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THE TRADABILITY OF CONSULTING SERVICES

and its implications for developing countries

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The following symbols have been used in the tables:

Two dots (..) indicate that data are not available or are not separately reported. Rows in tables have been omitted in those cases where no data are available for any of the elements in the row;

A dash (-) indicates that the item is equal to zero or its value is negligible;

A blank in a table indicates that the item is not applicable;

A slash (/) between dates representing years, e.g. 1994/95, indicates a financial year;

Use of a hyphen (-) between dates representing years, e.g. 1994-1995, signifies the full period involved, including the beginning and end years.

Reference to "dollars" ($) means United States dollars, unless otherwise indicated.

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Preface

International commerce in services has historically been constrained by the fact that buyers and sellers had to be close to one another. While goods could be transported between countries, most services could be delivered to foreign customers only by affiliates in foreign locations, or through the temporary movement of individuals across national borders. This has meant not only that the expansion of international trade in services lagged behind that of trade in goods, but also that transnational corporations had fewer opportunities to exploit differences in locational advantages by geographically dispersing activities along their production chains and relying on intra-firm trade for integrating them into final products.

Thanks to use of new telecommunication and information technologies, all this is changing. These new technologies greatly enhance the tradability - the ability to engage in trade through arm's length delivery over a distance - of services, giving rise to electronic commerce. This is likely to have a significant impact on trade and foreign direct investment in services, and on the role of transnational corporations in the services sector. The implications are important for developing countries interested in taking advantage of the opportunities for increased trade in services in order to build up their indigenous service industries, strengthen their competitiveness and increase their exports.

An improved understanding of the extent to which various services are becoming tradable can assist in assessing the possible impact and implications and in formulating policies and programmes to enable developing countries to benefit from trade and foreign direct investment. This study is a part of UNCTAD's efforts to contribute such an improved understanding. It represents a continuation of previous work in the area of foreign direct investment and transnational corporations in services, both generally and with respect to the increasing importance of transborder data flows in particular.

The present study focuses on the tradability of consulting services. It covers three major areas: accounting, management consultancy and engineering consultancy. It is the result of a research project funded by Danish International Assistance (DANIDA), following an earlier pilot study that focused on banking.

A core component of this study is an examination of the characteristics of each of the principal individual service products in the industries covered, in order to shed light on the factors that limit or strengthen the ability to deliver each product electronically to a foreign customer. It must be noted that this product-specific examination is based on information and analysis provided by individual industry experts and thus represents a starting point for further empirical study rather than a definitive basis for generalization. Such a detailed technical examination seems appropriate at the present juncture. While services are becoming tradable, it is unclear whether tradability is increasing across the board. Not surprisingly, the findings suggest that many service products within each of the three groups are potential candidates for electronic commerce, but a sizeable number are not. At the same time, things are changing rapidly. Developing countries will need to consider whether this phenomenon offers them new opportunities and, if so, how best to seize them.

Rubens Ricupero
Secretary-General of UNCTAD

Geneva, May 2002

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I. THE TRADABILITY OF SERVICES: CONCEPT, SIGNIFICANCE AND RELEVANCE FOR CONSULTANCY SERVICES

A. The concept of tradability of services and its significance

Technological developments, including rapid progress in the diffusion and application of advanced information and communication technologies, have vastly increased capabilities for processing and transmitting data. These developments have enhanced the tradability of services, defined in this volume as the possibility for the cross-border delivery of final services, or of individual components (intermediate products) in the production chain of a service, without the establishment of local service facilities or the movement of either the provider or the customer. Such (arm's length) delivery implies physical cross-border transportation in the case of services embodied in goods, and delivery along telecommunication networks - or electronic commerce - for services that are intangible and embodied in information.

The term "tradability" can be applied to both final and intermediate services. The tradability of intermediate service products is associated with the divisibility of production processes related to the creation of services, and the transportability of components of these service products. The tradability of a service depends on technical and economic factors as well as rules and regulations related to cross-border transactions in the service concerned (table I.1).[1] Technical factors determine the possibilities for the transport of a service product - that is, its transportability. Economic factors relate to the economic viability of the cross-border transport of a service, given the costs of production on the supply side, while regulatory factors determine whether cross-border transport and transactions in services are allowed to take place, and if so, and under what conditions.[2]

Table I.1. Key factors influencing tradability in services

Technical factors	• Informatization of production • International standardization
Economic factors	• Transportation and transaction costs • Economies of scale and scope
Regulatory factors	• Trade agreements • National regulations
Markets and organizational factors	• Internationalization of markets • Internationalization of firms

The tradability of a service indicates a potential for international trade in services. Of course, the fact that a service is tradable does not necessarily mean that international trade will actually occur. Whether it will take place depends on the demand (i.e. the market) and supply conditions related to the service, and the comparative advantages of different countries engaged in its production and sale.

The importance of the tradability of service products stems from the impact that it may have on the international market as well as on national markets - and consequently on the development of service industries in various countries. It may change the relative importance of

direct cross-border exports, foreign direct investment (FDI), and other modes of delivery (namely, temporary movement of service providers or customers) of services; ultimately, tradability may significantly influence the patterns of production and internationalization of service industries. At the same time, tradability may facilitate new modes of cooperation between developing and developed countries by allowing service providers to exploit a new international division of labour that takes advantage of, for example, the low-cost, but educated, workforce that some developing countries offer.

As mentioned, the increasing tradability of services and the growth of trade in services are related to new possibilities created by the development of information and communications technologies. Using telecommunication networks, information service products or sub-components of such products can be transported instantly over long distances. The most visible outcome of this development has so far been the globalization of currency markets based on the establishment of international financial networks and the growing international trade in banking services.[3] Moreover, these and other services (such as the production of computer software) seem particularly well suited to exploit the opportunities for internationalization of activities. Telecommunications networks are thus dramatically altering the international division of labour in the production of services.

The growing internationalization of the world economy has also fostered new economic conditions that facilitate trade as well as FDI in intermediate and final service products. Transnational corporations (TNCs), and the FDI that these corporations undertake, have contributed to the expansion of a market for business services directed towards serving the firms comprising TNC systems. In many larger service companies, international activities have increased owing to a demand from customers with activities in several countries. Thus, for example, one of the primary reasons for banks or large accounting firms to set up affiliates overseas has been the need to serve their domestic customers when these establish production facilities abroad. The growth of intra-firm trade in services between headquarters of transnational service firms and their affiliates in countries where clients became established was a natural extension of this system. Similarly, value-added network providers (such as the General Electric Company's Global Exchange Service - formerly GE Information Services)[4] have set up international telecommunications and computer service networks ("B2B networks") to enable their internationalized clients to communicate with local branches abroad.

Regulatory developments at the national and international levels are also creating conditions facilitating trade as well as other modes of international transactions in services. In particular, the Uruguay Round trade negotiations, culminating, among others, in the adoption of the General Agreement on Trade in Services (GATS), brought international transactions in services under multilateral rules for the first time. In the context of GATS, legally binding commitments were made by a number of governments with respect to market access and national treatment in a wide range of services (annex table 1).

Against this background for developing countries, the phenomenon of services' tradability raises a number of policy issues related to new opportunities and new challenges. First, the economies of many developing countries have suffered from lack of sufficient access to services such as credit, communications, technical support and management support; and the use of telecommunications as a mode of delivery may improve access to such services. In the new environment of flourishing international trade and investment, access to such services will become

crucial for the ability of firms in developing countries to attain the necessary level of competitiveness. Second, given the new modes of delivery via telecommunications networks, the local service industries of countries will face increased competition from foreign providers of services. Such competition may encourage local firms to seek increased efficiency and effectiveness, but if domestic companies are unable to confront this challenge, it may have severe implications for local employment. Third, some countries may be able to use their comparative advantage in labour costs to develop themselves as exporters of some intermediate or final service products. The new conditions for delivery of services may encourage TNCs to establish affiliates in low-wage countries in order to carry out labour-intensive service functions at the cheapest possible costs.

Available statistics only partly reflect the new importance of international trade and, more generally, international transactions in services.[5] Although service industries contribute more than 60 per cent to gross domestic product (GDP) in developed countries, and at least 50 per cent to GDP in most developing countries, they only account for approximately one fifth of registered international trade. This share increased slightly during the 1990s (table I.2), and transport and tourism account for at least half of this figure.

Table I.2. Percentage share of value of world exports: merchandise trade and commercial services, selected years

Item	1970	1980	1993	1995	1998	1999
Merchandise trade	81	82	78	80	80	80
Services	19	17	22	20	20	20

Sources: GATT, 1981 and 1994; WTO, 1996, 1999 and 2000.

International trade theory has traditionally been mainly concerned with trade in physical commodities. The potential tradability of services creates a need to investigate to what extent it applies to different services and how concepts such as comparative advantage - developed in relation to trade in goods - apply to services trade. One useful approach is to focus on the factors affecting the tradability of service products, which are significant in altering the conditions for international transactions by service providers and which may be crucial in moulding competitive conditions in these markets. Some products may demand intensive interaction with customers, while others may require very little; yet others may demand local presence for part of the production, while others again can only be produced locally (e.g. repairs or construction).

A useful point of departure to investigate how the use of telecommunication and computer networks has enhanced the scope for arm's length trade through electronic commerce in final and intermediate services - and how that affects the processes of internationalization of service providers - is the nature of the production and delivery of various service products. These are critically important for determining the extent to which new technical opportunities for trade can be exploited. An important part of the present study, which examines the tradability of consultancy services provided to business or production enterprises, and its implications, is therefore devoted to a technical analysis of the products offered, the key inputs or activities involved, and the extent to which the nature of these products offer possibilities for arm's length trade, i.e. for increased tradability. As noted earlier, however, such tradability is only a necessary

condition for trade to take place. Various other conditions determine whether these potential opportunities for trade are realized. These depend, for instance, on the availability of technical infrastructure and facilities, on the existing structure of the industries and patterns of internationalization, and on the composition of the international markets in which various services are supplied. Therefore, a consideration of these aspects is required before the implications for both developed and developing countries can be assessed.

B. The consulting service industry: overview and the relevance of tradability

1. An overview of the industry

a. History

Consultancy in the current sense of the term emerged with the growth of the modern business corporation in the nineteenth century. Thus one of the first consulting firms in the area of professional business services, Arthur D. Little, Inc., was established in 1886, primarily with the aim of developing new technical solutions to problems experienced by the growing sector of industrial business enterprises in the United States. Accounting was also becoming a specialized activity, as auditing and bookkeeping procedures were standardized for major firms. The expansion of large corporations as part of the rapid industrial growth which took place around the turn of the century called for more specialized management procedures - the "visible hand" explored by Alfred D. Chandler in his classic work (Chandler, 1977). In the early twentieth century, management science pioneers such as Frederick W. Taylor began acting as consultants for major firms, and some of today's major management consultancy firms were established in the early decades of the century. Accounting services have their roots in the bookkeeping traditions established in the United Kingdom during the late nineteenth century, and developed rapidly as an industry in the United States because certified audits became legally mandated in the early twentieth century.

Nevertheless, the really significant growth of consultancy as a profession, including the establishment of a large number of consultancy firms, only took place after the Second World War. The three sub-sectors of the consultancy industry surveyed in the present report - accounting, management and engineering consulting - may thus be regarded as rather young service industries, particularly when compared with services such as transportation, banking and insurance. In the post-Second World War period, business services grew from being mostly peripheral industries to become increasingly critical components in the workings of business and the economy at large. Along with other producer service industries such as telecommunications and banking, and not unlike transportation and commerce somewhat earlier, business services began to acquire a new importance, which placed them at the centre of a structural transformation referred to alternately as the advent of the "service economy" or the rise of the "post-industrial economy" (Noyelle and Dutka, 1988, p. 25). Consultants and consultancy firms have occupied an important position in the provision of these services. Narrowly defined, their role is to provide advice on various issues and carry out specific assignments commissioned by their clients as expert, objective and independent professionals. The role of professional consultants in business and industry has, however, been increasingly broadened to include the provision not only of advice and individual solutions but also of direct services that simply augment the technical skills of client firms.[6]

The consultancy service industry also underwent some significant changes in scope and structure in recent decades. In particular, the industry was internationalized in the 1970s, and a large number of mergers between consultancy firms took place during the 1980s. Lately, the application of advanced information and telecommunication technologies has facilitated extensive information processing and rapid communication between consultants and their clients, thus enabling consultants to produce and sell services over long distances. The result is an increased scope for tradability of consulting services. Tradability of consulting services in the form of either components or the final products of a particular service will have important implications for the structure of consulting industries in developed as well as developing countries.

b. Structure

The structure of the consulting industry has been determined partly by the fact that consulting may take place in all areas of business or production activities and therefore tends to be as diverse as those activities themselves. Moreover, consulting is to a considerable extent based on the skills of people and tacit knowledge and information: it is commonly recognized as a people business (UNCTAD, 1993a, p. 15). The reliance on the specific competencies of people and the existence of close links between consultants and their clients have had important implications for the internationalization of the industry; these characteristics are also very significant for the impact that new information and telecommunications technologies have on the trade of consulting services.

In most industrialized countries, consulting is a small but significant component of the business services industry. The range of services offered to enterprises by the consulting industry is illustrated by the following four core categories of consultants: chartered accountants and auditors; management consultants; engineering consultants; and legal consultants. In addition, firms in such industries as software development, construction contracting and marketing may offer a number of services that overlap with those provided by accountants, management consultants and engineering consultants. The four types of consultancy industries mentioned above can be characterized with respect to their business activities and internationalization in the following way:

- ***Accounting*** is, in most countries, traditionally treated as a distinct business area that is dominated by chartered public accountants. The industry is composed of a limited group of large firms and many small service companies. In addition to providing audit and other regulated accounting services, large accounting firms frequently perform various forms of management consulting assignments or carry out consulting tasks related to the introduction of information systems. Like management consulting, the industry has become highly internationalized and concentrated over the past decade, with the large international accounting firms dominating the business.

- ***Management consulting*** is the most comprehensive category of the four categories, often involving the provision of advice on financial planning, operations planning and control, or management information systems. Management consulting is generally considered to be a specific business, although it may be difficult to define precisely what constitute its main service products. In recent decades, the major firms in this industry have become highly internationalized, with United States firms such as McKinsey & Co. generating

nearly 60 per cent of their income outside the United States in the early 1990s (UNCTAD, 1993a).

- ***Engineering consultants*** provide services that often depend more on local conditions, particularly when compared with management consulting. They also tend to be highly internationalized, and many of the international engineering consultants operate in developing countries. In a large number of these cases, they operate on the basis of contracts for national development aid organizations or international agencies such as the World Bank.

- ***Legal consulting*** is generally carried out by law firms or individual lawyers. Although a few large law firms have established offices abroad, this sub-sector tends to be less internationalized and the services rendered abroad are generally related to export activities of major clients at home. Law firms tend to be nationally oriented because of the national status of most legal provisions.

c. Market size and distribution

It is difficult to assess the precise magnitude of the consultancy service industries, because they are often not defined by positive inclusion of elements, but rather by non-inclusion in other industries. As indicated earlier, there is thus no well-established definition of the various components of business service industries, and whatever definitions are offered differ from one source to another. Furthermore, consulting presents particular problems in terms of estimating the size of the markets and the revenues of various firms. A rough idea of the magnitude of the three areas of consulting on which the present study focuses is given below:

- ***Accounting.*** The accounting industry's total worldwide revenues in 1999 can be estimated at approximately $160 billion, compared with an estimated $65 billion in 1988.[7] The size of regional and national markets for accounting services is also difficult to assess, but in 1984 it was estimated that the United States market accounted for approximately half of the world market revenues, and it is likely that the proportions have remained more or less the same, even if markets in the Asia-Pacific region may have grown somewhat as a result of the economic expansion experienced there.

- ***Management consultancy.*** There are two major difficulties in estimating the size of the market for management consultancy services. First, the definition of management consultancy varies, and the estimates of market size differ accordingly. For example, one source includes in its market-size calculations for management consulting much work on software development or turnkey information technology systems, both of which are expensive long-term undertakings on the borderline between computer services and consulting.[8] Second, many firms in the industry are organized as partnerships or other forms of ownership which have no obligation to disclose the exact amount of revenues and so forth to the public. One particularly difficult question is how to assess the contribution of in-house consulting divisions, or corporate affiliates, for major manufacturing and service business corporations.

