Bedi 1999).

Sixth, the use of electronic media changes *customs and traditions*. Before the age of information and telecommunications, it was common to produce some traditional functions, such as accounting, archiving, and design, in-house. The use of ICTs no longer requires face-to-face contact, since formerly in-house-produced services can now be externalized. Finally, knowledge has become available in codified, standardized and digitized form, making fragmentation of services into smaller components and thus global sourcing possible (UNCTAD 2004).

The so-called *productivity-bias* is a consequence of the new tradability of services. Empirically, the manufacturing sector has been considered more productive than the service sector, with the share of manufactured products in GDP remaining constant despite a reduction of manufacturing workers. Due to the increased use of ICTs, productivity gains were also recorded in the service sector. Especially, service sectors with significant innovation potential, such as banking and insurance and the ICT-sector itself, have caught up in productivity (Barth 1998).

Thus, the use of (circular) e-mails in a firm can raise productivity, as e-mails hold a *control function*. First, accountability is always given, because everything is documented in written and not only in oral form. Second, public commitment via circular e-mail better disciplines the responsible person and entails higher productivity compared to an agreement only made between two persons. Third, public interaction through circular e-mails better prevents workers from being passive. Besides the control function, e-mails are also characterized by a *long-term memory*. The documentation of information in form of e-mails counteracts a repeated problem-solving of the same issue, which raises productivity. This effect is eased by the development of (desktop) search engines. There might be more channels through which the use of e-mails in particular and of ICTs in general increases productivity.

Information and Communication Technologies in Developing Countries

The process of developments in ICTs might go hand in hand with an increased services offshoring potential, especially to developing countries. As early as 1996,

the Economist stated that “[f]irms in the rich world have “outsourced” all manner of things to developing countries – from computer programming and airline revenue accounting to processing hospital patients’ records and insurance claims. [...] As IT expands the scope for trade in services, it will inevitably expose workers in previously sheltered sectors to international competition, including skilled workers” (The Economist 1996, p. 32, taken from Deavers 1997, p. 517). The following paragraph focuses on *information and communication technologies in developing countries* and evaluates how well the latter are prepared to absorb the services that have previously been performed in developed countries.

The *distribution of internet users* around the world reveals for the period from 2001 to 2005 that high-income countries showed an increase from 378 to 523 internet users per 1,000 inhabitants, middle-income countries from 35 to 114, and low-income countries from five to 44 users. The ratio of internet users in middle-income countries relative to high-income countries rose sharply from 3% in 2001 to almost 22% in 2005. The ratio of users in low-income countries relative to high-income countries increased from 1.3 to 8.4%. Thus, low-income countries showed the highest growth rates between 2001 and 2005, while middle-income countries are also catching up. Note that the worldwide distribution of fixed line and mobile phone subscribers is very similar (World Bank 2007).

Nevertheless, the number of ICT users is not always a reliable indicator for the technological development of a country, as the case of India demonstrates. With on average 128 fixed line and mobile phone subscribers and 55 internet users per 1,000 people in 2005, India’s ICT penetration is smaller than China’s with 570 fixed line and mobile phone subscribers and 85 internet users (World Bank 2007). Since India is a larger exporter of computer and information services (see Sect. 3.3.1.2), this difference in ICT penetration indicates a stronger digital divide in India between the rural and urban populations.

The trend described above is confirmed by the *Networked Readiness Index* of the World Economic Forum (2007). This index measures the degree of preparation of a nation or community to participate in and benefit from ICT developments. 122 countries are ranked in the Networked Readiness Index 2006–2007 (see Appendix A). Our interpretation of the ranking is the following. The best-ranked quarter of the 122 countries includes almost exclusively high-income or upper-middle income countries according the grouping of the World Bank. The second best quarter contains countries that have already become or are becoming important offshore destinations, such as India or China. The third best quarter includes countries with a high potential to become the next generation of offshore destinations. Some of them have already established themselves as offshore destinations for countries from the second best quarter, such as the Philippines for India. The countries in the lowest quarter are unlikely to become offshore destinations for services in the near future. Note also that Appendix A clearly indicates a correlation between a country’s income and ICT penetration.

Another important issue in the context of services offshoring is the existence of sufficient internet connection between developed and developing regions. *Total interregional internet bandwidth* grew by on average 96% p.a. between 1999

and 2005. The interregional distribution clearly shows that developing regions, especially Africa, are insufficiently connected to the developed regions in Europe and North America. Despite this fact, there is evidence of a catching up of some interregional connections, especially between Latin America and the US and Canada, but also between Asia and Europe. The connections Africa–Europe, Asia–Europe, and Latin America–US and Canada all grew more than the average. Only the connection Latin America–Europe experienced negative growth. The interregional internet bandwidth between Asia and the developed regions Europe and North America represents around a third of the total interregional internet bandwidth, with 33% in 1999 and 30% in 2005 (UNCTAD 2006).

We conclude that less-developed countries and regions seem to catch up in terms of ICT penetration and interregional internet bandwidth, but there is still a long way to go for the poorest among them. In particular, the group of lower-middle income countries could become interesting offshore destinations, as they dispose of both a relatively stable ICT infrastructure, that could be further improved, and the advantage of very low costs. Note that ICTs are not only beneficial to developed countries in terms of growing services offshoring potentials, but also play an important role in economic development.

Bedi (1999) discusses a variety of potential advantages for organizations, markets, and institutions that occur with the *adoption or increased use of ICTs* in developing countries. First, as the costs for the provision, processing, and production of information decrease and the quality of information rises, the decision making process within organizations can be facilitated. Second, the increase in information flows will reduce market insecurity, which will lead to a higher participation rate in factor and goods markets and finally to higher output. Third, institutional inefficiencies are more likely to be identified and improved, when ICT-based institutional models are used. Possible negative effects of ICTs could include the increase in the wage gap between qualified (ICT-using) and less-qualified workers (Bedi 1999).

2.2.1.2 Multilateral Liberalization of Trade in Services

From the establishment of GATT in 1947 through the Tokyo Round (1973–1979), the multilateral trading system focused exclusively on goods. Services were covered first in the Uruguay round (1986–1994) and the establishment of the WTO in January 1995. The WTO replaced the GATT as an organization, but the latter still exists under the umbrella of the WTO, which at present consists of 153 member countries. The range of trade negotiations currently covers around 60 agreements and separate commitments made by individual members in specific areas. Their scope has been extended to goods, services, and intellectual property, which are covered by the Multilateral Agreements on Trade in Goods (including the GATT 1994), the GATS, and the Trade-Related Aspects of Intellectual Property Rights (TRIPS), all established in Annex 1 of the Uruguay Round agreements.

The *General Agreement on Trade in Service* constitutes the first and only set of multilateral agreements covering international trade in services. Its main objectives correspond to the ones of the GATT, which are “creating a credible and reliable system of international trade rules; ensuring fair and equitable treatment of all participants (principle of non-discrimination); stimulating economic activity through guaranteed policy bindings; and promoting trade and development through progressive liberalization” (WTO¹²). The GATS consists of two parts, namely the framework of general obligations and disciplines and the individual countries’ commitments on access to their national service markets. A summary of the main contents of the GATS can be found in Box 2.5.

Box 2.5: The general agreement on trade in services

“The Services Agreement which forms part of the Final Act rests on three pillars. The first is a framework agreement containing basic obligations which apply to all member countries. The second concerns national schedules of commitments containing specific further national commitments which will be the subject of a continuing process of liberalization. The third is a number of annexes addressing the special situations of individual services sectors.

Part I of the basic agreement defines its scope [...].

Part II sets out general obligations and disciplines. A basic most-favoured-nation (m.f.n.) obligation states that each party “shall accord immediately and unconditionally to services and service providers of any other Party, treatment no less favourable than that it accords to like services and service providers of any other country”. However, it is recognized that m.f.n. treatment may not be possible for every service activity and, therefore, it is envisaged that parties may indicate specific m.f.n. exemptions. Conditions for such exemptions are included as an annex and provide for reviews after 5 years and a normal limitation of 10 years on their duration. [...]