  With these reservations, estimates have been made which indicate that worldwide management consulting revenues totalled $28.3 billion in 1992 and $40 billion in 1995.[9] An estimate of the European market proposed a figure amounting to 36 billion ECU ($32.6 billion at the current exchange rate) in 2000.[10] Taking into account that traditionally the United States market constitutes about half of the world market, with the European

market following in second place, the world market for management consultancy can be estimated at around $70 to $80 billion in 2000.

- ***Engineering consultancy.*** The engineering consultancy industry has also been undergoing changes that make it difficult to define its scope accurately, and there are few estimates of the world market for these services. In view of the fact that much of the revenue of engineering consultants is related to construction projects, a useful indicator is the estimate that the value of the world construction market grew to $3.41 trillion in 1999.[11] According to industry estimates, the relative cost of engineering design services as a component of total construction expenditures ranges between 5 and 30 per cent (depending on the industry involved, with infrastructure, construction and shipbuilding, at one end of the scale, requiring up to 5 per cent and, at the other end, oil and gas requiring up to 30 per cent) of construction investment. This would result in an approximate world market for engineering design services worth some $170 billion to $1 trillion. This estimate appears high, however, given that the total revenues of the world's top 200 international design firms were put at $44 billion in 1999.[12]

Large domestic markets for services such as accounting and management consulting do not necessarily imply that international trade of a comparable size will exist. But they do give some indication of the potential for trade, if the technical potential for tradability is realized and legal or other barriers to tradability are reduced.

d. Overlap among consulting services and markets

The products that consultants offer on the market have traditionally been defined through direct interaction between the consultant and the client, and thus composed of individual solutions, often based on tacit agreements about the service delivered. The three industries analysed in this report represent different levels of standardization of typical service products. Accounting and auditing services usually have to fulfil specific requirements set by government regulations, and as such tend to provide a range of standard products. Thus some of the latter do not fit closely with the definition of consultancy products and are usually not described as such; in the present study, however, the focus is on all major services provided by accounting firms, and such service products are included in the analysis along with others that are more clearly consulting in nature. Engineering design services are also governed, to a large extent, by technical standards for industrial production or construction projects, but the scope for individualized solutions is generally greater than in the case of accounting services. Management consultants generally offer the least standardized and most flexible service products, but even in this industry there has been a tendency to base the production of new services on standard procedures.

Table I.3 shows some of the key product categories of consulting services and the industries providing the services. As the table illustrates, there is a substantial overlap between the different parts of the consulting industry, in particular between accounting and management firms. The services listed in the table have been included for the purpose of general orientation, and focus on products in the core business of accounting, management or engineering. Detailed descriptions and analysis of product categories are presented in the chapters dealing with each segment of the industry, and in the technical annexes (annexes 1 to 3). The different areas of competition and overlap with other service industries which are indicated in the table have, in recent years, become more important for the profile of the consulting firms and their positioning

vis-à-vis competitors. This is partly the consequence of a change in the general level of standardization of services.

Table I.3. Core service products of consulting firms and firms in adjacent business areas

Product	In-house consultants/ employees	Accounting firms	Management consulting firms	Engineering consulting firms	Law firms	Computer and software firms	Cons-truction firms	Marketing firms
Book-keeping	x	x						
Auditing		x						
Tax advice	x	x	x		x			
Financial counseling	x	x	x		x			
General management	x	x	x					
System design	x	x	x	x		x		
Software and system support	x	x	x	x		x		
Marketing	x		x					x
Human resources	x	x	x					
Production management	x		x					
Legal advice	x	x	x		x			
Project management	x		x	x		x	x	
R&D services	x		x	x		x		
Implemen-tation	x			x			x	

Source: Information obtained from industry experts.

The service products provided by consultants usually require a high level of professional expertise. These products often tend to call for a customization of services or solutions provided to individual clients. Professional work of this kind can, however, be classified into three types (Scholes, 1994):

- ***Routine services***. These are essentially services that are like commodities. They apply known solutions to routine problems. Standardization is achieved through systems and procedures and the maximum possible deskilling and use of machines and non-professional staff. Routine services have become quite widespread in, for instance, insurance companies.

- ***Standard services.*** The nature of these services is known in general to the clients and the latter are aware of each provider's reputation and positioning in the market. There is some degree of flexibility with the product to meet new customers' requirements. Standardization is achieved largely through the service concept/design (which includes features allowing for the tailoring or flexibility of products in the actual situation of delivery). Many audit-related services are of this type.

- ***Customized services***. These services are created specifically to suit the needs of a particular client or situation. Standardization is achieved through professional skill and judgment thus ensuring that the customized service properly meets professional requirements and standards. Management consultancy services are primarily of this type.

In recent years, professional business services have increasingly witnessed a modularization and conceptualization of service products, i.e. moving from customized services to standard or routine services, as competition has generated new challenges. Since the 1990s, consulting service firms have been expected simultaneously to improve service quality, reduce the real price to clients and maintain an organization in which professionals find satisfaction and challenge in their work. The business environment in which consultants operate has generally been characterized by the following trends:

- More extensive use of ***new information technologies*** in professional work has created opportunities for larger organizations to gain advantage over smaller ones. Some of the work previously done on a personal and customized basis has been standardized, or the firms have developed superior services by exploiting information technology.

- ***Expansion and convergence*** among different consulting services have created a more competitive situation and firms have been put under pressure to find a new basis for cost competitiveness or other forms of competitive advantages, for example through an increase in the size of operations and more intensive use of information technologies.

- There has been increasing ***client awareness*** of the need to obtain "value for money" and a willingness to exercise this knowledge - either through shopping around or via direct pressure on firms to improve performance. This movement has been encouraged by Governments, and is likely to continue well into the future.

Altogether, these changes in industry structure, diversification and specialization of service products, and the reliance on new information technology, constitute influential elements in trends towards the globalization of service provision supported by the tradability of products. The impacts of such trends may be crucial for the balance between trade and FDI, and subsequently the whole structure of the consulting industries at both the national and the international levels. Before proceeding to discuss the developments taking place in each of the three industries studied in this volume, it is useful to discuss the role of the various modes of international delivery for consultancy services in more detail, and to give a brief description of current international transactions in the industry and the relevance of tradability in that context.

2. Internationalization and the relevance of tradability

a. Modes of internationalization

The three areas of consulting services - management consulting, engineering consulting and accounting - on which the present study concentrates are fairly internationalized already. (The fourth area mentioned above, legal services, has experienced much less by way of international transactions as yet.) However, the pattern of internationalization, including different modes of delivery for various services, is different in the three industries. Internationalization in management consulting and accounting has often taken place through FDI, including partnerships, and mergers or acquisitions have played an important role in the process. In engineering consulting, in contrast, internationalization often involves temporary movement of people, as consultants travel to new project sites to gather information and design new solutions to technical and operational problems. But these consultants usually, in varying degrees, rely on back-up functions provided from the home country. A consultant currently working abroad at the premises of a customer may consult the head office for certain specialized technical information, and this may be provided on a person-to-person basis by telephone, via fax machines or electronically through direct access to databank. Consequently, these areas of consulting offer an opportunity to analyse different types of services internationalization and the impact of increased tradability on the consulting services industry.

Table I.4 illustrates the four different modes of international delivery of services with examples from the consultancy industry, and indicates the relative importance of each mode in traditional patterns of internationalization in the industry. It should be noted that in the consultancy industry, delivery from affiliates is often combined with intra-firm cross-border delivery of intermediate services or the temporary movement of a limited number of consultants. Overseas delivery of consulting services is thus a function of both tradability of products and the existing, dominant mode of internationalization within the industry. In many service industries, and for accounting and management consultancy in particular, partnership is a common form of ownership. Owing to this structure, internationalization has in many cases been realized through mergers and the establishment of new partnerships, instead of outright acquisitions or the setting up of new affiliates. But partnership structures often imply a flat structure of organization in international consultancy firms, with limited functional division of labour among affiliates.

The impact of information and telecommunication technologies on the nature of trade in services in the three consulting areas also seems to differ. In engineering consulting, for example, there appear to be extensive possibilities for transferring data originating from computer-aided-design (CAD) software on more advanced telecommunication networks. This improves the possibilities for consultants working in the field to communicate rapidly and efficiently with home offices: The application of new technologies will also facilitate actual trade in engineering consulting services, as it becomes increasingly possible for consultants to deliver designs and so forth via the telecommunication networks. In management consulting, the information provided is not standardized to the same extent, and new technologies are mostly used to facilitate in-house sharing of data between consultants in the same firm. Accounting firms have been accustomed to utilizing information and telecommunications technology for processing of financial data for a considerable period, but new technologies offer possibilities for interactive work with the client's management information systems over long distances.

Table I.4. Modes of international delivery in consulting services

Mode of service delivery	Examples	Significance for internationalization of consulting services
Cross-border trade	Access to on-line database services Transfer of CAD files	Cross-border trade most common in intra-firm trade with intermediate products
Movement of customers	Workshops for clients, e.g. training on the premises of consulting firm in the home country	Of minor importance
Temporary movement of producers	Consultants working on location, e.g. for monitoring of construction projects	Predominant in engineering and management consultancy; less important in accounting
Delivery through the establishment of affiliates abroad	Local affiliates acting as consultants, occasionally with direct support from parent firm	The most important mode of delivery in accounting; importance growing because of mergers

b. Trends in international transactions in consulting services

For services industries as a whole, the growth of international transactions has been related to the growth of both cross-border sales and sales from foreign affiliates. In fact, judging from United States international sales of private services during the period 1986-1998, which involved growth at an average annual rate of 10 per cent of exports and 15 per cent of sales by foreign affiliates, the two types of transactions have grown apace (Mann and Brokenbaugh, 2000). The share of total sales to foreigners that was accounted for by non-bank majority-owned foreign affiliates of United States companies changed little during the late 1980s and early 1990s (remaining between 44 and 46 per cent), but, beginning in 1995, grew steadily to 55 per cent in 1998.

Consulting firms, like firms in many other services, are currently becoming more international in their activities, and for the three industries analysed in this report, the turnover for the largest firms can be expected to include a considerable share of revenue obtained from overseas delivery of services. However, the levels of international transactions in consulting have traditionally been significantly lower than in many other service industries. One explanation for this may be that some consulting industries - and prominently the accounting industry - are to a large extent characterized by markets in which competition in each country is essentially independent of competition in other countries. Another important reason is that partnerships have continued to be the predominant mode of organization among consulting firms that establish facilities abroad to service foreign markets. While this particular form of organization has in many ways been effective in promoting the establishment of local offices worldwide, it remains an important barrier to increased division of labour in the industry. Local partners will often be reluctant to delegate jobs to other partners, but will try to optimize their own local business. A lopsided balance of receipts and expenditures, which would be the result of a more specialized division of labour and which implies a net export of work (and income) from one country to another on a larger scale, has often not been acceptable to local partners.

C. Purpose and scope of the study

Given the expanded scope for trade in consulting services that would ensue from an increased tradability of products of this industry, and with the new framework for liberalization of international transactions in services offered by the adoption of the General Agreement on Trade in Services (GATS) (box I.1), it is of considerable interest to understand the changes occurring with respect to the tradability of consulting services, their impacts on FDI and trade, and the implications, especially for developing economies. This study attempts to contribute to such understanding by examining, after a brief overview of the industry, the products of each of the three consulting industries - accounting, management consulting and engineering consulting - with respect to their tradability, and situates this analysis in the context of traditional and emerging patterns of internationalization of service firms. The main focus of the analysis of tradability is on the technical factors, i.e. product-specific characteristics determining whether or not a particular product (or sub-product) is transportable along telecommunication networks. The analysis provides a background for the discussion that follows of the likely impacts of tradability on the modes of overseas delivery of consultancy services, particularly cross-border trade and FDI, and their implications for the structure and development of the industry in both developed and developing countries. Finally, the study considers policy implications and technical assistance options for developing countries, in the light of the growing tradability of consulting services.

Box I.1. GATS: commitments and negotiations in areas related to consulting services

In the context of GATS negotiations of specific commitments related to market access and national treatment of international transactions in services, business services which includes the three groups of services covered by this study were among those in which most commitments were made. The following are examples of the number of commitments by countries scheduled in professional services related to consulting services: accountancy, auditing and bookkeeping services – 56 countries (counting the European Community 12 as one); management consulting – 51 countries; taxation services – 34 countries; architectural services – 50 countries; engineering services – 58 countries; legal services – 45 countries. Within the professional services sub-sector, the accountancy category ranks second to engineering services (with 58 commitments) and ahead of architectural services (50 commitments) (see annex table 1 for more information).

A new round of market access negotiations under Article XIX of GATS was launched in January 2000 and in this context a number of proposals have been put forth by both developed and developing countries in the professional/business services sector and in specific sub-sectors such as accounting, legal services and consulting services (e.g. by Australia, Chile, Colombia, the European Community, Japan, New Zealand, Norway, Switzerland and the United States). There are also more horizontal proposals on strategies to achieve meaningful liberalization in the area of movement of professionals in mode 4 (e.g. by Canada, the European Community, India and the United States).

Concerns have been expressed in these proposals in relation to the definition of consulting services and in relation to classification issues that may limit the possibility of making meaningful commitments in the sector. The proposals recognize the economic importance of professional services (e.g. for the building up of infrastructure (e.g. architectural and engineering services) and

/…

(Box I.1, concluded)

for the creation of investment and business-friendly institutional frameworks (e.g. legal and accounting services)) and the need to regulate these sectors in the interest of ensuring high quality of services. Both open up possibilities for creating a wide range of barriers to international transactions in these services. Among the restrictions identified in these proposals are general impediments such as restrictions on the mobility of personnel, impediments to technology and information transfer, as well as government procurement practices, and specific impediments such as, among others, requirements relating to local equity, nationality, professional certification and entry and onerous licensing.

In addition to market access and national treatment issues, the lack of mutual recognition agreements and disciplines on domestic regulation could act as obstacles to international transactions in services. The first step in the implementation of the Article VI.4 (Domestic Regulation) mandate of the GATS was the Ministerial Decision on Professional Services and the establishment of the Working Party on Professional Services (WPPS). The Decision gave priority to professional services, in particular accountancy services. In May 1997, the Guidelines for Mutual Recognition Agreements or Arrangements in the Accountancy Sector were adopted, followed by the Disciplines on Domestic Regulation in the Accountancy Sector in December 1998.

The disciplines provide that "Members shall ensure that measures not subject to scheduling under Articles XVI and XVII of the GATS, relating to licensing requirements and procedures, technical standards and qualification requirements and procedures are not prepared, adopted or applied with a view to or with the effect of creating unnecessary barriers to trade in accountancy services. […] Members shall ensure that such measures are not more trade-restrictive than necessary to fulfil a legitimate objective. Legitimate objectives are e.g. the protection of consumers, the quality of the service, professional competence and the integrity of the profession." The disciplines are applicable only for members who have made commitments on accountancy services. However, one of the issues for consideration is whether the Guidelines and Disciplines on accountancy could be generalized and made applicable to other professional services as well.

Source: UNCTAD.

Notes

1. The establishment of the GATS (General Agreement on Trade in Services) illustrates the fact that international transactions in services have become an issue on the international policy agenda. Before the Uruguay Round of trade negotiations concluded in December 1993, services were generally excluded from multilateral negotiations, which focused on trade in goods. The increased attention now paid to international service transactions by policy makers at both national and international levels is founded in technical and economic, as well as regulatory, developments.
2. For further elaboration of the concept of tradability and factors underlying it, see UNCTAD (1994a, chapter I).
3. For a study of the impact of tradability in the banking industry, see UNCTAD (1994a).
4. GE's Global Exchange Services has a presence in 58 countries; see www.geos.com/ gxs.
5. International transactions related to services are difficult to observe in international trade statistics. One reason is that data for trade in services have been collected only for the major developed economies in recent years. Moreover, the quality of available data for trade in services is difficult to assess. In particular, intra-firm trade, which is an important component of the business conducted by, for example, consultancy firms, appears to be extremely difficult to measure and eludes statistical analysis.
6. See, for instance, UNCTAD (1993a, p. 1).
7. The 1999 estimate is from the United States Census Bureau (see www.census. gov). The 1988 estimate is from UNCTC (1990).
8. The primary source for this information and the data provided below is the journal *Consultants News*. For a discussion of estimates of markets for management consulting services and the uncertainties associated with such estimates, see UNCTAD (1993, pp. 13-14).
9. For the estimate for 1992, see *Consultants News*, July/August 1994, p. 1. For 1995, see highlights of "The CN 40 Special Report", *Consultants News* homepage at http://www.kennedypub.com/ cn40.html.
10. See www.feaco.org.
11. Estimate by *Engineering News Record*; see www.enr.com.
12. Ibid.