Part III contains provisions on market access and national treatment which would not be general obligations but would be commitments made in national schedules. Thus, in the case of market access, each party “shall accord services and service providers of other Parties treatment no less favourable than that provided for under the terms, limitations and conditions agreed and specified in its schedule”. The intention of the market-access provision is to progressively eliminate the following types of measures: limitations on numbers of service providers, on the total value of service transactions or on the total number of service operations or people employed. Equally, restrictions on the kind of legal entity or joint venture through which a service is provided or any foreign capital limitations relating to maximum levels of foreign participation are to be progressively eliminated. [...]

¹²See http://www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm

Part IV of the agreement establishes the basis for progressive liberalization in the services area through successive rounds of negotiations and the development of national schedules. It also permits, after a period of 3 years, parties to withdraw or modify commitments made in their schedules. Where commitments are modified or withdrawn, negotiations should be undertaken with interested parties to agree on compensatory adjustments. Where agreement cannot be reached, compensation would be decided by arbitration.

Part V of the agreement contains institutional provisions, including consultation and dispute settlement and the establishment of a Council on Services. The responsibilities of the Council are set out in a Ministerial Decision.”

Source: A summary of the final act of the Uruguay Round, WTO legal texts, taken from: http://www.wto.org/english/docs_e/legal_e/ursum_e.htm#mAgreement

The agreement covers all traded services and defines four different modes of supply (see Sect. 2.1.2.2). *General obligations* comprise the most-favored-nation (m.f.n.) treatment and transparency. The m.f.n. treatment prohibits discrimination by requiring from member countries to treat their trading partners equally, which applies to all services with only a few temporary exemptions. This includes, for instance, that all WTO members receive equal opportunities, when a country opens a service sector. Transparency is assured through the obligation of member countries to publish all relevant regulations and laws and to establish inquiry points. The *individual countries' commitments* to open their markets and the measures to be taken are specified in the “schedules” listing the respective sectors, the extent of market access (e.g., limitations on the number of service providers, service operations, or employees in the sector), and possible limitations on national treatment (i.e., whether or not rights to local firms are granted to foreign firms).

Setting up of a framework for a multilateral trading system that covers services is seen as the major achievement of the GATS. Nevertheless, some weaknesses of the GATS slowed down the progress of liberalizing the service sectors in the five subsequent years except for the financial and telecommunications sectors (for a discussion of the weaknesses and suggestions of new rules, see Mattoo 2001). One of the weaknesses is that members have not agreed whether an electronic services provision should be considered cross-border trade (mode 1) or consumption abroad (mode 2). Another weakness is the ‘positive list’ approach pursued in the GATS, i.e., measures concerning trade liberalization only apply to listed services (Mattoo and Wunsch-Vincent 2004).

According to Article XIX of the GATS, a *new services round* should start not later than five years from the date of entry into force. Thus, the first phase of negotiations began in January 2000. It was concluded in March 2001 with the agreement of the member countries on the guidelines and procedures of the service round, which have been incorporated into the Doha Development Agenda. Another part of negotiations is related to the m.f.n. treatment. The GATS 1995 allowed

exemptions of more favorable treatments, which should be limited to ten years. All exemptions are now being reviewed with regard to the question if the conditions for their first application exist to date and should remain part of the new negotiations. In addition, an agreement of March 2003 takes into account the liberalization efforts of member countries on their own initiative when negotiating market access in services.¹³

To sum up, the process of liberalizing the service sectors seems to have accelerated with the new services round, but the achievements of the GATS are still difficult to estimate. This might be largely linked to the nature of trade in services and its measurement.

“International trade in services requires, unlike trade in goods, no physical package to cross borders, frequently has no description of content, or information on quantity, origin or destination, and critically has no administrative system based on customs duty collection measuring it. [...] International service trade data [...] are collected through both business accounting and recordkeeping systems, administrative sources, regular surveys of businesses as well as numerical estimations by statistical agencies (Kirkegaard 2004, p. 24).”

2.2.1.3 Regional Liberalization of Trade in Services

Besides the GATS, the liberalization of trade in services is also fostered by endeavors of *regional trade agreements* (RTAs). In the late 1980s and early 1990s, the first RTAs, promoting the liberalization of services trade, entered into force, such as the Australia–New Zealand Closer Economic Relations trade agreement (CER) in 1983, the European Community’s Single Market in 1987, the Canada–United States Free Trade Agreement (FTA) in 1989, and the North American Free Trade Agreement (NAFTA) in 1994 (Hoekman and Sauvé 1994). In the 1990s, approaches towards services liberalization have been undertaken, for instance, by the Association of Southeast Asian Nations (ASEAN) in 1997, the Mercado Común del Sur (MERCOSUR) in 1997, the Andean Community in 1998, and the Caribbean Community (CARICOM) in 1998 as well as by numerous bilateral RTAs (Stephenson 2002).

The EU shows the deepest regional initiative concerning trade liberalization of services. Progress has mainly been made through the further clarification and development of the two “fundamental freedoms” of the European Community (EC) Treaty – the freedom of establishment and the freedom to provide cross-border services – through specific legislation in fields such as financial services, telecommunications, and broadcasting, and through the recognition of professional qualifications (EU 2008).

Although the 1992 Single Market initiative proposed actions to integrate the service markets, segmentation still exists due to national regulations defining

¹³Most of the information is retrieved from the homepage of the WTO (<http://www.wto.org>).

the qualifications, competition, and control of firms, which constitute barriers to trade (Hoekman 2006). As a result, the Lisbon summit of EU leaders in March 2000 asked for a strategy to remove cross-border barriers to services. This included the publication of a report on the State of the Internal Market for Services, identifying obstacles to free intra-EU services trade in July 2002. Another important result is the Services Directive, proposed by the European Commission in January 2004. After revision, it was adopted by the European Parliament and the Council in December 2006 (see Box 2.6) and must be implemented by the member states by the end of 2009 (EU 2008).¹⁴

Box 2.6: Final legislative act of the EU services directive (extracts)

“The key elements of the Directive can be summarised as follows:

1. *General provisions*

The Directive establishes the general provisions for facilitating the freedom of establishment for service providers and the free movement of services. [...] The scope of the Directive is very specific. It will not apply to: *non-economic* services of general interest; (the Directive later specifies that certain economic services of general interest will also be excluded from the Directive. They include, inter alia: postal services; the electricity sector; the gas sector; water distribution and waste water services); financial services; electronic communication services and networks; transport services; temporary work agencies; healthcare services; audiovisual services; gambling activities; activities connected to official work; social services; private security services; and services provided by notaries and bailiffs.

In cases where service sectors are already regulated under EU legislation then existing provisions will prevail over the provisions set out in this Directive. The Directive will not concern rules of private international law.

2. *Administrative simplification*

To date, one of the main causes of market fragmentation has been overly cumbersome administrative procedures. One of the key aspects of this Directive, therefore, is to provide for administrative simplification. As a result, the Directive provides that in future, application forms will be based on a standard European form, which will be developed by the Commission in accordance with comitology procedures. Service providers seeking the cross-border establishment of their activities will be able to apply through a national “Single Contact Point”. The single contact points will: provide applicants with all the necessary information needed to establish themselves abroad; set up a system whereby all procedures and formalities can be easily completed; and allow for applications to be submitted at a distance and by electronic means.

¹⁴See http://ec.europa.eu/internal_market/top_layer/index_19_en.htm

3. *Freedom of establishment*

Those seeking “the right of establishment” will not be subject to authorisation schemes. Authorisations will only be permitted on condition that they are non-discriminatory; they are justified on the grounds of public interest; and the objective can not be achieved by less restrictive measures (i.e. an inspection would take place too late). Any authorisation that fulfils these criteria must, in any case, be reported to the Commission.