II. ACCOUNTING SERVICES

The focus of this chapter is on the tradability of the services supplied by the accountancy industry or profession, the main products of which are auditing and consultancy services in various areas, especially those related to taxation and management. It is difficult to understand the issues related to the tradability of these services without reference to the particular characteristics of the industry. Accounting is a profession which can trace its roots far back into history, and which occupies a unique position in modern economic systems. Since accountants perform a public function that can affect financial stability and the efficient allocation of resources, Governments have found it necessary to regulate the profession and its practice in order to protect public interest. As will become clear in the subsequent analysis, the potential for trade in accounting services is significantly conditioned by national legal and regulatory frameworks as well as by technical requirements for the delivery of accounting services. This chapter will discuss both these sets of factors but will emphasize the technical requirements, mainly related to information and interpersonal communication, for trade in accounting services.

A. Overview of the industry

1. Characteristics of the accountancy profession

What is special about the accountancy profession compared with other suppliers of consultancy services is that its practice is normally subject to very detailed and demanding legal regulation. This is because of the role that the profession plays in carrying out public functions such as the legally mandated (i.e. statutory) audit of financial statements (a reserved function) and other regulated services.[1]

It is customary for the regulation of the accounting profession to be subject to overall State control, including, for instance, registration of professionals and promulgation of special laws governing accounting and auditing at the national level. Certain regulatory activities are frequently delegated to one or several professional associations that issue detailed technical standards on accounting and auditing, and which publish guidelines concerning ethical behaviour. These professional associations often award professional designations such as Certified Public Accountant (CPA) and Chartered Accountant (CA), which are usually prerequisities for a Sstate licence or permission to practise. These requirements vary from country to county and affect the ability to engage in cross-border trade in accountancy services.

As some of the large accounting firms tend to supply both audit and consultancy services, regulations governing professional practice have consequences for the consultancy side of the business as well (NERA, 1992, p. 22). Most rules and regulations apply to accounting and auditing rather than consultancy. But ethical and legal rules may affect the consultancy side of the business, for example by prohibiting professional accountants from carrying out certain types of work, or by insisting that audit and other activities be strictly separated.

The link between auditing and other consulting services provided by accounting firms is important. The accounting profession has often utilized its existing connection with companies, through the offering of “traditional” services such as auditing, to gain competitive advantage in consultancy for the same company. They began by offering services such as information systems design which were related to the accounting function, but during the last couple of decades some of these accounting firms have become more and more engaged in efforts to become general consultants. The relative share of income from traditional services has dropped, and for some

firms auditing has been seen as a source of losses that have to be sustained merely in order to gain access to companies. This may pose a problem for the profession inasmuch as a seeming divergence between the public's idea of what auditors should do, and what auditors appear to be doing in practice, has led to calls for even more regulation. Some of these calls for regulation have involved restricting or even abolishing the professional accountant's right to offer both auditing and some selected consultancy services to the same client.[2]

At the same time, a small number of firms belonging to the accounting profession have become some of the most, if not the most, internationalized consultancy enterprises. Several large international firms that span the globe have, in combination, obtained a virtual monopoly on the audit of large transnational corporations. These firms have gradually expanded at the expense of medium-sized firms, including both those that have been organized in international networks and those that are primarily local. It seems reasonable to expect a further polarization of the market, with the large transnational accounting firms at one end of the range, a few international firms in the middle, and many small firms remaining to service personal and small business clients at the other end of the range.

2. Markets and industry structure

The world market for accounting services can be estimated at approximately $160 billion in 1999, given that traditionally the United States market represents approximately half of the world market and that total revenues for United States accounting, tax preparation, bookkeeping and payroll services were estimated to be around $76.3 billion in 1999.[3] The international accounting industry is dominated by the “Big Five” international accounting firms: Arthur Andersen, PricewaterhouseCoopers, Ernst&Young, DeloitteTouche Tohmatsu and KPMG.[4] The reason for the pre-eminent position of the large accounting firms is that any sizeable enterprise that wants access to credit or equity knows that this will be vastly facilitated by having an audit signed by one of the “Big Five”.

Calculation of market size for specific accounting product groups is complicated by the fact that the professional accountants have always offered their clients advice as well as preparing and auditing financial accounts. A partner in an accounting firm and his or her assistants will offer a range of services to the individual client and at any particular meeting between the client and partner there may be no particular distinction made between discussion of points relating to the annual accounts and general business advice. Therefore, it is difficult to assess the exact scale and scope of the individual service products that accountancy firms offer to their clients. Indeed, the accounting consultancies have exploited this overlap between different forms of advice, and have leveraged on intimate knowledge of clients’ activities and strengths and weaknesses obtained as a result of their auditing and accounting work to move increasingly into the provision of consulting services in related areas of business expertise.

The consulting and auditing services performed by the large accounting firms are typically carried out by separate departments. An extreme example is that of Arthur Andersen, in which this process of division among functional departments for accounting and consulting respectively was carried further than in most other accounting firms. The result was that the company has now split into two different firms - Arthur Andersen and Accenture - with the former providing its own management services as a direct competitor with what was formerly its sister company, Andersen Consulting (renamed Accenture after an arbitrator awarded Arthur Andersen the custody of the Andersen Consulting name).[5] Likewise, PricewaterhouseCoopers,

Ernst&Young and KPMG separated all or part of their consulting services, either by selling them or floating them as separate companies.

Traditionally, core (accounting and attestation) activities have accounted for 50 to 60 per cent of fees.[6] The situation may be changing, however, because the core activities of accounting services are generating less income for the major firms owing to intense competition. The growth of competition has been influenced by the regional patterns of specialization of the different accounting firms - for instance, the differences which remain in the main activities of branches of accounting firms in the United States, where the emphasis of business concentration may differ from one State to the next.[7]

The majority of large accounting firms have tried to shift towards the more profitable components of their product range. KPMG, however, has started a development in the opposite direction by forming multidisciplinary, industry-service groups. It has reorganized its services into five industry-related practices - financial services; manufacturing, retailing and distribution; health care; information, communications and entertainment; and public services.[8] KPMG states: "our services are increasingly delivered to clients on an integrated, multi-disciplinary basis which blurs the lines between our core services of audit, tax and management consulting".[9] The same type of change appears to be occurring in Ernst&Young, where auditors and consultants dealing with a particular group of clients are placed in the same work group.

These developments have some implications for a discussion of the tradability of particular accounting services, particularly since products tend be delivered in packages. However, this chapter (like others in this volume) focuses on the technical analysis of tradability at the detailed service-product level as its point of departure, in order to identify the technical limitations or barriers to tradability that must be examined before further considerations related to the different modes of delivery of these services, and consequently the different modes of their internationalization, can be taken into account.

B. Factors influencing tradability

The factors that influence the tradability of accounting services are related to technical, economic and regulatory elements, as mentioned previously. One of the technical factors that is most pertinent to a discussion of the tradability of accountancy services is the pervasive use of computer and software systems in processing of financial accounts in modern corporations; the fact that so many records are now already recorded and processed in electronic form creates unique opportunities for carrying out further value-added services related to these records at a distance. However, the need for personal communication and knowledge about local conditions - and, in extreme cases, the ultimate necessity to have access to physical assets and accounts for validation and attestation - imposes a substantial limitation on the practice of accountancy and auditing services at great geographical distance. Another important factor influencing trade in accounting and auditing services - no doubt still the most significant impediment - is the demand for official registration, certification and other legal requirements for the profession. So far, economic factors have had a much less significant role to play in determining the potential to trade accounting services than technical and regulatory factors, but issues such as economies of scale are gradually having an impact on the traditional range of services offered by accounting firms, particularly as the fees for such services have been reduced in recent years owing to intense competition in major markets, and this may influence the feasibility of trade as well.

It is possible to conceive of three major categories of barriers that it is useful to consider in connection with the potential for trade of accounting products: information-related barriers, barriers associated with communication, and barriers connected with the pervasive character of legal requirements. Each of these categories is related to a number of specific needs and problems that determine the extent to which accounting services may be delivered abroad without the physical presence of the service provider. They are specified in overall terms in table II.1, and discussed in more detail in the sub-sections that follow.

1. Information-related barriers

The need for knowledge of local economic and market conditions is particularly important for different types of advisory services to businesses in a particular location. For services to companies with an international orientation, knowledge regarding economic and market conditions worldwide will often prove to be more important than information on local conditions. This opens up market opportunities for international accounting specialists, especially those with experience within specific industry sectors such as oil, automotive and other globalized industries. Nevertheless, for the vast majority of accounting services sold around the world, extensive familiarity with local market conditions, and an intimate knowledge of local accounting procedures and relevant laws and regulations, are essential.

Table II.1. Three categories of barriers to trade in accounting services

Information-related barriers	• Need for knowledge of local economic and market conditions • Need for knowledge of local accounting laws and regulations • Need for knowledge of local taxation rules
Interpersonal communication-related barriers	• Need for personal communication • Need for mutual trust between accountant and client, and for control and verification on-site
Legal barriers	• Lack of mutual recognition of qualified accountants

Requirements for knowledge of local accounting laws and regulations are, needless to say, of key importance for most bookkeeping and attestation services. Some convergence has been taking place between various national accounting standards and regulations - for example, within the framework of the European Union - but differences in regulations among various countries is still a major barrier. The harmonization efforts of the European Union were set in motion in particular by the Fourth and Seventh European Commission Directives, concerning the preparation and publication of financial statements (Alexander and Archer, 2001, pp. 13-22). So far, however, success in harmonization of rules for the profession has been modest at best. Efforts to bring about standardization at the level of governmental regulation at the level of each member State will probably only move forward slowly, being held up by different national interests.

International organizations such as UNCTAD have also played an active role in efforts to promote harmonization of accounting and reporting standards. The harmonization of accounting practices not only serves to help understanding and transparency of accounting and reporting of

major actors such as TNCs, but also will assist Governments and other standard-setting bodies in various countries - and particularly in developing countries - in their efforts to improve business environments and facilitate investment.[10] International harmonization initiatives in the private sector also include the efforts of the International Accounting Standards Board and the International Federation of Accountants, which have been issuing international accounting and auditing standards respectively. It is often easier for developing countries to adopt international guidelines and standards rather than set their own standards, since adoption eases resource constraints on standard-setting and improves financial transparency and comparability, as well as investor confidence.

Some movement towards and support for harmonization is promoted by the need to create uniform accounting and reporting systems among the various national affiliates of TNCs. Combined with the effect of the introduction of common management information systems, which tends to lead to uniform formats and procedures in the accounting divisions of firms or affiliates in various countries, the outcome of this process is frequently that the same accounting procedures are introduced worldwide in TNCs - notwithstanding the national differences which may pertain to their local environments.

It should also be noted that the differences between national standards of accounting and auditing are more pronounced among developed countries, which have long histories of experience with such systems and which also established different legal frameworks for the accounting and auditing profession early in the twentieth century. For quite a few developing countries, the situation may be somewhat different, particularly since many are former colonies that have adopted accounting standards from colonial powers such as the United Kingdom and France. This implies that differences in laws and regulations remain an important barrier for trade between industrialized countries, while such barriers may be less significant for trade between developed and some developing countries or between developing countries using international accounting standards.

To a large extent, the need for knowledge of local taxation rules remains extremely important for sales of tax consultancy services. Since this area of activity is strongly dependent on the particular policies and government administration procedures for each country and, moreover, witnesses constant changes due to the introduction of new forms of taxation or changes in the existing tax framework, the national systems of taxation will increasingly tend to diverge with the passage of time. This implies that, in spite of efforts to harmonize taxation rules and simplify procedures for declaration and assessment of tax, consultancy related to taxation is probably one of the areas where important national differences will persist in the foreseeable future even within such entities as the European Union.

The utilization of international databases may reduce the importance of all the three barriers to trade related to information that have been mentioned. In combination with expert systems using artificial intelligence, it will probably become possible to design new systems that take changes and differences of regulation into account, and thereby facilitate the provision of advice on taxation rules in a particular country from any location.

2. Interpersonal communication-related barriers

Personal communication is an essential part of most accounting services. Much of this communication can take place by telephone, but much communication still needs to take place on site. This is the case, for instance, regarding observation of accounting and control systems, specification of user needs and many types of advice. More advanced means of telecommunication such as videophones and videoconferences may change this situation in the future, but, so far, direct personal contact can be replaced only partly by the use of electronic communication.

Trade in consulting services remains overwhelmingly dependent on trust. This is often so because it is difficult for the client to assess beforehand the quality of the service delivered, and sometimes even after it has been received. Given the difficulties of ensuring that the product has met expectations, many clients will simply have to rely on the reputation of the accounting firm or on previous experience. Much of the marketing clout of the large international accounting firms has derived from the fact that their brand-name reputation can supersede the role of trust gained through personal relationship, contacts and references.[11]

For attestation services, trust is a particularly important limitation: the value of an attestation service depends not only on the client's trust of the auditor, but also on the trust that other parties place in the auditor. In addition, the accounting firm assumes responsibility for the correctness of the information audited. Therefore, it cannot rely solely on information delivered by the client. Even if all information could be delivered by a client via the telecommunications network, the auditors must verify it - for example, information related to inventory or plant assets - on its own through independent observation and inspection.

These factors suggest that, even when international trade in accounting products is technically possible, there will be legal and cultural factors hindering trade from materializing in an arm's length mode. Thus, substantial advantages may be associated with having some kind of local representation that is able to maintain customer relations and other “front office” activities. In this case, trade in the industry will tend to concentrate on intermediate products and intra-firm transactions such as the development of computer software, access to international databases and utilization of expert systems. This type of trade will, however, seldom be recorded in international trade statistics, and often remain “invisible” even to the official representatives of the profession in various countries. Moreover, accounting is a “people business” like most other consulting services, and although intermediate products based on computer and telecommunications technologies are playing a rapidly increasing role, investments in such new technologies still constitute only a small fraction of the total costs of delivering accountancy services.

Another type of intermediate product that has gained in importance is the development of standard working routines and procedures, and the training of personnel. Such products are not directly related to use of computers or telecommunication lines. Nevertheless, they are closely related to the international standardization of services delivered by the same international accounting firm in different countries, and may be the first step towards an international division of labour between affiliates of the accounting firm.

3. Legal barriers

As mentioned earlier, the most important restriction on trade in accounting is that auditing, in contrast to services such as management consulting and engineering consulting services, constitutes a legally regulated activity that only a particular group of registered individuals are allowed to carry out. In other words, there are severe restrictions concerning eligibility to provide the service. Such restrictions relate, however, primarily to the person who ultimately endorses the audit as showing a true and fair view of the accounts. The assistants who work for this person do not necessarily have to have this qualification, but often there are additional professional rules and regulations governing their role.

Becoming a registered auditor (to use the expression prevalent within the European Union) normally requires several years of specialist education, training and success in a difficult set of examinations. In most countries auditing is regarded as a matter of public interest. Registration is carried out either by a professional association, and approved by the State, or by the State itself. Despite the fact that accountants have practised internationally for many years, both as individuals and as firms, national regulatory authorities have been very reluctant to accept the qualifications of foreign accountants, and usually they are not allowed to carry out auditing work unless they have passed national examinations. Rigorous conditions have been set for recognition as a certified accountant or a chartered accountant, including requirements related to citizenship, examinations and residence.

Within Europe, the Eighth Directive of the European Union is specifically concerned with the authorization of professionals charged with carrying out the statutory audit of accounts.[12] It establishes minimum standards for education, professional examinations and practical experience for auditors in the member States of the European Union. The Single European Act of 1986 firmly established the philosophy of mutual recognition, and in December 1988 the Directive on the Mutual Recognition of Professional Qualifications was adopted. Effective from January 1991, it allowed holders of higher education diplomas or professional qualifications to work anywhere in the European Union, subject to appropriate safeguards, additional training periods or aptitude tests, thus creating the possibility of a single European market. In practice, very few auditors have taken this opportunity, however.[13] Globally, there are even greater problems, with very few mutual recognition agreements. For example, there has been some mutual recognition of qualifications between the professional organizations of various countries, e.g. between the United States and Canada as a result of the North American Free Trade Agreement (NAFTA), but this has been very limited (Ramcharran, 1999).

The Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR) at UNCTAD adopted a guideline on national requirements for the qualification of professional accountants in February 1999. The guideline was developed for the benefit of the international community as a whole in order to promote the global harmonization of professional qualification requirements. Such harmonization could close the gaps in national education systems, cut the cost of mutual recognition agreements and increase international trade in accountancy services (UNCTAD, 1999).

The demand for the international recognition of foreign accountancy qualifications has been given impetus by the GATS. As noted in chapter I (box I.1), in 1997, the WTO Council adopted guidelines for the negotiation of mutual recognition agreements (MRAs) to ensure that the process for comparing professional qualifications and of applying them in a fair and consistent manner to all applicants is carried out in a non-discriminatory manner.

Another legal factor is the ability of firms from one country to practise the reserved function (usually auditing and attestation services) in another country. The Mutual Recognition Directive of the European Union, for example, applies only to persons and not to firms, and the same seems to be true of the GATS. In general, there is no mutual recognition of firms between different countries. Further liberalization that would enable the mutual recognition of firms and make possible ownership, management and control of local accountancy firms by professionals and firms from other member States has been one of the ambitions of professional associations such as the Fédération des Experts Comptables Européens. The principle is to support, for example, the possibility for a firm from one European Union country to purchase an accounting firm in another European Union country. However, given the many problems to be solved, the prospects for establishing such a situation appear to be rather dim.

C. Accounting service products and their tradability

This section discusses the tradability of accounting services from a technical point of view, although some economic and legal aspects are also considered. It gives a broad overview of each of the main categories of services provided by accounting firms, the activities involved in the provision of each service product and the role of information technologies and other requirements in the process of production, and goes on to assess the tradability of each of the service products considered.

As previously mentioned, accountancy is a service industry which has been subject to rather tight regulation in virtually all countries. Therefore, detailed descriptions of its products have been prepared in many different contexts, and in contrast to most other consulting services, where the term "product" is less easily applied, a number of more or less official lists of accountancy services exist. However, although accounting principles in different countries are converging and common international standards are emerging, there are still substantial national variations in the range of products offered by accountants or accounting firms, and the specific content of each product also varies from country to country. Thus, it is not possible to prepare a list covering all services provided by all accounting firms in all countries; but the list provided below is comprehensive in the sense that the overwhelming majority of accounting activities are covered. The list is prepared on basis of European and American sources.[14]

The full range of products included in the present analysis is listed in annex 1, together with a brief description of the characteristics of each that are relevant in considering its tradability. The main groupings and products are also set out in table II.2. The importance of the various product groupings varies from country to country and among companies. Some countries have long traditions for advisory services supplied by accounting firms, while this is a comparatively new phenomenon in other countries.

The following aspects are covered by the product-wise analysis of the technical scope for tradability in sections 1 to5 below:

- Need for local presence
- Use of information technology
- Need for communication
- Required level of skills
- Demand for knowledge about local conditions

In addition to this, legal restrictions are included in parts of the analysis. The analysis is largely based on the description of the particular services outlined in the technical annex.

Table II.2. Main groups of accounting products

Accounting and bookkeeping services	• Bookkeeping • Preparation of financial statements • Analysis of accounts and financial statements • Setting up maintenance and procedures for accounting systems • Advice
Attestation services	• Statutory audit • Non-statutory audit • Other types of attestation services
Tax consultancy	• Preparation of taxation accounts • Taxation representation
Management advisory services	• Information technology consultancy • Budgeting • Organizational reviews • Human resource reviews • Inventory control
Other services	• Specific special services • Continuing service of special nature • Staff and other support services • Legal advice • Product services

Source: Based on annex 1 and other information obtained from industry experts.

1. Accounting and bookkeeping services

Accounting is a generic name for a number of different tasks related to the preparation of ledgers and financial statements (table II.3). These services are mostly required by small firms with limited capacities of their own for these tasks. Thus, the involvement of the large firms in this type of services is rather limited. However, for a large number of small accounting firms bookkeeping and accounting services are their most important activity.

Many small firms with limited accounting capacity rely on accountancy firms in the preparation of their financial statements. Clients without expertise in accounting may even outsource the preparation of internal journals and ledgers to an accounting firm. Some smaller firms may also choose to prepare their own financial statements, but subsequently hire a qualified accountant to control, analyse and correct their accounts. Even large corporations demand certain accounting services from external providers. For instance, an accountant may be consulted in matters related to specific accounting problems: how to depreciate a recent investment, how to record a certain financial obligation, etc. Although larger corporations possess more in-house

accounting capacity, they also operate more advanced and sophisticated accounting systems. Therefore, these firms with their own accounting sections may still request advice from external experts in more complicated matters.

Table II.3. Accounting and bookkeeping services

Bookkeeping	• Handling of vouchers and recording of economic events (e.g. payments) • Verification and correction of accounts
Preparation of financial statements	• Preparation of accounting documents • Preparation of periodic financial statements (for legal purposes)
Analyses of accounts and financial statements	
Setting up maintenance and procedures for accounting systems	• Organization of accounting systems • Review of accounting procedures

Source: Based on annex 1.

Although bookkeeping today is highly dependent on computer processing of data, a substantial amount of manual work remains since vouchers must be recorded and checked against the actual payments. Vouchers are not necessarily paper-based, but most firms still have a long way to go before this type of manual work can be avoided. On the other hand, when all economic events are properly recorded, preparation of financial statements can be made more or less automatically once a computer-based accounting system is set up. In addition, more simple standard analyses of accounts can be made automatically. Internal control and audit of a computer-based accounting system will include control of the computer systems applied, control of paper-based vouchers and other documents affecting the financial statements, and control of inventories and other physical assets. Thus internal control procedures include physical as well as electronic processes. As control and audit of computer systems are much more complicated tasks than physical controls and require specialized expertise, firms may choose to outsource this routine.

Apart from controls related to inventories and physical assets, all bookkeeping and accounting procedures can be provided in arm's length transactions without any physical interaction with the client. Therefore, nearly all these services are transportable, i.e. tradable from a technical point of view (table II.4), although, as the discussion below elaborates, some of them may require support from activities undertaken in proximity to the customer.

In bookkeeping, intensive exchange of information is needed for recording of vouchers and other documents. Much of this communication can take place via the telecommunications network, e.g. by use of electronic data interchange (EDI) or by fax. The use of EDI should make it possible to transport data directly from one computer-based accounting system to another. But the application of EDI necessitates common standards for structuring of data, and although standards for accounting information have been developed, in practice, EDI is mostly used for exchange of accounting information between different departments in the same corporation.

Table II.4. Tradability of bookkeeping and accounting services

Major product	Service components	Tradability
Bookkeeping and accounting services	Handling of vouchers and recording of events Verification and correction Preparation of accounting documents	Good
	Preparation of periodic financial statements	Possible
	Analysis of accounts and financial statements	Good
	Organization of accounting systems	Poor
	Review of accounting procedures	Fair
	Advice relating to accounting and book- keeping services	Good

Source: Based on annex 1 and other information obtained from industry experts.

The use of EDIFACT messages for transmission of accounting information will increase the tradability of these services.[15] Under the EDIFICAS initiative, EDI messages will be tailored to the needs of the accountancy profession: a number of EDI standards are defined for exchange of accounting information of various kinds (e.g. financial statements, ledgers, accounting entries and so on) based on the internationally recognized EDIFACT standard. This work is supported by international accounting organizations such as the Fédération des Experts Comptables Européens (FEE) and the Society for World-wide Interbank Financial Telecommunication (SWIFT).[16] But more intensive use of EDI for transmission of orders and electronic payment will also remove the need for manual recording of vouchers and diminish the need for low-skilled labour in the working process. Introduction of EDI will facilitate further internationalization of accounting activities, but the potential for creating jobs requiring only low levels of skills in developing countries will probably diminish in the process. In this respect, electronic ordering and electronic payment are far more important than electronic exchange of accounting information.

Preparation of financial statements is thus a tradable, but also automated, process once computer-based accounting systems have been installed. Nevertheless, a limiting factor is that preparation of financial statements for legal purposes demands knowledge of national accounting rules. An exception is financial statements related to some kinds of affiliates of TNCs. If an affiliate is not established as a legal entity in a host country, the accounting rules of the country of the parent company apply. In this case, costs and availability of qualified labour will play an important role in determining the location of accounting activities.

Moreover, many standard analyses of financial statements are both highly automated and highly tradable, although more complicated analyses are difficult to conduct in an automatic manner. It is possible to trade the implementation of these types of analyses. Often, they will require extensive knowledge in certain specific areas (markets, production technologies, etc.), but this knowledge will in many cases be independent of the host country of the client and an accountant abroad may have the same opportunities to obtain the necessary information.

The organization of accounting activities demands intensive personal communication with the client. The client may have special problems and wishes to which the accountant must pay attention in the design of the accounting system. In addition, careful instruction given by the client is important. Therefore, at least some local presence is necessary. However, certain routines such as programming of software can be outsourced to any location once the basic design according the client's needs has been carefully specified. A review of existing accounting procedures can easily be made at distance, but again it is necessary to obtain detailed information on special conditions related to the specific client before existing procedures can be improved.

The tradability of accounting advice depends on the sort of advice given. Advice on accounting matters is closely related to advice on taxation and to advice on legal matters. However, advice on accounting matters is associated with procedures for preparation of accounts rather than the legal and economic consequences of those statements. Advice on purely technical matters related to an accounting system (e.g. how a certain type of accounting software handles a certain type of records) is the most tradable type. Other kinds of advice presuppose at least a certain level of knowledge of the nature and organization of the client; competence in national accounting procedures will in many cases be essential. Both these types of requirements tend to reduce the potential for trade.

2. Attestation services

Attestation services can be categorized in three main groupings: statutory audits, non-statutory audits and other attestation services (table II.5). In all of these, trust (on the part of the final user of an audit or attestation report as well as on the part of the client) is a major issue. It is often difficult to assess in advance the quality of the services delivered; even after the service has been received it may be difficult to ensure that the service delivered meets the expectations of the client. Use of brand names (e.g. one of the big international accounting firms) may be a substitute for trust gained through personal contacts and references. For attestation services, liability is a particularly vital aspect of the business. The value of an attestation service depends not only on the client's trust in the auditor, but also on the trust the other parties place in the auditor. Moreover, trust is also needed the other way round: the accounting firm assumes responsibility with reference to whether the information audited is correct. Therefore, it is not possible to rely solely on information delivered by the client. Although in theory all the necessary information could be delivered by the client via the telecommunications network, the auditor has to verify the information. This increases the need for local presence.

In the performance of an attestation service, the accountant typically relies on seven different types of evidence:

- ***Physical examination*** is the auditor's inspection or count of a tangible asset. This may be inventories, fixed assets, securities and/or others.

- ***Confirmation*** is a written or an oral verification of information included in the financial statement. The confirmation must come from an independent third party.

- ***Documentation (vouching)*** is the auditor's examination of the client's documents and records.

Table II.5. Attestation service products

Statutory audit	Audit of companies Public sector audit
Non-statutory audit	Operational audit Functional Organizational Special assignments Compliance audit Audit of financial statements Audit of mergers Audit of consideration of other than cash given
Other types of attestation services	Expert testimony/expert witnesses in accounting matters Prospective financial statements (forecasts and projections) Auditing of electronic-data-processing-based accounting systems Reviews

Source: Based on annex 1.

- ***Observation*** is used to assess certain activities directly. Through visits paid to the client, the auditor may also obtain a general impression of the company.

- ***Inquiries*** to the client are used to obtain the client's response to questions raised by the auditor. The response may be written or oral.

- ***Mechanical accuracy*** would involve checking a sample of computations and transfer of information. Checking of transfer of information includes testing that all recorded transactions are properly transferred to the right accounts.

- ***Analytical procedures*** are used to determine whether the balances appear to be reasonable. For example, comparisons may be made with the financial statements from preceding years.

The importance of each type of evidence depends on the type of service performed and the relationship with the client. An audit of a well-known client with a well-functioning accounting system will concentrate on other aspects than those of an audit of a new customer that might have an insufficient internal control structure.

Physical examination is the type of evidence where local presence is most needed. But observations also demand a certain level of local presence. For the remaining types of evidence local presence is not absolutely necessary, but documentation will often be difficult to obtain in full without direct access to the files of the client. However, increasingly, the use of documentation in electronic form may change this. Inquiries to the client will obviously in general be most easily made by means of direct personal contact. Confirmation can, however, typically be obtained without local presence. In any case, with regard to confirmation it is the distance to the third party, e.g. to the customers, that may be important. Mechanical accuracy and analytical procedures are the types of evidence that can most easily be obtained at distance.

a. Statutory audit

Statutory audit is the audit of obligatory periodic financial statements. The audit is conducted to determine whether the overall financial statements are drawn up in accordance with specified criteria. The audit results in a written statement expressing the conclusion with respect to the reliability of the financial statements. The audit is a legal requirement in all countries. In some countries, auditing is not limited to financial statements, but also involves certain types of operational audit, and a compliance audit may be required. This is the case for financial institutions such as banks and insurance companies in particular. Public sector audits, e.g. audit of public corporations, may also include different types of operational audits or compliance audit.

Since the audit of financial statements is by far the most important activity in a statutory audit, this section focuses on the work processes of financial auditing. Operational audits and compliance audit will be discussed further in the subsequent section on non-statutory audit. Audit of financial statements is not only the main activity included in statutory auditing, but is also the single most important activity of auditing firms. The audit process consists of a number of phases, as described below, and involves tests requiring various types of evidence (table II.6).

Table II.6. Relationship between types of tests and evidence used in the audit process

Type of test and type of evidence	Physical examination	Confirmation	Documentation	Observation	Inquiries to the client	Mechanical accuracy	Analytical procedures
Procedures to obtain an understanding of the internal control structure			x	x	x		
Test of controls			x	x	x	x	
Substantive tests of transactions			x		x	x	
Analytical procedures					x		
Test of detail of balances	x	x	x		x	x	x

Source: Arens and Loebbecke (1991, p. 340).

- ***Planning and designing an audit approach.*** Before an audit approach can be planned and designed, background information about the client's operations, market opportunities and legal obligations must be obtained. On the basis of this information, inherent risks and the acceptable audit risk are assessed. The next step is to understand the internal control structure and assess the control risk. With this information the auditor will become aware of the most important risks and where

errors are most likely to be found, and it is possible to develop an overall audit programme. The type of evidence applied in this process is inquiries to the client, observations and documentation. The physical presence of the auditor at the site of the client is important for acquiring knowledge of the business, and assessing inherent risks and control risks. However, once those two operations have been completed, the analytical procedures, the plan and consideration of detection risk could be implemented elsewhere, although they may require further contact with the client; again the best results would be achieved in a face-to-face situation.

- ***Test controls and transactions.*** The second phase includes both an auditing of the accounting system and an audit of the substance of the accounts. Some systems testing could conceivably be carried out at a location far removed from the client - through transfer of data on computer files. However, as tests usually involve inspection of documents supporting transactions and other events in order to obtain audit evidence that internal controls have operated properly, physical presence is in most cases necessary. For example, the auditor needs to be in direct contact with the client to verify that a transaction has been authorized; to inquire about internal controls that leave no immediate records for the audit (e.g. which person actually performed a particular transaction or control); and to re-perform controls to ensure that they were correctly performed.