4. *Free movement of services*

Member States must respect the right of service providers to operate in a country other than the one in which they are established. As such, service providers will not need: to be established in the territory in which they are seeking to work; to obtain an authorisation; to register with a professional body or association; or be banned from setting up a certain type of infrastructure which they may need to supply the services in question. Only requirements concerning public policy, public security, public health or the protection of the environment may be imposed on a service provider.

The above, however, will not apply to services of economic interest such as, the postal sector; the electricity sector; the gas sector; water distribution services etc.

5. *Quality of services*

In order to protect consumers, the Directive lists a number of provisions, applicable to the service industry. For example, service providers must provide the Member States with their name; legal status; geographic address of establishment; registered trade number; authorisation scheme (where relevant); VAT number; after sales guarantees etc. They must also, where necessary, subscribe to a professional liability insurance.

6. *Administrative co-operation*

The Directive obliges Member States to offer each other mutual assistance and to put in place measures for effective co-operation in order to ensure the correct supervision of providers and the services they provide. An “alert” mechanism is also set out.

7. *Convergence programme*

The Member States will, in co-operation with the Commission, take accompanying measures to encourage the drawing up, at a Community level, of codes of conduct which seek to facilitate the provisions of a service.

Entry into Force: 28 December 2006.

Transposition: 28 December 2009.

Source: 12/12/2006 – final legislative act (COD/2004/0001), taken from: <http://www.europarl.europa.eu/oeil/resume.jsp?id = 240902&eventId = 980998&back-ToCaller = NO&language = en>

Kox and Lejour (2006) stress that the policy heterogeneity within the EU causes different fixed market-entry costs for service providers. They find that these policy heterogeneity costs in the EU affect services trade and FDI negatively.

According to this study, the 2004 Services Directive could have counteracted this negative effect by reducing the fixed market-entry costs. Due to the adoption of the revised Services Directive in 2006, which excludes the acceptance of home country regulation, the authors, however, expect less positive trade effects (as reported by Hoekman 2006). Hoekman (2006) notes that similar cost reduction effects might be generated for a non-EU country by accession to the EU or by adopting parts of the *acquis communautaire*.

As a consequence, the multilateral form of trade liberalization is sometimes considered superior or equal to regional trade agreements (e.g., Hoekman and Sauvé 1994). Thus, Hoekman (2006) concludes that “[t]he resistance inside the EU to fully liberalizing intra-EU services trade, and the length of time it has taken EU members to open intra-EU trade in services, also illustrates that the challenges to services liberalization may not be that much easier to address regionally than multilaterally” (Hoekman 2006, p. 39).

Stephenson (2002), however, discusses why RTAs have been more successful than the GATS in terms of transparency, stability, and liberalization of trade in services. First, many RTAs have surpassed the GATS in establishing disciplines for trade in services by using a different approach. Unlike the GATS, whose disciplines apply separately to goods, services, and intellectual property, some RTAs – inspired by the NAFTA – have adopted an integrated approach, where disciplines (e.g., on investments, on technical barriers to trade, on the movement of natural persons) apply simultaneously to goods and services.

Second, many RTAs apply a ‘negative list’ of services in contrast to the ‘positive list’ approach of the GATS. In the first perspective, all services are subject to the obligations of trade liberalization, unless they appear in the negative list. Either approach can lead to equal results in terms of services liberalization, but the negative list approach requires the members to reveal all non-conforming measures and excluded sectors.

Third, transparency is increased in some RTAs (e.g., Andean Community, CARICOM, MERCOSUR) by requiring member countries to publish their national inventories of measures affecting trade in services, which serves as the basis for removal of such restrictions. Other indicators for the superiority are the possibility of RTAs of a deeper integration due to stricter disciplines for services trade (e.g., an unconditional m.f.n. and national treatment in the MERCOSUR and the Andean Community) or due to their smaller size (Stephenson 2002).

To sum up, the number of regional and especially bilateral trade agreements has increased enormously in the last two decades, fostering the liberalization of trade in services. The deepest regional initiative has been made in the EU, but free intra-EU trade in services has still not been reached. Based on the arguments of Stephenson (2002), we believe that regional trade agreements are probably more effective than the GATS in promoting the liberalization of services. Another advantage is the greater flexibility of RTAs, since only a fraction of countries is included compared to the large number of WTO-members.

2.2.2 *Services Offshoring Motives of Firms*

This subsection examines the diverse *offshoring motives of firms and their expected domestic employment effects*. Traditionally, captive-offshoring (FDI) motives have been classified market-oriented, cost-oriented, and procurement-oriented. Newer motives can often be allocated to the traditional motives. The search for human capital abroad, for instance, which is clearly a newer phenomenon, can basically be considered a procurement-oriented motive. Remember that captive-offshoring is not the only form of offshoring. Firms might choose the form of offshore-outsourcing, motivated by advantages of SSPs abroad. We have already discussed motives why firms prefer external service provision to in-house production (Sect. 2.1.3). Thus, efficiency-based motives (Sect. 2.1.3.1) included e.g., the search for flexibility, while resource-based motives (Sect. 2.1.3.2) outlined the focus on firms' core competencies related to marketing, finance, R&D, and design. However, these motives do not reveal why outsourcing firms decide to go offshore. Offshore-outsourcing basically happens for the same motives as captive-offshoring, but the search for lower cost and the shortage of domestic inputs are more likely in this category than market-oriented motives.

The expected employment effects of an offshoring decision depend on the relationship between domestic and foreign production. First, the *substitutionality hypothesis* claims that offshore production replaces home production due to cheaper re-imports, which leads to negative domestic employment effects in the short term. Second, if domestic and foreign production are complementary, offshoring affects domestic employment positively according to the *complementarity hypothesis*. Third, since home and foreign production have no relationship in the *neutrality hypothesis*, offshoring has a neutral impact on domestic employment (modified from Henneberger, Graf, and Vocke 2000). For a long time, the relationship between offshore and domestic service production was supposed to be neutral due to the non-tradability of services. The tradability of disembodied services and the possibility of cheaper re-imports, however, made negative employment effects possible within the formerly inviolable service sector. Before defining and analyzing each of the three main offshoring motives, further offshoring motives and their relative importance are shown.

Single market-oriented motives are chosen to evade trade barriers, notably import restrictions (e.g., high import duties) by a local presence. Often, third countries try to benefit from reduced or eliminated internal tariffs in integrated regions through foreign affiliates. Free trade zones protect themselves from the possibility that companies import their goods via the member country with the lowest external tariff by imposing "local content requirements", which force firms to produce on site (Roling 1999; Tüselmann 1998). Single market-oriented motives become less important in view of globally falling import tariffs. The average tariffs for goods to the EU15 and the US have been cut by half between 1991 and 2005. Especially, import tariffs on goods from countries in transition were reduced by approximately three-quarters (UNCTAD GlobStat Database).

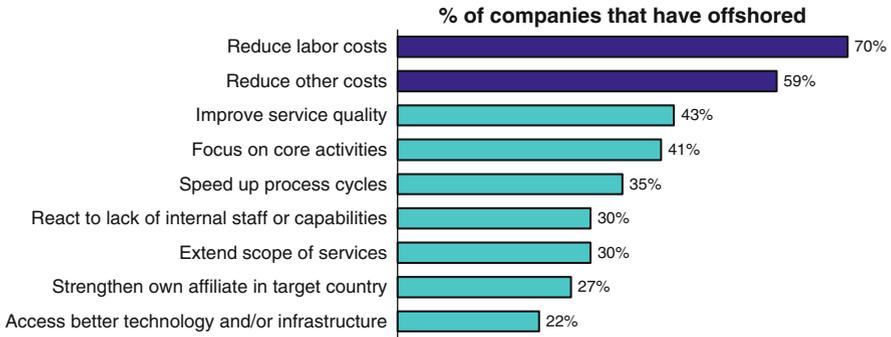


Fig. 2.6 Expected benefits from services offshoring

Source: own illustration. Based on UNCTAD and Roland Berger (2004), p. 9. NB: multiple answers possible

The *relative importance* of the different motives for services offshoring is shown in Fig. 2.6. The UNCTAD and Roland Berger Strategy Consultants (2004) analyzed a representative sample of the top 500 European firms on their services offshoring strategies, which constitutes the first survey on services offshoring in Europe. The company sample accounts for more than a fifth of the revenue of Europe's top 500. Asked on their expected benefits from services offshoring, the majority of the respondents first mentioned the reduction of labor costs (70%) and the reduction of other costs (59%). Besides cost-oriented motives, a variety of other expected benefits encourages firms to relocate services. The survey ranks the improvement of service quality third (43%) and the focus on core activities fourth (41%). Other motives include the search for staff and capabilities or better technology (UNCTAD and Roland Berger 2004). Another study surveyed 119 German firms, based on 144 offshoring arrangements, on their most important offshoring motives. They are ranked as follows: skill-level in the offshoring country, search for low costs, quality of the infrastructure, existing business experiences, political stability, and linguistic aspects (Hutzschenreuter et al. 2007).

2.2.2.1 Market-Oriented Motives

Traditional offshoring motives can be *market-oriented* in order to build up, maintain, or increase a company's market share abroad (Trabold et al. 2001), especially in the presence of stagnating domestic demand for goods and services. Market-oriented motives also integrate aftersales activities, such as customer service, sales and distribution, marketing, and so forth. A local presence abroad – be it an affiliate or an external sales company – directly or indirectly increases the company's local know-how, which in turn helps to attract new customers and to adopt quickly to changing customers' needs and tastes. Especially, large markets with huge current

Table 2.2 Tradability of services and main offshoring motive

		Main offshoring motive		
		Market-oriented	Cost-oriented	Procurement-oriented
Tradability of services	Non-tradable	<i>Neutrality hypothesis:</i> firms serve foreign markets via a local presence. (No export solution)	<i>Neutrality hypothesis:</i> domestic procurement of services. (No import solution)	<i>Neutrality hypothesis:</i> no procurement of imported services
	Tradable	<i>Substitutionality hypothesis:</i> foreign production substitutes for domestic service production (exports) <i>Complementary hypothesis:</i> foreign production reinforces domestic service exports (e.g., of intermediate inputs) <i>Neutrality hypothesis:</i> foreign production accompanies domestic service exports	<i>Substitutionality hypothesis:</i> foreign production (imports) substitutes for domestic production	<i>Complementarity hypothesis:</i> procurement of imported services renders domestic production possible

Source: own illustration

or potential growth and a high degree of trade integration, such as China or India, represent attractive offshore destinations.

What are the effects of market-oriented offshoring on domestic employment? In a first step, services need to be subdivided into non-tradable and tradable services. Table 2.2 classifies services with respect to their tradability and their main offshoring motive. Let us focus on market-oriented offshoring. When *non-tradable* services are considered (upper part of the table), foreign markets can only be served by a local presence. As an export solution from the country of origin to the destination country is not possible, domestic and foreign production have a neutral relationship with no impact on domestic employment (neutrality hypothesis).

If services are *tradable* (lower part of the table), market-oriented offshoring motives can affect domestic employment in a threefold manner, depending on the relationship between offshoring and exports. *Export-substituting* offshoring is expected to replace home produced goods and services, thereby reducing labor demand at home (substitutionality hypothesis). *Export-boosting* offshoring is anticipated to stimulate home production and increase home employment

(complementarity hypothesis). *Export-accompanying* offshoring decisions are presumed to have a neutral domestic employment effect (neutrality hypothesis). The overall employment effect of market-oriented motives is assumed to be generally positive in the short and medium term (Roling 1999).¹⁵

2.2.2.2 Cost-Oriented Motives

While earlier studies detected market-oriented motives as the principal driver behind (captive) offshoring, more recent studies reveal a shift towards *cost-oriented motives* for Germany (see, e.g., Beyfuß and Eggert 2000; Jungnickel and Keller 2003). Cost-oriented motives aim at exploiting lower costs abroad, such as lower prices and other related advantages. Services contain a high offshoring potential, as their production is generally labor-intensive. In most cases, MNCs apply the “mixed calculation” strategy, relocating labor-intensive parts of their value chain and maintaining (human) capital-intensive parts at home.

One can distinguish between production-oriented, location-oriented, and scale-effect-oriented cost motives. *Production-oriented cost motives* include the direct search for lower wages, non-wage labor costs, construction and transport costs, or land prices. Production-oriented cost motives are driven by so-called *pull-factors*, i.e., attractive conditions in the destination country with respect to the production, but *push-factors* in the home country, such as high wages, can also provoke or accelerate the relocation process (Henneberger and Ziegler 1998). Thus, some authors find evidence for a positive impact of high domestic wages on offshoring and outsourcing. Hatzius (2000) detects a positive relationship between high unit labor costs in Germany and the UK and outward FDI-flows between 1982 and 1993. Girma and Görg (2003) show that high domestic wages are positively related to outsourcing. Görzig and Stephan (2002) find that, for Germany, the main motivation for outsourcing is the saving of internal resources, especially the costs for labor and capital investments.

Potential *cost savings* from offshoring IT services up to 40–60% are often communicated, but real savings seem to be lower. Indian IT service providers report savings of 20–25% (Boes 2004). According to a recent study including 119 German firms (based on 104 offshoring implementations), offshoring led to cost savings of 32% in IT, 26% in product development, 23% in call centers, and 20% in human resources, as well as 16% in accounting and finance and in R&D. Many firms reported a high discrepancy between planned and achieved savings, which was highest in call centers, accounting and finance, and IT. Most of the cost savings could be reaped within 12 months, but some activities still generated a large part of

¹⁵Note that the tradability of services also contains the possibility of closing down a foreign presence or of reducing foreign production by serving the foreign market with increased domestic exports.

their cost savings after twelve months, e.g., accounting and finance (66%), human resources (50%), and R&D (41%) (Hutzschenreuter et al. 2007).

Labor cost savings are high when qualified jobs are offshored, but even higher when less-skilled tasks are relocated. According to the National Association of Software and Service Companies (NASSCOM), which constitutes the chamber of commerce and is considered the “voice” of the IT software and services industry in India, an Indian call-center employee earns only a tenth of its British counterpart, whereas an IT programmer with five years work experience already earns a quarter (The Economist 2003). Nevertheless, hourly rates for computer programmers in India and the Czech Republic were around a seventh of German rates in 2004 (Schaaf 2004). The *average annual salary in IT and BPO* for 2005 as well as the projected average for 2010 are shown in Fig. 2.7. According to these forecasts, India is expected to experience the most significant wage increase. Industry maturity, increasing competition, growing complexity of offshoring projects, or stable demand are identified among the key drivers (neoIT 2006). Since Indian wages and other costs grow by 10–15% per year, IT and BPO providers in India face the challenge to cut total costs in order to maintain the 40% cost advantage for their customers (NASSCOM and McKinsey Global Institute 2005).