- ***Auditing of the system.*** System auditing is particularly important where auditing is carried out for a new client or major changes in accounting procedures have occurred. For a new client, system auditing occupies as much as 50 per cent of the time spent on test controls and transactions. Thereafter, only parts of the system are tested each year. An important part of system auditing is auditing of computer systems. As more and more accounting processes are integrated into computer-based systems, this task becomes both more vital and more complicated. In financial institutions where information technology is integrated into practically all functions, auditing of computer systems is of particular importance. Test of controls is based on evidence from documentation, observation, inquiries of the client and mechanical accuracy.

- ***Audit of substance.*** This is done to check whether accounting transactions have been properly authorized, correctly recorded and summarized in the journals and correctly posted in subsidiary and general ledgers. The process includes checking the validity of samples of records. Samples are chosen with respect to identification of the most important risks and where there is an audit of control procedures. For instance, substantive tests may be extended in areas where control procedures are found to be inadequate. Substantive tests of transactions are based on evidence from documentation, inquiries to the client and mechanical accuracy.

- ***Performance of analytical procedures.*** These procedures are used to give a better understanding of the business and assess the firm's capability to continue the business in the same manner as previously. Moreover, they can reduce the need for tests of detailed balances, because they can help identify areas where tests are most needed. Analytical procedures also involve inquiries to the client. Many auditors choose to use analytical procedures extensively as they are comparatively cheap to perform.

- ***Tests of detailed balances.*** These focus on balances on the general ledger. The auditor will test the correctness of balances by physical examination and confirmation from third parties. Thus he or she may write to the client's customers and ask for confirmation of items received. A test of detailed balances is the most expensive and time-consuming task in the auditing process. Since the design and planning of a test of balances depends on the outcome the preceding tasks, it should in principle be performed towards the end of the auditing process. However, it is also the most time-consuming task and is often performed continuously during the accounting period, so that the client can present an audited financial statement shortly after the end of the accounting period. Tests of balances are based on evidence from physical examination, confirmation, documentation, inquiries to the client, mechanical accuracy and analytical procedures.

- ***Completion of the audit.*** Before the audit is completed a few additional tasks must performed: review for contingent liabilities; review for subsequent events; accumulation of final evidence; issue of the audit report; and communication with the audit committee and management. Contingent liabilities may be items such as income tax disputes, product warranties and notes receivable discounted. The most difficult part is to ensure that all liabilities are reported. This may require careful review of internal working papers, legal expenses and confirmation from third parties.

Auditing of financial statements requires at least some level of local presence. Physical examination and observations must be made on-site, and other types of information required are also most easily obtained locally. The need for physical inspection on-site is illustrated by the ZZZZ Best scandal, where a non-existent restoration company became a publicly traded company.[17] If the auditor had insisted that there was a need to perform a more careful physical inspection or to obtain confirmations from third parties, the fraud would have been discovered at a much earlier stage.

Another barrier against trade is that knowledge of local accounting and auditing standards is essential in some of the auditing procedures. As a basis for being able to give an opinion, the auditor needs to know in detail all the relevant professional and legal standards and rules applicable in a particular case. Since local national knowledge is clearly required, this favours the local supplier (even if there were no regulatory barriers to cross-border trade). The necessity for local knowledge also forms an economic barrier, inasmuch as it is costly in terms of the time and energy needed to acquire it. Again, this tends to favour the local supplier.

Nonetheless, a number of processes can be divided and the component services traded. The most tradable routines are, however, those that require substantial skills and specialized knowledge. Manual routines in substantive tests and tests of detailed balances are mainly related to handling of paper-based information filed on the client's premises. This information can in principle be transported and processed elsewhere, but the information chosen for sample tests must be collected on-site.

b. Non-statutory audits

i. Operational audit

An operational audit is an audit of a private or public organization's operating procedures. It can cover the entire organization or only parts of it. An organizational audit reviews the overall organization structure, while a functional audit concentrates on the operations of a particular function or department. Both types of audit demand careful inspections and observations on site. Operational audits are not suitable for trade via the telecommunications network, but specialized international consultants may be called upon to perform parts of the audit or the full operation. International databases may be important tools for operational audits. Many international accounting firms build up their own electronic databases containing sector- specific data on operational costs, productivity, rate of return, etc. These databases are used for benchmark analyses, which can inform the client about operational strengths and weaknesses in the company.

ii Compliance audit

Compliance audit is used to ensure that the operations of an entity comply with specific laws and regulations. Unlike in the case of financial auditing, the results are not distributed to a wider audience. Often, the management of the client is the primary target group for the reporting. If operations are computer-based (e.g. in an insurance company), the review can be made at a location distant from the client. Only if attestations are given to third parties, e.g. public authorities, must the auditor perform procedures for control of the information obtained from the client. The technical possibilities for trade are good, but the necessity of knowledge of national laws and regulations is an important limiting factor. However, if the audit is done to ensure that certain international laws and regulations are followed, trade is more likely to occur.

A special type of compliance audit, which is expected to experience high growth rates in the future, is environmental auditing, i.e. auditing with respect to environmental laws and regulations. Environmental auditing is a relatively new activity and not clearly defined as yet. However, as it often involves knowledge of local environmental regulations and may involve auditing of physical conditions in the company, it will probably be less tradable than, for instance, auditing financial conditions in a firm.

iii. Audit of financial statements

Audit of financial statements is mostly done in connection with a statutory audit, but it can also relate to auditing of financial statements other than the obligatory periodic ones. However, the procedures are basically the same. If the audit is primarily for internal use, less time is needed for control of the information delivered from the client. Therefore, activities such as confirmation, physical examination and some of the other procedures demanding local presence occupy a less important role.

iv. Other types of audit

Audit of mergers and audit of consideration other than cash given in connection with share issues are two other types of audit that are performed on special occasions. The activities performed are very similar to those in audit of financial statements. Often, the audit will be based on statutory audit supplemented with information on events that have taken place since the regular audit.

c. Other types of attestation services

In addition to the above-mentioned attestation services, a large number of attestation services exist which are only delivered occasionally. These are described briefly below and their tradability as well as that of other specific attestation service products discussed above is indicated in table II.7. Some of them are analysed in more detail in annex 1.

Table II.7. Tradability of attestation and auditing services

Major product	Service components	Tradability
Attestation services	Statutory audit of companies Statutory audit of public sector	Poor
	Functional operational auditing Organizational operational auditing Special assignment of operational auditing	Some
	Compliance audit Audit of financial statements	Poor
	Audit of mergers Audit of consideration other than cash given in connection with share issues	Fair
	Expert testimony/expert witnesses	Poor
	Prospective financial statements	Fair
	Examination of computer-based systems	Good
	Reviews	Some

Source: Based on annex 1 and other information obtained from industry experts.

The provision of expert testimony and that of expert witnesses are services performed in connection with court hearings in order to clarify technical questions in legal cases. Physical presence in court is necessary under the circumstances currently existing in legal procedures, but in principle videoconference facilities could be used. Tradability must be considered to be low.

Audit of prospective financial statements and characteristics of computer software are both analytical tasks that can easily be performed in locations at a distance from the client. However, audit of prospective financial statements may, in certain cases, demand knowledge of local market conditions. Another barrier against trade is that these types of services are often provided as part of a service package including a number of accounting services, e.g. statutory auditing.

A review is a limited auditing of financial statements. This service is particularly relevant for smaller firms that are not required to have a proper statutory audit.

3. Tax consultancy

Tax consultancy includes accounting, auditing and advisory services related to taxation (table II.8). All these services necessitate intensive knowledge of taxation laws and regulations and are often provided by specialized departments in accounting firms. For small accounting firms, tax services are often even more important than auditing services.

Computer systems are intensively used for calculation of taxation under different planning alternatives. At the national level, software for tax calculations is an important intermediate product, which is also offered by banks and other financial advisers.

Table II.8. Tax consultancy services and service products

Preparation of taxation accounts	
Taxation advice	Tax planning
Taxation representation	Submission of tax declarations Representation before tax authorities and court

Source: Based on annex 1.

a. Preparation of taxation accounts

Accounting firms prepare tax returns for both corporate and individual clients. For corporate clients, this service is often integrated with preparation of financial statements and other bookkeeping and accounting services. In principle, the service is highly tradable, especially in the case of corporate clients (table II.9). The need for knowledge of national taxation rules is, however, a severe limitation. However, parts of the manual work related to filling in taxation forms do not demand much knowledge of laws or regulations.

b. Taxation advice

Taxation advice is often offered in combination with other tax consultancy services. Although there is no technical reason for local presence, the prospects for international trade are poor, as the service is based on intensive knowledge of national rules for taxation. An exception is advice to large corporate clients eligible for tax payment in several countries and to others asking for advice on international taxation issues.

Table II.9. Tradability of tax-related services

Major product	Service components	Tradability
Taxation consultancy	Preparation of taxation account	Poor
	Tax planning	Poor
	Submission of tax declaration	Poor
	Representation before tax authorities	Poor

Source: Based on annex 1 and other information obtained from industry experts.

Intermediate services such as access to international databases on taxation rules in different countries are highly tradable. Therefore, local accountants may also in this case benefit from being part of an international network. Use of databases and expert systems may also enhance the tradability of tax planning. Expert systems can conceptualize local knowledge and make it more tradable. For example, databases containing recent data on tax regulation are widely used in the processing of tax products (Lanvin, 1993, p. 180). From a technical point of view, these databases can be accessed from anywhere in the world even if, for practical purposes, they cannot be relied upon to ensure a particular status in the assessment of tax declarations by government authorities.

c. Taxation representation

Submission of tax declarations may be offered in combination with preparation of taxation accounts; but it goes further than this, as the accountant is to a certain extent responsible for the correctness and completeness of declarations submitted. This is a limiting factor for tradability. Representation before courts or tax authorities for expert testimony or as witnesses is also not very tradable.

4. Management advisory services

Accounting firms develop an intensive knowledge of all aspects of their client's operations. This knowledge can be used as the basis for provision of a wide range of consulting services related to areas ranging from technical ones such as the organization of inventory management to broader strategic issues such as product development and marketing (table II.10). Many of these services may be provided by consultants without a background as accountants; for this reason it is impossible to draw a clear dividing line between these services and services provided by management consultants (chapter III). The services listed in table II.10 and annex 1 and discussed here are primarily those services bearing a specific relation to accounting matters.

An important difference between management advisory services provided by accountancy firms and other accounting services that include advice is the regulatory framework governing the two. While most other accounting services are heavily regulated and must be performed by certified accountants, management advisory services are in general not subject to specific regulation.

Table II.10. Management advisory services and service products related to accounting

Information technology consultancy	Software selection Hardware selection Application development Implementation and follow-up
Budgeting	
Organizational reviews and problem assessment	
Human resource reviews	
Inventory control	

Source: Based on annex 1.

Personal contact is an important part of all advisory services. The exact information delivered can often be transported by use of telecommunications, but a personal contact between consultant and client is essential in order to establish personal trust in the consultant and so that the consultant can become aware of the more implicit needs of the client. Nevertheless, telecommunications can play an important role in the transmission of information, both between client and consultant and between consultant and various back-office functions. This makes several of the management advisory service products related to accounting tradable to some extent (table II.11).

Table II.11. Tradability of management advisory services related to accounting

Major product	Service components	Tradability
Management advisory services	Software selection	Good
	Hardware selection	Good
	Application development	Good
	Implementation of information technology systems	Poor
	Budgeting	Good
	Organization reviews and problem assessment	Some
	Human resource reviews	Poor
	Inventory control	Good

Source: Based on annex 1 and other information obtained from industry experts.

a. Information technology consultancy

Consultancy related to information technology and systems is a service that has developed from accounting and bookkeeping services. With the rapidly increasing use of computer-based accounting systems, companies desperately need expertise in computer-based accounting. Consulting related to information technology has expanded to be one of the most important management advisory services delivered by accounting firms. Consultancy is often provided as part of a package in connection with the delivery of accounting systems developed by the accountancy firm. Although some knowledge of national accounting rules may be necessary, the most important skills are related to accounting software in general.

Development of software applications is a labour-intensive process and much of the work is normally done at a distance from the customer once user needs have been specified. A number of United States and European software firms develop parts of their software overseas where wages for such work are lower - for example, in India or the Baltic States.

Implementation of computerized information systems will normally require direct on-line access to the client's computer facilities. This may be obtained via the telecommunications network, but is in most cases obtained on-site.

b. Budgeting

Budgeting is, in large part, closely related to accounting and bookkeeping activities, but if new firm strategies or market developments are to be taken into account, skills that go beyond pure accounting are necessary. These skills can be either local or international. For larger corporate clients, the necessary skills increasingly become more international as their operations are world-market-oriented. Local presence is not essential and the tradability for budgeting of internationally oriented firms is good.

c. Human resource reviews

Human resource reviews are reviews of accounting personnel, for instance in connection with the reorganization of a corporation. The work is largely based on personal communication and hence tradability is limited.

d. Inventory control

Inventory control as a management advisory service deals with the implementation and revision of inventory control systems but unlike attestation service does not include control of inventories. Thus the service is very similar to information technology consultancy, as inventory control systems are based on computers. Tradability of the implementation service is limited, while the development and review of inventory control systems are very tradable.

5. Other services

In addition to the services discussed in the preceding four sections, accounting firms may be involved in a wide range of other services (table II.12 and annex 1). Some of these are discussed below while others are briefly described in annex 1. Some of these are services, such as legal advice and investment advice, which are mainly provided by other professions. These are primarily provided by accountancy firms as supplementary services offered to existing clients (or to new clients that want advice from an independent source), generally on special occasions. Especially in the case of advice on debt/equity restructuring or on mergers and acquisitions, competition is based on quality rather than on costs. For these types of services, access to international information is often more important than local knowledge. As there are no strictly technical reasons for local presence, delivery via international trade at arm's length is quite possible (table II.13) - at least in combination with services from local consultants.

Personal financial planning is, from a purely technical point of view, just as tradable as the advisory services mentioned above. But it is much less likely for economic and information-related reasons that individual clients will contact an accountant located abroad for delivery of this relatively basic service. Another barrier is that the market is currently dominated by smaller local accounting firms, which may also find that the economics of cross-border delivery are unattractive.

Executive selection may include a worldwide search for qualified personnel. In this case, trade is quite possible. However, in most cases, executive selection does not involve international activities and international delivery of services in this area is therefore still very limited.

Table II.12. Other accounting services and service products

Specific special services	• Advice on debt/equity restructuring and rescue of financially troubled businesses • Advice concerning mergers and acquisitions • Advice on evaluating and starting a new business • Personal financial planning (for individuals) including retirement plan design and implementation • Business succession planning
Continuing services of a special nature	• Executive selection • Investment advice - Portfolio management - Brokerage - Development of financing plans - Trusteeship and fiduciary activities
Staff and other support services	• Provision of staff to perform accounting services for the client
Legal advice [a]	
Product services	

Source: Based on annex 1.
[a] In some countries.

Staff and other support services include placement of accounting staff on-site, and are therefore difficult to trade via information and communication technology linkages. The most important form of internationalization in this area would be associated with movement of the provider, i.e. an international specialist is deputed from abroad.

Table II.13. Tradability of other accounting services

Major product	Service components	Tradability
Other services	Advice on debt/equity restructuring Advice concerning mergers and acquisitions	Good
	Personal financial planning	Poor
	Business succession planning Executive selection	Fair
	Portfolio management Brokerage Development of financing plans	Good
	Trusteeship and fiduciary activities Provision of staff	Poor
	Legal advice Product services	Fair

Source: Based on annex 1 and other information obtained from industry experts.

D. Impact of tradability on modes of internationalization

International activities in the accounting profession are not a recent phenomenon, but have evolved gradually in the twentieth century. Three of the British firms whose descendants today form part of the some of the largest international accounting firms - Touche Ross, Price Waterhouse and Deloitte Haskins & Sells - had opened their first overseas offices by 1900 and, within 20 years, their international capabilities were already substantial (Daniels et al., 1989, p. 85). The decision to set up an office abroad was often guided by the requirements of an individual client. Even before the start of the Second World War in 1939, the first tentative links were made between practices based in the United Kingdom and leading national practices in the United States. This section examines trends in international transactions in accounting products and developments with respect to the activities of accountancy TNCs, and considers the impact, actual or potential, of the growing tradability of accounting service products on modes of internationalization in the industry.