Location-oriented cost motives focus on a business-friendly environment, such as subsidies, tax incentives, fewer environmental requirements, less regulation, or a more liberal redundancy protection abroad. Contrary to production-oriented motives, location-oriented motives aim at cutting costs in a more indirect way. The pull-factor here is the attractive business environment in the destination country, but domestic push-factors such as high regulation and taxes can speed up the offshoring process. Ireland, for instance, has been attracting enormous amounts of FDI-flows for two decades thanks to its low corporate tax of initially 10%. Ireland’s European neighbors put pressure on its tax policy, so Ireland raised corporate taxes to 12.5% in 2003. Gaston and Nelson (2001) find that labor costs are only indirectly included in captive-offshoring decisions, as the majority of

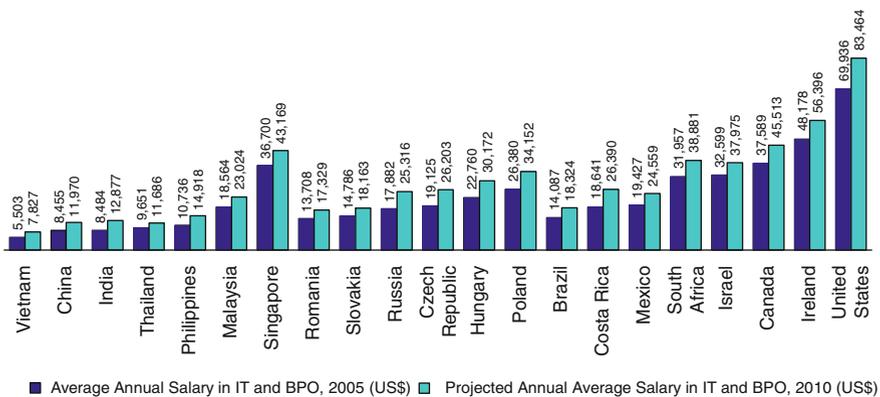


Fig. 2.7 Average annual salary in IT and BPO, 2005 versus 2010 (US\$)

Source: own illustration. Data: neoIT (2006), p. 21

worldwide FDI goes to high-income countries. Although FDI flows to the US are directed towards states with a lower wage level, this is considered rather a consequence of low levels of labor laws, trade union activities, and centralized wage settings.

Scale-effect-oriented cost motives can be categorized into motives at the company level and motives at the operational level. *Scale-effects at the company level* are generated when foreign subsidiaries can benefit from specific knowledge of the parent company or another part of the company without significant extra costs. This includes technical, marketing, organizational, and other knowledge. Relocation to low-income countries can thus reduce fixed R&D costs (Borrmann 2001). Another advantage is the possibility to work in several shifts around the globe. American firms with subsidiaries in India, for instance, benefit from these time shifts when they order a service today and receive it tomorrow. Recently, the disadvantages of such time-differences have come to light, since Indian employees have started to complain about bad working hours and night-shifts. *Scale effects at the operational level* are a result of technical cost-advantages due to mass production (Borrmann 2001).

In a next step, the implications of *cost-oriented offshoring* for domestic employment are evaluated (see Table 2.2). When services are *non-tradable*, there is *no import solution* and the services must be produced in the home country even if a company wishes to relocate in order to cut costs. Hence, domestic employment is not influenced here. In the case of *tradable services*, foreign production substitutes for domestic production and offshored services are re-imported to the home county. This results in direct negative employment effects in the short term, because specific segments are affected by layoffs or wage reductions. However, this “job export” can only be considered avoidable if an alternative domestic solution exists. Some argue that the provision of cheaper re-imports through offshoring helps MNCs to save or even strengthen the productive jobs at home by relocating less productive jobs abroad (Roling 1999; Trabold et al. 2001).

2.2.2.3 Procurement-Oriented Motives

Third, the *procurement of inputs* which are rare or unavailable in the home country (e.g., raw materials, preliminary products) represents another traditional offshoring motive. More recent motives in this category are the provision of human-capital, know-how, and technology from abroad. The form of captive-offshoring is often preferred to guarantee a regular and secure provision with such inputs. Jungnickel and Keller (2003) show that the relevance of strategic *asset-seeking* for German manufacturing companies has grown, especially when TACs are low. Marin (2004) finds that the high average qualification and R&D intensity of German affiliates in the CEECs reflect the *search for human capital*. The procurement of foreign services is one option to counteract the decreasing demographic trend and the talent shortage in many developed countries.

The effects of procurement-oriented services offshoring on domestic employment are shown in Table 2.2. *Non-tradable* service inputs cannot be provided from

abroad (neutrality hypothesis), and domestic employment is thus not affected. When services are *tradable*, the procurement of foreign inputs enables domestic production, which raises the demand for domestic labor (complementarity hypothesis) (e.g., Roling 1999). Henneberger et al. (2000) estimate that the substitutionality hypothesis is applicable to more than 50% of all services, for instance in the banking, assurance or marketing sector. Developments in ICTs could further raise this share (Henneberger et al. 2000).

Procurement of Agglomeration Advantages

A first and more recent procurement-oriented offshoring motive is the provision of *agglomeration advantages*. Agglomeration advantages can be understood as Krugman's theoretical "core" of the New Economic Geography, a geographical accumulation of different firms from different sectors which are concentrated in agglomerations due to scale-effects and external effects. The latter include the presence of human capital and suppliers as well as knowledge or technology spill-over effects (Soci 2003). Generally, such spill-over effects cannot be transferred via markets. According to Jungnickel and Keller (2003), agglomeration advantages can be subdivided into *asset-seeking*, e.g., knowledge and technological potential, and *efficiency-seeking*, e.g., scale-effects and favorable conditions abroad. Agglomeration advantages become more relevant when TACs for trade and FDI are falling, since firms are then rather located in the most competitive agglomerations, where they can similarly benefit from knowledge effects, scale-effects and external effects.

Jungnickel and Keller (2003) show that market-oriented offshoring is still important for German firms, but observe a shift towards cost- and agglomeration-oriented offshoring, especially asset-seeking. The change of strategy towards asset-seeking and efficiency-seeking is evoked by diverse changes on the supply and on the demand side. First, the development of a more deregulated single market and the opening of domestic markets attract more foreign competitors. Second, technological progress leads to shorter life-cycles and greater uncertainty about the competitive situation in the future, which requires rapid innovation and the tapping of external, complementary knowledge. Third, developments in ICTs facilitate the coordination within and between firms. As a consequence, firms face both greater competitive pressure and more opportunities and possibilities.

These changes go along with the following two trends. First, the share of greenfield investments relative to M&As has continuously decreased. Second, integrated capital markets and investment banks put a higher pressure on firms to become more efficient and innovative (Jungnickel and Keller 2003). Since the costs of trade in services have been reduced due to trade liberalization (Sects. 2.2.1.2 and 2.2.1.3) and developments in ICTs (Sect. 2.2.1.1), we expect a growing importance of asset-seeking and efficiency-seeking services offshoring.

The pressure of increased competitiveness requires firms to search for efficiency and assets at specialized locations. Therefore, agglomeration-oriented offshoring should not be considered a substitute for trade. Domestic employment effects are

not expected to be negative, since agglomeration-oriented offshoring rather supports the firms' competitiveness and assures domestic jobs in the parent company. Schaaf (2004) describes the *specialization patterns* of the most important offshore destinations (agglomerations) for IT and BPO services. The study shows that maintaining high-quality production in developed countries while offshoring lower-quality processes to less-developed countries does *not* apply to IT and BPO services (for more details, see Sect. 3.3.1.4). Thus, firms can benefit from agglomeration advantages both in developed Ireland and in developing India.

Procurement of Human Capital

The procurement of human capital, a more recent offshoring motive, could also be considered part of asset-seeking. However, a small but important difference remains. While the procurement of agglomeration advantages focuses on the *spill-over effects* due to the presence of human capital in agglomerations, the procurement of human capital centers purely on its supply. The *shortage of skilled labor* in developed countries, combined with the relative abundance of human capital in less-developed countries, contributed strongly to the services offshoring wave. The annual growth rates of the German human capital stock (per capita) increased by 0.85% between 1960 and 1980, fell to 0.75% between 1980 and 1990, and then fell further to 0.18% between 1990 and 1997 (Koman and Marin 2000; Marin 2004).