1. Trends in international transactions in accounting services

Although evidence of the internationalization of the accountancy industry is seen in the creation of networks of firms across borders or the establishment of affiliates of large firms such as the big transnational accounting firms, statistics throwing light on the extent and modalities of international transactions in the industry are limited. However, data for the United States shed some light on the extent and nature of international transactions (table II.14).

Table II.14. International transactions in accounting and related services: United States, 1986-1999 [a]
(Millions of dollars and percentages)

Year	Imports (A)	Sales of foreign affiliates in the United States (B)	Percentage (A/B)	Exports (C)	Sales of United States affiliates abroad (D)	Percentage (C/D)
1986	29	...	...	21	320	6.6
1987	37	1 113	3.3	27	349	7.7
1988	31	1 007	3.1	37	388	9.5
1989	22	1 575	1.4	124	319	38.9
1990	57	1 023	5.6	119	378	31.5
1991	89	1 146	7.8	168	419	40.1
1992	104	1 805	5.8	164	473	34.7
1993	103	2 080	5.0	164	478	34.3
1994	130	3 905	3.3	132	478	27.6
1995	170	4 200	4.0	181	559	32.4
1996	218	4 285	5.1	222	570	38.9
1997	279	...	...	316	561	56.3
1998	318	...	...	353	545	64.8
1999	531	...	...	440	...	...

Sources: United States Department of Commerce, *Survey of Current Business: Foreign Direct Investment in the United States*; and *U.S. Direct Investment Abroad*, various issues.

[a] Data for most years include data for accounting, research, management and related services.

The figures suggest that the size of international transactions as such for United States accounting firms is relatively small, with the combined sum of foreign revenues from exports and sales of accounting and other services by United States affiliates abroad amounting to a little under $900 million in 1998. The ratio of exports to foreign affiliate sales went up from 7 per cent in 1986 to 39 per cent in 1996, and to 65 per cent in 1998, a fact which suggests that exports had become more important in the 1990s. In contrast, the ratio of imports to foreign affiliate sales in the United States (which were considerably higher than sales by United States foreign affiliates abroad) did not change significantly, remaining below 6 per cent during the years in the 1990s for which data are available (with the exception of 1991).

It is difficult to draw any definite conclusions from these figures, however. Although cross-border trade in the form of exports appears to have become more important for United States-based firms in the 1990s, it reflects an amount that is relatively small compared with the total revenue of such firms. Moreover, while foreign-based firms apparently increased sales of accounting and related service products by their affiliates in the United States market, they did not increase their use of cross-border trade to any significant extent. The reasons for these characteristics and trends in international transactions in accounting services lie, presumably, in the nature of regulations in the sector and the particular ways in which major international accounting firms have operated in the post-war period.

2. The post-war expansion of the large international accounting firms

The post-war period starting in 1945 generated additional international activities for accountancy firms that are associated with the creation of transnational partnerships or affiliations. For example, a merger between a British and an American firm in 1952 created Deloitte Haskins & Sells, and by 1958 the new firm had established operations through partnerships in Brazil, Peru, Venezuela, Colombia, Uganda and Japan. The creation of these partnerships was encouraged by the internationalization of economic activity in general; the tendency for large companies to become transnational brought a demand for auditors able to work internationally. This was particularly the case where companies were required to produce consolidated accounts for holding companies with subsidiaries all over the world.[18] It was convenient for both the companies and the auditors if the accountancy firms auditing the foreign subsidiaries were linked to those auditing head offices. Today, the large international accounting firms tend to audit both the parent and the subsidiary, whether the latter is in the same country or not, but this practice is not universal. In a sample of large subsidiaries (all of whose parent companies were audited by one of the large international accounting firms) examined by CIFAR, around 65 per cent had the same auditor as the parent company (CIFAR, 1995, pp. 372-374).

a. Strategies for international expansion

International accounting firms' method of international expansion has varied. Arthur Andersen, for example, has a rather special background, for by 1939 it had no overseas offices in its own name, but entered into agreements with overseas practices that would represent it. At a time when other firms were strengthening links with these practices in the 1950s, Arthur Andersen gradually severed its links with them and moved to opening up offices in its own name. The firm's senior executives wanted to maintain strong central control over accounting standards and procedures; something which could be more easily done if they started up offices themselves or completely bought out existing national practices (Daniels et al., 1989, pp. 90-91).

They established a worldwide committee on professional standards in the late 1950s to lead the firm's technical and professional development and ensure high quality (Hanson, 1989, pp. 51-52).

Thus Arthur Andersen's new offices in foreign countries were started up with staff from the American or British firms. The offices then began to provide services to the American and British clients that had subsidiaries in the country, or that maintained other connections with that particular foreign country. As the office became more established, the proportion of local staff employed was increased. This has meant that Arthur Andersen has a more unified structure than the other big international accounting firms. In 1977, it established an administrative entity, Arthur Andersen & Co. Société Coopérative (SC)[19] in Switzerland to coordinate its activities on a worldwide basis.[20] Each partner in the worldwide organization is a member of the SC and also a member of another partnership (Hanson, 1989, p. 49). The SC is managed by a small board of partners - 18 in 1988, expanded to 24 in 1989, with 3 *ex-officio* members.[21] This board draws up service agreements between the different parts of the firm. The establishment of the Swiss entity allows the worldwide firm to control the whole corporation, but in such a way that, for each individual country, the local firm is for legal purposes an independent entity. It is apparently the only firm with profit sharing (rather than just cost sharing) on an international basis.

Among the other firms, Price Waterhouse is the one that has come closest to Arthur Andersen in terms of building its international activities from scratch. Price Waterhouse established a separate international firm on a worldwide basis in 1945, when it integrated with existing national practices. In the beginning, the expansion of international activities developed from such national partnerships, but during the last decade the firm has been more willing to expand through merger, recognizing that it had to have a major presence in all geographical areas in order to meet the demands of clients.

The general approach of other firms has been to merge with established national firms where possible. In cases where such a procedure has not been possible, a local office has been started by expatriates, but a local staff is trained as quickly as possible. The local office and staff are then supposed to take over so that the office can fit in with its local environment and become an independent profit centre in the organization. The main principle is that the local office should be able to be charged for services provided by other profit centres (i.e. practices in other countries that are members of the same firm). While the network created through this process is less unified than that of Arthur Andersen, there is the advantage that each of the member firms brings to the network its established client base, which will often include some of the most important firms in the country (NERA, 1992, pp. 20-21). The disadvantage is that the firms are not so strongly "attached" within the international firm in terms of understanding and implementing worldwide standards as is the case in the TNCs they serve. It has been argued that it is "harder to imagine Ford of Spain splitting off from its parent and joining Volkswagen, than it is to imagine Deloitte UK joining Coopers and Lybrand".[22] Since the mega-mergers of the 1980s, much effort has been expended in creating a corporate culture in the big international accounting firms, through such methods as international courses for different levels of staff (including partners), detailed implementation of worldwide technical and professional standards and manuals, and international quality control checks to ensure compliance.

b. Cooperation with local affiliates

Apart from the specific organizational pattern of Arthur Andersen, the general model followed by the large international accounting firms is that each national office has one or several representatives on the policy committees of the worldwide organization. Usually, the number of

representatives depends on the size of the contribution that each national office makes to the world firm. Not surprisingly, these bodies mirror the dominance of the United States. It is the policy committees that plan and coordinate the strategies pursued by the firm; they put forward plans for mergers with other firms, or diversification of activities, and they formulate and implement global decisions. If the majority in the policy committee proposes a new merger, for example with a major Japanese firm, it would be difficult for the representatives from a small country such as Denmark to overturn that decision (Hanlon, 1994).

In matters that are primarily of local interest, however, the local partners still tend to run the business themselves; for example, they decide on the rejection or acceptance of new clients, they determine which people will be promoted to partnership, and so on. As long as they adhere to the firm's international technical standards, organizational arrangements and ethical rules (adherence being regularly checked through quality control visits from abroad), they are provided with a fairly autonomous status. This is both necessary and expedient. National regulations normally require that firms are controlled by resident, nationally qualified auditors. In many cases, the national firm is owned completely by the national partners, and the international link is created through a second organization that is made up of national and international partners. At the lower levels of the firm, links to the international level are created through participation in international courses and periods spent on exchange at other offices (Hanlon, 1994, pp. 66-67).

c. International harmonization of methods

The large international accounting firms are, or are becoming, internally harmonized in the area of audit methods. Each of these firms maintains its own separate audit method manuals that prescribe the way in which the audit is to be done independently of where it is carried out. Getting the audit manual standardized has been an important part of post-merger activity. For example, following the establishment of KPMG on 1 April 1989, an audit process task force composed of representatives from the Dutch, German, British and American firms forming part of the company was set up to produce a standard manual. They produced a draft for review by the national firms, and ultimately the revised version was distributed at the first international partners conference, which took place six months after the merger (Cypert, 1991, p. 194).

On account of the significance of the brand name for each firm, it is essential to maintain some control over standards of work in the offices of the individual partnerships or national members. Quality control visits are taken very seriously, particularly because there have been in the recent past highly embarrassing scandals concerning the apparent lack of proper audit work; such scandals can obviously damage the reputation of the firm internationally, as well as having a negative effect on insurance premiums. The collapse of the international bank BCCI in 1991 is a case in point. This incident presented an embarrassing piece of negative public relations for the bank's auditors, although they claimed that the financial statements of some segments of the bank were examined by other auditors. One of the reasons was that, generally, it is the responsibility of the auditor of the holding company to ensure that the work of the other auditors is carried out satisfactorily.[23] The auditors of Barings Bank clearly had a problem too when their Singapore office failed to uncover the unauthorized trading that ultimately destroyed the bank in 1995.[24]

There are both advantages and disadvantages that derive from being part of one of the big international accounting firms. One of the major advantages for a national firm is that there may be a considerable amount of work that gets transferred from members in other countries, in particular the kind of work related to audits of foreign subsidiaries.[25] As mentioned earlier, these firms tend to audit both the parent and the subsidiary, whether these are from the same country or

not (CIFAR, 1995, p. 372). Another advantage is that they are able to benefit from international brand name recognition in accountancy. Such "reputational" benefits may be of great significance with regard to better opportunities for getting and retaining the business of major international clients. The reference to a brand name for the accountant also improves the ability of the clients to promote their international identity and raise their own status. Indeed, it is sometimes argued that it is primarily "reputational effects" which have driven the growth of international accounting firms (Davis et al., 1993, pp. 105-118). There is definitely a tendency for financial institutions to put pressure on large firms to use an auditor from one of the large international accounting firms.[26]

There is, however, one major disadvantage to being associated with large international companies. This is that some client companies may not wish to have the same auditor as a major competitor employs. This is not merely a problem that arises in connection with a merger. When major corporations decide to change their auditor firm, a predominant consideration is the question of which other clients that auditor has, and not only the reputation and price considerations.[27]

By the late 1980s, with "the globalization of financial markets, and with computerized communications linking corporate operations around the world, the multinationals were now truly multinational" and, to match their global presence they wanted "international accounting firms capable of providing strong cohesive services world-wide" (Stevens, 1991, p. 212). In terms of the organizational structure, however, the big accountancy firms remain "multi-domestic" rather than global - combining an international brand name with local production (Buckley and Young, 1993, p. 211). This sums up the special characteristic of transnational accounting firms: they can appear unified and globally organized and competent (at least in advertising material), and at the same time seem comparable to a loosely knit network. The latter image is often presented when such firms are trying to prevent liability claims travelling across borders to other firms in the organization. In a way, the situation that exists today is that the big firms, through their linked webs of national practices, combine more traditional forms of trade and international production in delivering accounting services internationally.

3. Medium-sized and small firms and their internationalization

Medium-sized accountancy firms began to act in defence of their market shares in the 1970s; they tried to create their own international networks, but their affiliations tend to be looser than those of the big international accounting firms.[28] The shares of these firms in the market for audit services is greater in developing countries in comparison with industrialized countries, where the big firms dominate (CIFAR, 1995, p. 379). In certain other countries as well, such as Austria, France and Japan, a number of fairly large companies are audited by firms other than those affiliated to the big international accounting firms, although the latter have established a commercial presence there too.

Beyond the large and medium-sized firms (either with or without international linkages) there is a third category of firms, the small local ones. These are numerous in some countries (e.g. United Kingdom and Ireland), where they provide bookkeeping and attestation services to small companies. Some small firms are "niche market" firms, specializing in a particular service, e.g. tax consultancy or corporate finance.

* * *

Auditing has been (and still to a large extent is) at the core of the services offered by the professional accountant. The nature of auditing has shaped the methods of expansion and internationalization that the international accounting firms have undergone. Trade in this basic service is still subject to substantial legal and technical barriers. These limitations, and the fact that audit services are very difficult for clients to monitor - customers tend to rely on suppliers to specify what they should be demanding as well as to supply the service - would seem to indicate that internationalization will not occur and that domestic supply of the services will dominate (Davis et al., 1993, p. 113).

However, the large international accounting firms seem to represent a striking example of the internationalization of service firms in practice, and they are far more internationalized than, for example, lawyers (Flood, 1995, pp. 139-169). Cross-border sales of services are characteristically fraught with danger and few customers wish to venture into new markets without some kind of external support. When, for example, a TNC based in the United Kingdom is interested in opening a business in Spain it will usually be too unfamiliar with the local market for services to risk purchasing auditing services from small, unknown firms. It will therefore buy such services from one of the big firms, whose services are of a standard, known, quantity and quality. They are also likely to choose to use the same firm as they use in their home country.[29]

In addition to the legal and technical barriers, the main reason for the small volume of cross-border trade (for example, in the European Union) in accounting services is that the international networks of firms discussed above have been able to develop their own solutions. They mainly rely on licensed accountants in the host countries to supply their services locally, and refer their work to the corresponding members of the network in the relevant countries when international services are needed (European Commission, 1995, pp. 24-25). At the same time, however, these multi-domestic networks of partner firms are gradually becoming more tightly knit and information technology is playing a key role in this process. A number of intermediate service products such as accounting and auditing software are highly tradable. These products may only constitute a limited fraction of the overall economic activity of firms, but they are important for the development of a standardized set of products and standardized quality control that can be enforced throughout the entire organization. This is likely to further promote international harmonization of accounting practices and services. Although there may be national variations in regulations, the working routines involved in the production of accounting services will converge. Convergence of capital markets will also cause a convergence towards international accounting standards, further accelerating the demand for highly qualified accountants. Thus, the tradability of accounting services will be greatly influenced by the existence of accountants who can meet international professional qualification requirements. Advances in information technology applied to working routines and advances in professional training will facilitate further trade in accounting services.