On the other hand, the demand for qualified labor rose in the 1990s due to increased trade integration with the CEECs and developments in ICTs, resulting in a shortage of human capital. In its annual report of 2001/2002, the German Council of Economic Experts (*Sachverständigenrat*) reports on the shortage of human capital, especially in Western Germany, but also notes that the shortage of skilled labor is not a new phenomenon in Germany. Involuntary job vacancies were mainly found in smaller knowledge- and technology-intensive service companies and in the manufacturing sectors. The lack of suitable candidates, but also exceeded wage expectations, represented the main reasons for the shortage of qualified labor (*Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung* 2001).

Recently, the DIHK published a survey on the shortage of human capital in Germany. One-third (33%) of the 20,000 companies had job vacancies in 2007 compared to 16% in 2005, whereby the share increased with the size of the company. At the sectoral level, 40% of the manufacturing companies were affected, out of which 83% had difficulties in finding engineers and technicians. 32% of the service companies could not fill vacancies, out of which 39% had vacant service jobs, 32% vacant commercial jobs, 30% vacant engineering/technical jobs, and 22% vacant IT jobs. 85% of the data processing firms with job vacancies had immense difficulties in finding IT-specialists. Germany has a bottleneck of graduates in mathematics, informatics, natural sciences, and technical engineering (MINT). Vacancies in IT and engineering require skilled workers with tertiary education (DIHK 2007).

Marin (2004) relates the German human capital shortage to offshoring decisions of domestic firms. Her study includes 2,200 investment projects of 660 German and Austrian firms to Eastern Europe and covers the period between 1990 and 2001. One of the main findings was that firms offshored the most skill-intensive parts to the CEECs as a response to the human capital shortage in Germany and Austria. Thus, the shares of high-skilled employees in the total affiliates' workforce was on average two to three times higher than the share in the German parent company. Likewise, the average share of employees in R&D and engineering in the Central and Eastern European affiliates was slightly higher than in the German parent company (Marin 2004).

However, a higher quantity of human capital in Eastern Europe does not necessarily reflect a better quality of services. Hutzschenreuter et al. (2007) surveyed 119 German firms and found that, for 74% of the 126 offshoring implementations, the planned service quality was obtained within twelve months, and for further 16% after twelve months. However, 39% of the offshoring projects to Eastern European locations required more than a year to achieve the planned service quality level, compared to only 22% in Asia, 23% in Western Europe, and 18% in North and Central America (Hutzschenreuter et al. 2007).

If Germany responds to its human capital shortage of engineers or IT-specialists by performing such services in Eastern Europe or India, one could expect positive domestic employment effects, since otherwise the domestic production requiring these services could not be maintained at home. The provision of human capital through imports of intermediates (indirect provision) and immigration of skilled labor (direct provision) can counteract the shortage of skilled labor and the decreasing demographic trend in developed countries, at least in the short term. If politics constrain the first and second possibilities, a last medium- or long-term option would be an effective education policy to produce enough talent at home (see Sect. 6.2.3).

2.2.3 *Developments in the Destination Countries*

2.2.3.1 **Availability of Human Capital in Less-Developed Countries**

As we have seen in the previous sub-subsection, offshoring to less-developed countries with a relative abundance of human capital could solve the problem of human capital shortage at home. Thus, the number of graduates per year in mathematics, computer sciences, and natural sciences reached 66,000 in Germany, compared to a talent pool of 250,000 in China and 320,000 in India (Moczadlo 2004). In the following, the *availability of skilled labor in the destination countries* with a focus on developing countries is evaluated, starting with India.

Figure 2.8 shows that the *total number of knowledge professionals in the Indian IT sector* grew from around 56,000 in 1990–1991 to 284,000 in 1999–2000, and reached almost 1.3M in 2005–2006 (NASSCOM 2006b, c). The employment share

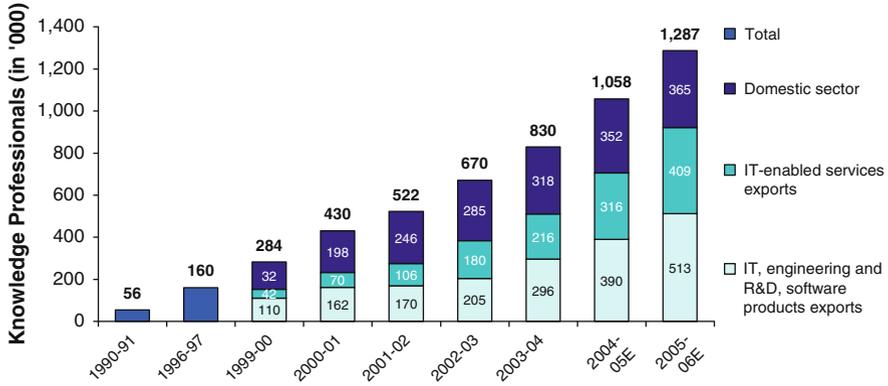


Fig. 2.8 Knowledge professionals employed in the Indian IT sector
Source: NASSCOM (2006b, c). NB: numbers do not include employees in the hardware sector

of the IT export sector in total IT employment was 54% in 1990–1991, which expanded to 72% in 2005–2006. Accordingly, the employment share of the domestic IT sector fell from 46 to 28% over this period. Within the IT export sector, “IT, engineering and R&D, and software products” play a larger role than IT-enabled services, but the latter have caught up in terms of employees. Recently, the NASSCOM reported that the number of BPO-IT professionals exceeded 1.6 million in 2007, mainly due to India’s demographic profile and the network of high-quality academic institutions (NASSCOM 2007a). The advantages of India’s talent pool are characterized as follows:

“From India’s young demographic profile (an inherent advantage), to its vast network of academic infrastructure that churns out 3.1 million graduates annually, to its English-speaking workforce, the country offers an unmatched mix of human-power benefits to organizations (NASSCOM 2007a).

However, recent estimates of the NASSCOM reveal that India’s technology sector created 50,000 fewer jobs in 2008 than in the preceding year due to the downturn of its economy, but still added 200,000 employees. Thus, captive offshoring operations in the financial sector, such as American Express and Goldman Sachs, laid off part of its workforce. On the other hand, many Indian service providers such as Infosys, who strongly depend on banks and other financial clients, must also cut back (Kahn 2008).

India stands out not only in terms of quantity but also of quality since, in 2002, most companies worldwide with the Capability Maturity Model (CMM[®]) Level 5 were located in India. The CMM[®] is a capability model, developed and instituted by the Software Engineering Institute at Carnegie Mellon University, that helps buyers to find reliable software suppliers by identifying a supplier’s processes and understanding their maturity level. Level 5 is the highest level possible. The 2007 Strategic Review of the NASSCOM states that as of December 2006 over 440

Indian companies had acquired quality certifications, out of which 90 were CMM[®] Level 5 certifications (NASSCOM 2006a).

India's total fresh IT labor supply grew from 150,000 professionals in 2003–2004 to 180,000 in 2006–2007 (NASSCOM 2006b). The former president of the NASSCOM, Kiran Karnik, reported that 200,000 professionals in engineering and computer science were added to the IT sector in 2007. A similar number accounts for the BPO sector. Nevertheless, first concerns about a possible *human capital shortage* in India itself are being mentioned, with a national engineering capacity of around 550,000 jobs and an IT sector selection ratio of only 30%. This already constitutes a problem today and could rise in the future. In order to improve the selection ratio, the NASSCOM proposes measures to expand professional education, which should be accompanied by curriculum and pedagogic changes (NASSCOM 2007b).

One initiative in the IT–BPO industry is the *employment pyramid approach*, which has been initiated by a partnership of the NASSCOM, the Indian government, and academia. The base of the pyramid stands for simple technical skills, the middle of the pyramid represents mainstream skills, and the top of the pyramid stands for high-end technology skills. One of the largest challenges is the top of the pyramid, as India aims to produce more PhDs and research scientists. The middle part of the pyramid will account for the majority of the shortage in the future, whereby measures are implemented to improve the fit between employees and employers. Workers in the bottom part of the pyramid should be equipped with hard and soft skills in order to ensure their employability (NASSCOM 2007a).

Besides India, other countries also dispose of a large amount of IT supply. According to Tschang and Xue (2005), the number of IT graduates in China rose from 29,000 to 41,000 between 1999 and 2001 (taken from Arora and Gambardella 2004). However, according to a report in 'The Economic Times' of 17 September 2007, China faces shortages, notably the low number and quality of PhDs, which impedes its progress in becoming a global science and technology leader. A new program was established in collaboration with the US which encourages PhD students at Chinese universities to spend 12–24 months at a US faculty. During their stay, the research proposal is defined and a major part of the research work is undertaken, before the students finish their dissertation back at the Chinese home university. The advantages include that students use current technologies and create links with US laboratories. In the 2007–2008 academic year, approximately 4,000 Chinese PhD students received such a fellowship, which costs about 40,000 US\$ per person. These students work on a J1-visa that obliges them to return to their home country immediately after completion of the program for at least 1 year. This restriction and the fact that the students only obtain their PhD degrees at their home universities are incentives to make them return (Srivasta and Jalote 2007).

According to Botelho et al. (2005), Brazil had 18,000 graduates in 2000, which relative to the total population is more than in India or China (taken from Arora and Gambardella 2004). To give an example for a developed country, Ireland produces 34,000 graduates p.a. and has one of the highest proportions of adults with tertiary education in the total population. 30% of these degrees are in science

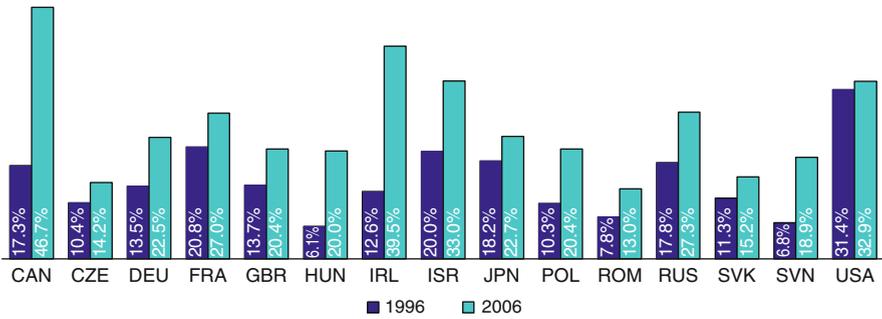


Fig. 2.9 Share of tertiary educated in the economically active population (%)

Source: own illustration. Data: ILO LABORSTA yearly statistics. Tertiary education includes the third level, first stage, leading to a first university degree or equivalent qualification, and the third level, second stage, leading to a higher tertiary degree. NB: 1995 instead of 1996 figures for Slovakia. 2002 instead of 1996 figures for the US. 2002 instead of 2006 figures for Canada. 2003 instead of 2006 figures for Slovenia. 2005 instead of 2006 figures for the Czech Republic, France, and the United Kingdom

and technology (Arora and Gambardella 2004). Figure 2.9 shows the *share of tertiary educated in the economically active population* for some selected countries. In 2006, Ireland's share (39.5%) was the second largest after Canada (46.7%), followed by Israel (33.0%) and the US (32.9%). Germany (22.5%) and the UK (20.4%) have a relatively small share of tertiary educated among the developed countries. The CEECs including Russia all increased their shares between 1996 and 2006, but still did not catch up except for Russia.

According to Arora and Gambardella (2004) an *excess supply of human capital* was driving the immense growth of the software industry in the 3I-countries India, Israel, and Ireland. Although all 3I-countries did not have the highest number of specialists, they had an excess supply of engineering and technology graduates in the 1980s and early 1990s relative to the demand-side. Moderate annual growth rates of 2 to 3% between 1970 and 1990 resulted in low opportunity costs of working in the software industry, contrary to the Asian Tigers, South Korea, Taiwan, and Singapore. The reasons for the abundance of skilled workers are not yet well analyzed, but the high level as well as the elasticity of supply of human capital represented two decisive factors (Arora and Gambardella 2004).

This rapid increase in human capital was fuelled by *private and public investments*. In India, new capacity was created mainly in the private sector. In 2003, 80% of the accredited intake capacity for engineering students at the undergraduate level was absorbed by privately financed colleges. Ireland, Israel, and China benefit from public investments. Ireland, for instance, used around 40% of its EU structural funds for human capital investments between 1989 and 1999 (see Fig. 2.10), while other net recipients like Greece and Portugal invested predominantly in physical capital (Arora and Gambardella 2004). In comparison, the remaining EU11 countries invested less than 30% in human capital.

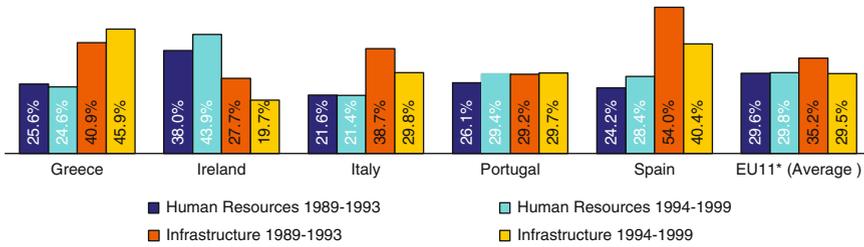


Fig. 2.10 Distributions of EU structural funds 1989–1993 and 1994–1999 (%)
 Source: first report on economic and social cohesion 1996 DG XVI EC Brussels, p. 147. The 11 EU countries comprise Austria, Belgium, Germany, France, Greece, Ireland, Italy, Netherlands, Portugal, Spain, and United Kingdom

One important reason for the acceleration of this process lies in the *diaspora*, i.e., a large part of the talent pool emigrated to industrialized countries. Qualified immigrants can share their knowledge and expertise when returning to their home country, which is expected to increase quality and the stock of human capital there. The US in particular has absorbed a high number of immigrants from India, Ireland, and Israel, as well as from China and Brazil. Arora and Gambardella (2004) refer to a study of Kapur and McHale (2005) which shows that Indians and Chinese received most of the H-1B visas, which are approved for a limited stay. Indians obtained 42% of these visas, out of which more than a half were for computer-related areas. Despite high returning numbers to China and India, only Ireland shows an unambiguous relationship between the return and the growth of human capital in the home country (Arora and Gambardella 2004).

2.2.3.2 Presence of Multinational Companies

The following sub-subsection studies the *role of multinational companies* in the development and growth of domestic industries. An empirical study of Görg and Strobl (2002) finds evidence that the presence of MNCs in Ireland significantly contributed to the entry of indigenous firms. The study focuses on the Irish manufacturing sectors, since the domestic industries, that were focused on traditional and food-sector industries, experienced a shift towards high-tech sectors due to heavy investments of MNCs. Although we are primarily interested in the role of MNCs in the development of domestic service sectors, the study gives us general insights into the potential effects of MNCs on the host economy.

Görg and Strobl (2002) name three main *linkages* that are based on the theoretical model of Markusen and Venables (1999). First, MNCs compete with domestic final goods producers. Thus, the aggregated higher output lowers prices and pushes some domestic firms out of the market (competition effect). Second, MNCs create additional demand for domestically produced intermediates. Assuming imperfectly competitive intermediate supplier industries, average costs decrease and profits

rise, which attracts new intermediates producers. And third, due to the second effect, intermediates' prices decline as well, which can be an incentive for indigenous or multinational final goods producers to enter the market (Görg and Strobl 2002).