Notes

1. 'Regulated services" refer to those services which the accountancy profession carries out which are regulated through law. "Reserved function" refers to those activities which only qualified professional accountants can carry out. Auditing is the largest and most important of these. (Based on definitions used in IFAC, 1995.)
2. An example are the attempts by the Securities and Exchange Commission (SEC) in the United States to ban accountancy firms from offering other services such as consulting to audit clients. Although the SEC backed down in the face of an aggressive battle by accountants resisting such restrictions, some SEC-mandated rules remain - such as restrictions on the sort of work that accountants' affiliate firms can undertake for audit clients (see *The Economist*, 3 March 2001.) The final rule of the SEC on auditor independence can be found at http://www.sec.gov/rules/final/33-7919.htm. Non-audit services that have been placed under more restrictions as a result of the final rule include bookkeeping and other services related to the audit of clients' accounting records, financial information systems design and implementation, appraisal or valuation services and fairness opinions, actuarial services, internal audit services, management functions, human resources, broker-dealer services and legal services.
3. United States estimated revenues for employer and non-employer firms in accounting, tax preparation, bookkeeping and payroll services (North American Industry Classification System) were $76.3 billion in 1999 (up from $70.4 billion in 1998). See http://www.census.gov/svsd/www/sas54.html. (It should be noted that payroll services, included in those figures, are not commonly provided by accounting firms.)
4. The industry was dominated by the "Big Eight" in the 1980s and the "Big Six" until the later 1990s. Today, it is reduced to the "Big Five" as a result of mergers driven by globalization and increased competition.
5. See *The Economist*, 3 March 2001, p. 61.
6. See *International Accounting Bulletin*, "World Survey", December 1995.
7. See Clolery, 1994, pp. 16-56. This survey shows clearly the regional differences in specialization and business strategy for the same accounting firms.
8. See *Journal of Accountancy*, January 1996, pp. 20 and 25.
9. *International Accounting Bulletin*, "World Survey" Supplement, December 1993.
10. See, for instance, UNCTAD (1994c): An overview of current developments at the global level in the field of accounting and reporting by TNCs is also provided in chapter I of UNCTAD (1995, pp. 2-17).
11. Often, reputation is related to the size of a firm's operations; see Aharoni (2000, pp. 135-137).
12. The Eighth Directive was adopted as a new Company Law Directive in 1984 (84/253/EEC) and should have entered into force in member States before 1 January 1990. For various reasons, its implementation has been severely delayed, and an assessment in 1993 indicated that several of the large EU countries had merely made minor modifications to their national legislation to accommodate the intentions of the directive. See UNCTAD (1994b), particularly chapter VIII, pp. 177-204.
13. There are about 138,000 registered auditors - "approved persons" in EU legislation terminology. The extent of mutual recognition of registered auditors is limited. It varies between 20 and 40 per cent annually for the whole EU. (Information based on Financial Times Information Limited (2000), and inquiries with the European Commission (Internal Market Directorate General, Financial Markets - Financial Reporting and Company Law Unit), and the secretariat of the Fédération des Experts Comptables Européens.)
14. The principal sources of information were: Fédération des Experts Comptables Européens, *Survey of the Activities of Professional Accountants in Europe*, 1995; National Economic Research Associates, *Competition in European Accounting: A Study of the EC Audit and Consulting Sectors*, 1992; and *Massachusetts CPA Review: A Rainbow of Consulting Services*, 1992.

15. EDIFACT (Electronic data interchange for administration, commerce and trade) is a common standard developed in 1987 under United Nations auspices and adopted by the International Organization for Standardization (ISO). It defines rules for the electronic exchange of standardized documents between different locations and thereby allows communication between users of different hardware and software. See Lanvin (1993, pp. 258-259).
16. Based on draft recommendations prepared by the Western European Edifact Board (1995); and on Schlieper (1995).
17. ZZZZ Best claimed to be a significant Californian restoration business. However, the company existed only on paper. Its accounting firm failed to detect the fraud, probably because it agreed to restrict its examination for reasons of confidentiality. Among others things, the accounting firm agreed not to disclose the location of the buildings under restoration to third parties and not to make any follow-up telephone call to any contractors, insurance companies or building owners. See Stevens (1991, p. 271).
18. Consolidated accounts were a common feature of financial reporting in the United States by 1910, although not legally required until much later. Developments were much slower in the United Kingdom, but by 1939 the London Stock Exchange was requiring directors of holding companies seeking to issue shares to produce both a consolidated balance sheet and a consolidated profit and loss account for the shareholders (see Edwards, 1989, pp. 230-232). They became compulsory in the United Kingdom for annual accounts following the 1948 Companies Act. In some countries in Europe they did not become compulsory until after adoption of the Seventh Company Law Directive of 13 June 1983 into national legislation in the late 1980s.
19. It is now known as Andersen Worldwide SC following a 1996 name change.
20. See Cooper et al.(2000, p. 113).
21. See, e.g. *Arthur Andersen Annual Report 1995*.
22. Davis et al. (1993, p. 114). This example is not chosen accidentally. In 1989-1990 some firms did not follow their international partners in an internationally organized merger. For example, in the United Kingdom and in the Netherlands, Deloitte did not join DRT (Deloitte Ross Tohmatsu) as it then was, but instead became part of the Coopers & Lybrand international network. In Germany a major firm (Treuarbeit AG) formerly owned by the German Government joined Coopers & Lybrand and dropped its earlier link with Price Waterhouse.
23. See http://www.fas.org/irp/congress/1992_rpt/bcci/01exec.htm.
24. See http://www.numa.com/ref/barings/bar08.htm.
25. This description assumes a degree of choice on the part of the national firm once it has joined the international firm. However, in some cases it seems that the national firm - through compulsory and voluntary staff changes and organizational transformations - may tend to lose much of its independence (if not legally, then de facto).
26. See *Accountancy*, July 1996, p. 17.
27. When Arthur Young, the auditor of Pepsico, merged with Ernst & Whinney, which was the auditor for the rival company, Coca-Cola, the latter apparently told the merged firm, Ernst & Young, that it must choose between its two clients. Ernst & Young chose to keep Coca-Cola, and thus lost Pepsico as a client. The Pepsico audit was subsequently undertaken by one of the international rivals of Ernst & Young, namely KPMG. See Cypert (1991, p. 237).
28. For more details, see NERA (1992, p. 11); and Daniels et al. (1989, p. 96).
29. It has been argued - by Davis et al. (1993, pp. 105-108) - that many multinational clients choose not to exploit the economies created by production integrated over borders, i.e. they do not choose to use the same professional accountancy firm. However, they quote evidence from 1983, which is moreover limited in geographical scope (the United Kingdom). CIFAR (1995, vol. 2, pp. 372-374) suggests that this rather overstates the case. As noted earlier in the text, studying a sample of large subsidiaries, CIFAR found that in a high proportion of cases big international accounting firms tended to audit both the parent and the subsidiary, whether it was in the same country or not.

III. MANAGEMENT CONSULTANCY SERVICES

The types of firms and the services provided by management consultants are diverse and the scope of the industry or profession is not well defined. People with different backgrounds and qualifications such as banking, computing, economics, general management, production management, accounting, law and engineering are engaged in the industry, with very different assignments being undertaken around the world. In contrast to many other services, including accountancy consultancy (chapter II), there are currently no formal regulations or international legislative measures designed specifically to govern the management consulting industry in most countries at the national or international levels. However, professional associations for management consultants have formulated guidelines for an ethical code of conduct in several developed countries and in some regions, and there are efforts to develop international standards of certification.

This chapter focuses on the tradability of the services provided by management consultants. It first provides an overview of the industry, its functions and services, markets and structure. It then examines the factors influencing tradability of management consultancy services generally and proceeds to examine specific management consultancy products and their tradability. Finally, it considers the impact - or potential impact - of tradability on the internationalization of management consultancy services.

A. Overview of the industry

1. Definition and scope of the management consultancy industry

Management consulting has been defined as "an advisory service contracted for and provided to organizations by specially trained and qualified persons who assist, in an objective and independent manner, the client organization to identify management problems, analyze such problems, recommend solutions to these problems, and help, when requested, in the implementation of solutions" (Greiner and Metzger, 1983, p. 7). This definition captures the diverse character of qualifications needed by professionals in the industry and establishes management consultancy as an autonomous industry. The characterization of the industry as independent is important, as management consultants should not be associated with any organization that has a close relationship with the client. Day-to-day management, implementation of specific projects, planning and designing new strategies, and so forth are all included in the variety of services supplied all over the world by international and local management consultancy companies.

The definition provided above suggests a certain focus of the products offered by management consultants, but the boundaries between management consultancy and other business services remain unclear. Some of the most important areas where those boundaries are blurred, and where the markets served by management consultants are threatened by services offered by firms belonging to other industries or professions, are the following:

- ***Auditors***, who are typically very keen to give business advice to their audit clients. As a matter of fact, this is a strategy deliberately chosen by several of the big international accounting firms.

- ***Engineering consultancy***, which increasingly supplements the technical skills in its business advice with managerial elements. This is most clearly seen in international project markets such as Eastern and Central Europe.

- ***Business advisory services*** within communication, public relations and similar areas, which are extending their services beyond the formulation of the messages that management sends to employees, owners, the press, etc. These advisers are willing also to engage in the decision processes that form the concrete background for the messages.

In addition to these, other industries are entering the market. Most notably, a number of software houses have established consulting departments offering information-technology consultancy services similar to those offered by management firms. On the other hand, some management consultancy firms develop and market their own software products.

The obscure boundaries between management consultancy and other services have important implications for the markets and the strategies of major firms in the industry. The overall tendency is that the markets become far more competitive, and that the strategies and behaviours of most firms within the more narrowly defined industry of management consultancy tend to emphasize the building of specialized competencies that ensure clear advantages vis-à-vis competitors from other sectors.

2. Markets and industry structure

No official statistics are published for management consultancy markets worldwide, but one of the key journals in the field, *Consultants News*, has estimated that the world management consultancy services market amounted to $28.3 billion in 1992 and $40 billion in 1995.[1] This figure tallies with an estimate of the European market reported by the Fédération Européenne des Associations de Conseil en Organisation (European Federation of Management Consulting Associations) (FEACO) - a figure of e42.5 billion ($37.8 billion at the current exchange rate) in 2000 (FEACO, 2001). Given that traditionally the United States market has accounted for roughly half of the world market for management consultancy, with the European market following in second place, it appears that the size of the world market for management consultancy can be roughly estimated to be around $70-80 billion in 2000.

The absence of reliable and comprehensive statistics is partly related to the lack of a strict definition of the industry and the blurring boundaries in relation to other industries. The figure of $80 billion quoted above includes, for instance, services provided by technology transfer institutions, think tanks, software houses, computer centres, information brokers and financial institutions. It may also reflect the fact that management consultancies often undertake work other than management consultancy (Vogler-Ludwig, et al., 1993).

To a large extent, descriptions of the market for management consultancy and statistical profiles of the industry have been equivalent to descriptions of the activities of the large management consultancy firms. The problem with this approach is the exclusion of the many small consultancy firms, e.g. consultants operating entirely on their own and often only in national markets. These firms are not included in most surveys of the industry, but they constitute the majority. According to a FEACO survey, there were approximately 40,000 enterprises with 260,000 consultants operating in the European market in 1999 (FEACO, 2000) ; this means that there were fewer than 7 consultants per firm on average, which suggests that the

majority of firms are small in terms of employment. The same survey also found that small firms (with a turnover of less than €500,000) comprised 82 per cent of the total number of firms, while accounting for 10 per cent of total turnover; medium-sized firms accounted for 18 per cent of firms by number and 42 per cent of the turnover; and the largest 20 firms accounted for 47 per cent of the turnover.

In terms of employment as well as output, management consultancy is still a small industry. On the basis of the above-mentioned figure for the number of consultants, management consulting accounts for less than 1 per cent of employment in Europe; its share in European gross product is similar (FEACO, 2000). Moreover, the majority of the consultants have been reported to be located in five European countries: in 1998, Germany accounted for 31 per cent, the United Kingdom for 18 per cent, Italy for 16 per cent, and Spain and France for 8 per cent respectively of the then 200,000 management consultants operating in Europe (FEACO, 1999).

The demand for management consultancy fluctuates with the business cycle, but during the 1990s a relatively steady rise in demand became manifest, as recourse to management consultancy became increasingly common practice among larger companies, and new markets opened up in regions such as Eastern Europe and the growing economies of Asia. Statistical data that document this demand are difficult to obtain, but figures compiled for countries in the European Union may serve to illustrate some salient features. At the end of the 1990s, for example, the largest increases within Europe were reported in information-technology consultancy (as companies and organizations prepared for the introduction of the Euro and the year 2000 issue, which also accounted for the largest share of total turnover (44 per cent) in 1999), followed by production-management and financial and administrative system consultancy, with the financial services sector being the biggest user, followed by communications, manufacturing and energy (FEACO, 1999 and 2000).

A useful distinction can be made between demand in two different markets for management consultancy services: the interaction market and the international project market. The differences between these two markets are particularly significant for understanding two aspects of the tradability of consulting services: on the one hand, the different requirements of these two types of market may impose different barriers to entry by virtue of the skills, reputation and flexibility characterizing the products offered for each market; on the other hand, the differences between the two markets also exemplify the contrast between approaches stressing the development of professional skills or client relationships respectively - and thus the strategies of generating more or less standardized product lines. The differences in demand will exert an influence on the strategies adopted by the management consultancy firms as an element of competitiveness, but they do not necessarily directly influence the nature of services offered.

The interaction market resembles traditional markets for buying and selling services. Public and private clients demand services in the same way as they demand services from an auditor, a solicitor or a public relations bureau and actually through the same mechanisms as those whereby a master artisan is asked to give a proposal for building a house. These market mechanisms are typically described in textbooks on services and service marketing. The interaction between the customer and the supplier is very important and decisive for the turnover of the specific service.

Most management consultancy firms strive to satisfy the needs of existing and potential clients, on the one hand, and to build up barriers against movement of vital staff to close competitors, on the other hand. For many firms, achieving client satisfaction and the prestige and

reputation that accompanies such achievement constitutes the overarching goal. But to ensure that this "capital", accumulated in terms of skilled human resources, is appropriated by the firm is an equally important objective. Most management consultancy firms attempt to retain their key people by offering high remuneration or partnership.

The task of accumulating competitive skills is often undertaken almost on an ad hoc basis as the knowledge gathered in one assignment is carried over into the next, or the management consultant perceives a new idea or "fad" in the business. On account of this rather unsystematic approach, many firms have difficulties moving into new fields. For example, not all management consultancies reacted promptly to the wave of interest in quality assurance - delivered as management services under headlines such as quality certification (ISO certification) and total quality management. This huge market that appeared suddenly some years ago has been served only by a small part of the management consultancy industry. Today, business process re-engineering has become a hot issue for many companies and even public institutions. Again, only a small part of the management consulting industry has succeeded in building up the required knowledge within a very short period in order to supply this kind of service.

The international project market is, in contrast, characterized by a set of relatively fixed relationships between at least three generic market players: the technical and administrative buyer, the economic buyer and the supplier. The technical/administrative buyer - a public organization, ministry, local municipality or private company which is expected to receive the service - defines the terms of reference independently or in cooperation with the economic buyer - an international funding agency or organization. The supplier - the management consultancy firm - must establish good contacts and client relationships with the economic buyer and, in addition, must establish good relations with the client requesting the service - the technical and administrative buyer. This is the rule for the international project market. This market place is characterized by very strict rules and procedures for buying and selling services. The interaction process between supplier and client is very different from that in the other generic market for management consultancy services. Both demand and supply tend to be cast in rather standardized formats, and in this respect the international project market represents an important point of entry for firms that have acquired the basic skills but have not yet built up a substantial reputation.

The international project market has, in the post-Second World War period, been significantly influenced by the demand for projects carried out in developing countries. More recently, the economic transition in Central and Eastern Europe has generated a major new market for projects. These markets represent demand for services in a wide range of areas, including those of concern to both Governments and recently privatized industries. The funding for management consultancy in these countries came initially from Governments or international agencies, but there is a growing market for services that are financed directly by the customers and which tend to fall into the category of client interaction. Indeed, many companies say that they no longer actively seek projects funded by international financial institutions or Western donors.[2]

3. The core of management consultancy business: professional skills or client relationships?

Two different points of views are found among the practitioners of management consultancy regarding the basic model for providing services: the technical, functional or professional point of view on the one hand, and the client relationship point of view on the

other. The dichotomy between these two views corresponds roughly to the contrast between "expert-driven" and "methodology-driven" consultancy strategies.[3] The management consultancy industry may thus be viewed as a dichotomy between "trustworthy people capable of finding feasible solutions" or "solid technicians using the best and most efficient management tools within specific fields". Strategically, partners and management in management consultancy firms are faced with these two opposite views on their firms' services.

Because of the relatively low barriers to entry characterizing the management consultancy industry, which are due to the non-regulated nature of the industry, the relatively low capital needs, the modest economies of scale, and the high level of significance of client relationships and personal references, the industry's products are often defined simply by the consultant as a person. The core of an individual firm's success can thus be said to depend, to a great degree, upon the client relationships that each of its employees develops. In this sense, the most important assets of the typical management consultancy firm are the qualities and relationships of the people it employs.

Another approach to the business is to engage in the systematic development of new products and improvement of the quality of those already offered, enhancing the staff by the recruitment and intensive training of talented people, and improving their skills continuously with the support of advanced information systems and sharing of experience. This is the approach that is increasingly becoming the key to the competitiveness of large international management consultancy firms. Such types of firms, which frequently also include medium-sized firms in national markets, strive to build up brand-name reputation by continuous supervision of the quality of the services of the individual consultants. Product innovation, continuing education of employees and investments in information technology are all seen as increasingly vital means of securing a "non-personal" profile of each management consultancy firm. In other words, the professional skills shared by the employees of a particular "brand-name" firm serve to persuade the clients of a certain level of quality and effectiveness of services offered.