The presence of multinational companies played an important role not only for the growth of the manufacturing sector but also for the *software industry* in non-G7 countries. Arora and Gambardella (2004) showed that the 3Is as well as China and Brazil were characterized by a large presence of MNCs in the software sector. "At the risk of some exaggeration, one can say that MNCs came to Israel to do R&D, to India for inexpensive skilled workers, and to Ireland to leverage tax incentives and access the European market (Arora and Gambardella 2004, p. 12)." Often, the case of Ireland, which still benefits from an extraordinarily low corporate tax rate of 12.5%, is cited as evidence that MNCs stimulated the sectoral growth of domestic firms, while in Israel and India, MNCs and the domestic sector started to grow *simultaneously* in the 1990s.

The authors refer to a study of Giarratana et al. (2005) who show that 57% of the MNCs in the ICT-sector were already present in Ireland before 1990, compared to 44% in India and 37% in Israel. Ireland's leading role becomes even more obvious in the software industry. Here, 55% of the MNCs have been built up before 1990 compared to only 18% in India and 16% in Israel. In addition, two-thirds of the patents for MNCs in Ireland have already been assigned before 1994 in comparison to 37% in Israel and 32% in India, suggesting that MNCs have undertaken R&D investments earlier in Ireland. Citing Botelho et al. (2005), the study also shows that MNCs, especially Siemens and Ericsson, are contributing to the development of the local competencies of the Irish software industry (Arora and Gambardella 2004). To sum up, we can see indications of a linkage between the presence of MNCs in the software industry and the development and growth of the domestic service sector.

2.2.3.3 Liberalization of Service Sectors

As part of the broad liberalization process, the developing world emerged from the era of import substitution to embrace policies promoting export growth within a growing network of international supply chains. For example, export processing zones have expanded in scope and number, offering foreign firms long tax holidays on corporate profits and unrestricted profit repatriation.¹⁶ Arora and Gambardella (2004) identify two different development patterns, namely the export-led model and the development-led export model. Among the 3Is, Brazil, and China, only India depended heavily on exports at the beginning of its software industry development. The other countries rather followed the development-led export model,

¹⁶See Milberg (2007) for an overview of the expansion of EPZs in the 2000s.

Box 2.7: Liberalization of the telecommunication services market in India

India's past was influenced by Mahatma Gandhi's call for self-sufficiency, which for instance became visible in a law of 1976 that restricted foreign ownership to 40%. Former prime minister Rajiv Gandhi identified ICTs as a core sector, but only after the establishment of the National Telecom Policy (NTP) 1994, the government monopoly of the telecommunications sector was opened. Despite the opening, progress was slow with only 1.217 mobiles and 29.985 mainlines per 1,000 inhabitants by 1998. With the election of the Bharatiya Janata Party (BJP) in 1997, ICTs again became a center of attention. The NTP 1999 was enacted and led to a decrease of mobile license fees (15% profit sharing). Falling capital and handset costs, increased competition from wire line operators and newcomers, prepaid calling, and calling-party pays contributed to a fast growth of the mobile sector. By 2003, the number of mobiles per 1,000 people has increased to 24.747. The wire line market has grown to 46.284 per 1,000 inhabitants in 2003, but private wire line services are still lacking and rural areas are still insufficiently reached.

A similar picture could be found in the Indian internet sector. Based on the Indian Telegraph Act 1885, the Indian government did not allow private Internet Services Providers (ISPs) to operate, and thus the Ministry of Communication had a monopoly over commercial ISP services. After the 1997 elections, the BJP set up a National Taskforce on IT and Software Development in May 1998 to map out an IT policy. Just two months later, the National Taskforce published a 108-step IT action plan and released a second action plan on the development, manufacture and export of IT hardware in October 1998. A long-term national IT policy was released in April 1999, which resulted in an increase in the number ISP licenses that were issued. As a result, the total number of internet subscribers increased from 25,000 in 1997 to 6.674 M in 2005. Since most of Indian's ICT growth is experienced in urban areas, there is major concern of increased digital divide between rural and urban areas.

Source: UNCTAD (2006)

where the domestic software industry was nurtured by domestic demand first before focusing on exports (Arora and Gambardella 2004).

The cases of export growth described above were enabled by the *transformation from protectionist to open market economies* in the last one to two decades due to constant privatization, competition, and independent regulation. This sub-subsection studies the *liberalization of the telecommunication services market* with a focus on the success stories of India (see Box 2.7) and China (see Box 2.8). The telecommunications sector has been chosen, since it has largely attributed to the rise in the worldwide services offshoring development.

Box 2.8: Liberalization of the telecommunication services market in China

China's success was mainly reached by the combination of three developments, namely the economic opening, the government support of the telecommunications sector, and the introduction of competition. Since the late 1980s, when China began to open its markets, exports, imports, FDI, and GDP per capita increased tremendously. During the 1990s, China's industrial policy started to focus on infrastructure and high technology. The Chinese State Council decided to permit entry to the internet in 1996, and one year later every provincial capital had competing ISPs.

Interestingly, China's government stimulates the *competition* by the strategy of allocating resources to state-owned companies. The establishment of China Unicom as a competitor of China Telecom constitutes such an example, the latter being part of the Ministry of Posts and Telecommunications (MPT). Since the MPT was in charge of both competing and regulating, a new regulatory system was required. Therefore, the MPT and the Ministry of Electronic Industry merged in 1998 to become the Ministry of Information Industry (MII), which is responsible for the development strategy, the regulation of telecommunications, broadcasting, satellites, and the internet, as well as the establishment of a multimedia network that prevents duplication of investments. In 1999, the MII subdivided China Telecom into four independent groups (China Telecom, China Mobile, China Satellite, and Guo Xin Paging Company, for radio paging) in order to facilitate the competition between and the regulation of its state-owned companies.

The Chinese ISP sector was characterized by a *mixed ownership* between state-owned companies and local ISPs, the former controlling the backbone networks, and the latter ensuring the local access. ISPs competed like free market organizations. China's internet exchange points, too, followed the mixed-ownership principle. Routed by the US backbone in earlier years, the government encouraged the establishment of own internet exchange points that are in charge of the domestic traffic. The Chinese government also encourages the adoption of new technologies, such as voice-over internet protocol, as it considers low communication costs beneficial for companies and individuals.

Source: UNCTAD(2006)

In 1997, 69 industrialized and emerging WTO member states signed the agreement to open their telecommunication services markets. By the end of 1998, this number had gone up to 90. The opening of the markets has increased competition and thus the number of facilities-based international carriers and mobile operators, which led to lower ICT prices. By 2001, 43% of the countries allowed competition on local calls, 38% on international calls, 37% on long-distance calls, 78% on mobile calls, and 86% on the internet. The worldwide experience showed that a

combination of privatization, competition, and independent regulation is most likely to be successful (UNCTAD 2006).

Most developing countries that are now attracting large amounts of FDI in the service sector were characterized by protectionist policies before opening up to foreign ownership of companies. The Digital Divide Report of the UNCTAD (2006) identifies six successful countries with regard to the liberalization of the ICT sector, namely India, China, Singapore, Chile, Botswana, and the US. The process towards liberalization in these countries included privatization, competition, and independent regulation, and the governments played an important role in planning, investing, and procuring.

However, there are also *limits to privatization, competition, and independent regulation*, such as ineffective government agencies, the resistance from operators, and corruption. There might also be limits to market freedom due to problems linked to the market structures, vertical integration, or the infrastructure of the country. The success stories of developing countries have shown the necessity of a strong and independent regulator. Specifically, “[t]he regulator must have the resources to audit providers and create and enforce regulations that mitigate any inequity arising from integration and imperfect competition” (UNCTAD 2006, p. 34).

We conclude that constant privatization, competition, and independent regulation during the last two decades have fostered the liberalization process of the telecommunications sector, especially in India and China. While public policy focused on privatization in India, China’s success was predominantly driven by public policy that emphasized competition.

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