A conscious strategy aimed at product development has thus become increasingly vital to the competitiveness of major management consultancy firms. Although consultants among these firms reacted to a 1994 survey by the journal *Consultants News* by arguing that "we don't view ourselves as having products. We are more into delivering different approaches to our work with clients", the survey indicated that efforts were in progress to establish formal procedures for systematically assessing the quality of new products offered.[4] Several of the largest firms spent more than $100 million annually on research and development, and in some cases, senior partners or other executives were assigned to ensuring a uniform format for reporting and sharing practices.

B. Factors influencing tradability

One distinct aspect influencing the tradability of management consultancy products may be the degree to which the services delivered to the clients are concerned with material issues such as financial management, manufacturing, or information technology strategies (e.g. concerning choice of hardware and software). Consultancy related to such issues may be so tightly knit to technical opportunities and constraints that the best possible advice may be gathered from other parts of the world. Moreover, internationally sourced advice in relation to such solutions to material issues may be easy to implement in the any specific national market. This means that international transfer of methods, approaches and concepts adds value to the product a client receives. In many cases, language barriers do not exist within these fields, since

the client's professional staff and experts are already accustomed to the daily use of English or other international languages.

By contrast, other services such as human resource management are closely linked to national and firm-specific conditions. The opportunities for the production of services within these areas of management consulting by incorporating international approaches, concepts and experts are basically modest. The use of information technology in the production phase of this service is also moderate. Other services such as the implementation of new strategies, the implementation of information technology systems and the continuing education of staff in areas related to information technology may also possess the same characteristics.

"The moment of truth" in every service industry is, however, whether the client accepts and understands the services delivered. Typically, quite a lot of adaptation is needed with respect to local language, behaviour, business ethics, the spoken and unspoken rules of the game, management style, traditions within industrial relations, and so forth in order to deliver solutions and proposals that can be used by the client.

1. Technical factors

Technical problems with providing the elements of a service related to an assignment have become less important as factors influencing trade in services. For instance, technical barriers linked to hardware and software belong to the past. Standard set-ups for documents have been implemented, e.g. curricula vitae (CVs) are formulated in identical ways all over the world. In most of the international management consultancy companies, reports are written according to the same format and with reference to the same procedure, etc. Procedures for the different elements in client management are being standardized, with the implication that people other than the responsible project manager are able to understand what the process has been and results of the assignment.

These developments are based on mutual understanding among partners and employees in the companies and the technical possibilities opened up by the increased utilization of information technology. Together, these possibilities can form effective firm-specific advantages that can offset a relative lack of national responsiveness. Differences in local conditions and the continuing lack of divisibility in the creation of many management consultancy tasks are two of the most important barriers to trade in services. Modularization of management services into standard elements is a way of overcoming the latter barrier in particular. International management consultancy companies have tried to standardize services across both countries and industries in order to exploit economies of scale and scope and to adapt standard products to local clients' needs so as to increase the value delivered to the clients. Some elements in the services delivered to local clients require local adaptation, while others may be delivered by using standardized concepts etc. Modularization helps combine adapted elements with standardized elements of the total services delivered, so that the management consultancy firms may be able to reap economies of scale and scope, on the one hand, and to adapt the product to the individual client on the other hand.

While generalization is difficult, a few points stand out with respect to the elements of services that can be traded internationally as opposed to services which are not easily delivered internationally with the help of telecommunications. Initially, however, three main reasons for the huge investments in information technology in the large management consultancy firms must be mentioned. First of all, these technologies constitute a managerial tool for the international

partners of these transnational giants. Today, it is difficult to imagine how such big companies could be managed without the facilities of information technology. Second, in the management consultancy industry - as in other industries - exploitation of economies of scale and scope has become essential for a profitable business. As mentioned before, development of firm-specific methods, concepts, frameworks etc. is pertinent with respect to product differentiation and for the exploitation of economies of scale and scope. However, if the "toolbox" is not used all over the world, the exploitation is not satisfactory. Information technology promises to make this happen. Third, customization is essential in most assignments. Customization is still the most important barrier to the exploitation of economies of scale and scope. However, once generically consistent models, methods and approaches are developed, these tools may be relatively smoothly adapted to national cultures, firm-specific conditions and so forth.

International markets have far more significance for large management consultancy firms today than before. An ever-larger number of jobs are international and involve activities in a number of countries; moreover, national jobs are increasingly carried out by international project teams. In particular, international consultancy firms are able to draw upon worldwide expertise in the implementation of both international and national projects. An international firm structure can be introduced to accommodate this development, but without intensive use of information technology, this would hardly be possible.

Electronic mail has become one of the most important tools for internationalization of management services. The tradability of the services has been enhanced dramatically by this information technology tool. Information, data, reports, surveys, data sources and calculation facilities are now available to offices belonging to the same management consultancy firm across borders. Also, management information systems have been implemented to control the different offices.

Since clients have become more internationalized, the demand for business advice from an international perspective has also grown. Fact-finding, information transfer, international market supervision, comparative analyses and the like have become much easier to conduct with the help of electronic mail. No doubt, technical barriers still exist. Linkages to international databases, updating of information in these databases, and so forth may still give rise to daily problems for the management consultant. These barriers are, however, likely to be gradually eliminated in the near future.

The use of international expertise within a firm is facilitated by information technology. An expert within a specific field located in one country may be included in a project team in another country in order to increase the value for the client. However, it must be stressed that each time this happens, chargeable hours are moved from the office that obtained the assignment to another office. The dedication to fulfil objectives in a national market in terms of chargeable hours may cause a restricted use of the expertise found internationally in TNCs in the industry.

Summing up, electronic mail and other information technology facilities have provided good opportunities for international management consultancy firms to take advantage of expertise located in different countries around the world (table III.1). Technically, these opportunities can be exploited. However, as client relationships are so important in this industry, there are also distinct limits to the extent to which expertise, experiences, methods, reports and advice can be traded internationally.

2. Organizational and human factors: managing and controlling a people business

Since business advice has not yet been industrialized in the same way as more simple and repetitive services such as cleaning have been, and since management consultancy will probably never reach such a stage of mass production, standardized services are not marketed to any significant degree in the industry. Management consultants themselves naturally know the logic of the management consultancy business. Being the most important asset, these consultants are individually recruited, paid, supervised and so on. The industry is, so to speak, very "anarchic" in the sense that general business functions known from other industries, such as marketing, research and development (R&D), production and sales, are generally not applied in management consultancy. The individual management consultants - at least the experienced ones - are expected to develop, market, sell and produce after-sales services and provide them to the individual clients whom they service.[5] The greater the interaction with the client, the greater the customization of services and the higher the human capital content (highly educated management consultants), the stronger the potential relationships will be between contact personnel and the customer.

Table III.1. The most important uses of information technology tools in management consultancy

Type of information technology	Typical use (three most important applications)
E-mail	• Sending/receiving detailed communications • Communicating within a local team or among geographically dispersed teams • Collaboration on proposals
Groupware	• Collaboration on proposals • Client work or analysis • Communicating within a local team or among geographically dispersed teams
Fax	• Communicating among a geographically dispersed team • Client work or analysis • Sending/receiving detailed communications
Teleconferencing	• Client work or analysis • Communicating among a geographically dispersed team • Sending/receiving detailed communications
Videoconferencing	• Communicating among a geographically dispersed team • Collaboration on proposals • Client work or analysis

Source: Reimus, 1996.

The client is the key factor for management consultancy firms. Clients expect to buy customized business advice - and normally do not want to receive generic advice that could have been delivered all over the world. Nevertheless, in huge international consultancy firms, methods and concepts are developed in order to generate economies of scale and in order to attract new clients. Typically, these concepts are developed at the firms' headquarters - say, in the United Kingdom or the United States. Management methods, concepts, behaviour, management style and so forth are often implicitly based on practices in the specific home country and on the perspectives of large companies. From a professional point of view, this provides good opportunities to develop international concepts, compared with a situation where the concepts are based on experience in small or less known countries and companies.

There is nevertheless a question as to whether companies in other countries will accept premises and solutions from the home countries of large management consultancy firms. National responsiveness seems to be a very distinct and characteristic element of the markets for management consultancy services. In practical terms, this simply means that the interaction with the client must be in the specific languages, deliverables must be presented in this language and the methods used must be adapted to the client's needs and beliefs. These elements suggest serious constraints on the possibilities of using standardized tools and methods, internationally gathered information and references, international experts who are often situated in another country, and international reports.

Moreover, large management consultancy firms must motivate the individual management consultant to continue in the company - despite the potential which the individual consultant may have to work on his or her own for the clients with whom he or she has established a relationship of trust and mutual recognition. Accordingly, human resource management has a high priority in the management consultancy industry. Salaries, bonuses, fringe benefits and so forth are closely linked to the performance of the individual consultant, and this implies considerable variety among management consultants even in the same firm. This is perhaps the most important tool to encourage individual consultants to perform professionally and profitably in their interaction with the clients. Other factors of importance in motivating people and in maintaining their interest in the company are related to recruitment, continuing education, back-up facilities and career planning.

3. Certification, ethical guidelines and liability

The management consulting industry is, as mentioned earlier, subject to few - if any - official regulations. In contrast to accounting, there is no certification requirement for the conduct of management consulting services.[6] This means that there are no formal barriers to entry. Many retired business people set up small management consultancy firms to capitalize on their skills, experience and business relationships. No proofs of formal education, examinations or formal certification are needed to set up a management consultancy firm. One of the implications is that the ethics of the industry are not easily defined. In some countries, efforts are under way to establish some generally accepted ethical standards for the industry. These standards concern issues such as ethical guidelines for assignments which involve assessment of individual persons, in order to protect the basic legal rights of persons being assessed, and the establishment of institutions to uphold those standards.[7]

In many developed countries, associations of management consultancy firms are striving to establish some kind of certification for quality assurance of firms in the industry and of individual management consultants. But since these initiatives build upon voluntary

commitments, the impact is typically modest. However, quite a few firms have been active in adopting standards for quality assurance in accordance with ISO 9001 requirements.[8]

Given the nature of management consultancy services, which have primarily comprised the provision of independent advice, the consultant has seldom been forced to take responsibility for the results of following such advice. Liability has, accordingly, traditionally been a less serious issue for management consultants than it tends to be for accountants (who may be legally obliged to take responsibility for the results of an audit) and engineering design consultants (who may be accountable for the safety of a construction). However, with the growing emphasis on full involvement in the implementation of projects in the management consultancy industry, as epitomized by business re-engineering services or the design and implementation of management information systems, many management consulting firms are gradually being forced to take responsibility for the results of their activities. Further involvement in the later phases of a project is often regarded as a welcome challenge by management consultants, since it helps to build lasting relationships with clients. But such close association is often followed by contractual arrangements that impose various forms of liability, and occasionally ties remuneration to the effects which the consultant is able to achieve in terms of the new profitability of the client enterprise. In this way, a higher level of liability may serve to introduce competition in fees.

The consequences of increased liability for the tradability of management consultancy services are ambiguous. Liability may call for the consultant's greater local involvement and presence on-site; but it may just as well generate a greater need for stringent standards and quality assurance procedures, regardless of the provider's location, in the production of services in order to minimize or share the risks of providing those services.

4. Factors relating to assignment phases

A range of specific factors influence the tradability of management consulting services, by influencing in particular the need for local presence in each phase of production. These factors are discussed below utilizing the generic life cycle of an assignment as the point of departure, i.e. in the pre-sales phase, the sales or production phase and the after-sales phase. Although the need for local presence varies from product to product, some general trends with regard to local presence in different phases of production can be observed. In addition, there is scope for using information technology more or less intensively in the production and delivery of the services in the different phases, and the extent to which such technologies are useful will also differ among various phases.

a. Pre-sales phase

A large part of the marketing and pre-sales work carried out by management consultancy firms are concentrated on presenting general arguments, frameworks, methods, concepts and approaches developed by the firm in order to differentiate itself from competitors. The presentations made to the potential client can, in this phase of the cycle, be adapted to the special location or situation of the client only to a minor degree. These elements of presentation and, of course, references from clients are very important sales messages.

Apart from the professional contents of the pre-sale phase, this phase is dominated by presenting references from other clients, documentation of experience and specific CVs of the team of management consultants. Often a consultant firm will employ e-mail to ask affiliates to

transmit CVs, references and other material in the same language, format etc. for the specific presentation. Such technologies enable the international players to build international teams at short notice, much more rapidly than is usual among independent consultancy firms cooperating in networks. Thus, internationally operating companies will use information technology as an important firm-specific advantage in contrast to smaller and nationally oriented companies. Methods, concepts, frameworks and the like developed in other countries are easily collected across frontiers in order to prepare a presentation for a potential new client. If the client's industry is new to international practice, the advantage of being linked to an international network is obvious. Modern telecommunications facilities, together with a high level of discipline with respect to standardized formats for presenting information, enable individual management consultants to make very good and convincing presentations.

b. Sales/production phase

During the phase of production and sale of management consultancy services, there are fewer technical barriers for international cooperation and delivery of services than in the pre-sales phase. Nevertheless, there is a set of cultural, social, historical, behavioural and managerial barriers to taking full advantage of the facilities of advanced information technology in relation to the production of services in international management consultancy firms.

- Company culture may restrict the use of standardized methods. Differences may be related to size, ownership, traditions, management culture, trade unions and so forth in the different national environments. Nationally, cultural traditions may work in the same restricting manner. Language differences are obviously important barriers hampering the use of international methods, information, and staff. The widespread use of English as a business language in transnational firms has, however, made it much more easy and common to use this language for presentations and deliverables. Even medium-sized firms in countries dependent on the international market, such as the Scandinavian countries, have started to introduce English as a business language.

- Traditions stemming from the labour market, the general education of the employees and other factors may also constitute barriers to the international use of expertise and knowledge through the international information technology network. Managerial behaviour and style linked to the individual managers with whom the management consultants traditionally interact are also decisive for the extent to which standardized methods can be used.

- Finally, company culture within the international management consultancy companies may be very important as regards the extent to which products are traded. For instance, the company culture may encourage or discourage the use of consultants from offices in other countries. Many management consultants are evaluated on sales and chargeable hours. The first element does not present any serious barrier, but the second one may restrict the use of foreign consultants. Thus, good experts, methods, approaches and references from foreign offices abroad that would professionally be regarded as being able to add value to a project may not be used since that would also mean a reduction in the fees to local consultants and the local office.

c. After-sales phase

This phase resembles the pre-sales phase in the sense that it is characterized by the same motive from the point of view of the management consultancy firm - to undertake an assignment and expand sales. The after-sales phase is usually more productive as regards this objective, since it involves re-sale as opposed to first-time sale to the client. In this phase, the management consultant has the advantage that he or she is now capable of supplying information, suggestions, proposals etc. that are much more targeted to the specific interests of the client. This provides better opportunities to introduce the client to more information about internationally used concepts, approaches and so forth, and possibly also international colleagues with experience within the specific fields of interest to the client.

In this phase of the cycle, the client will typically be much more positively exposed to standardized concepts and approaches used internationally by the management consultancy firms. When solid relationships have been established between the consultant and the client in a particular assignment, consultants employed in international firms have much better chances of maintaining this relationship through creative use of the international network for transmitting information, references, concepts, approaches, CVs etc. of interest to the client.

C. Management consultancy products and their tradability

This section focuses on the tradability of individual management consulting service products falling into various categories. The interdisciplinary nature of consulting services implies that management consulting service products can be categorized in several different ways. The discussion here follows the general categories utilized by FEACO. The particular categories of major products, their sub-categories and specific services analysed are presented in table III.2. The same categorization is followed in annex 2, which presents a more detailed assessment of tradability for the products provided by management consultants. The analysis covers the following aspects related to tradability for each of the individual service products:

- Need for local presence
- Use of information technology
- Demand for local knowledge

Legal restrictions are not examined with respect to each product since they are usually not important, except for a general limitation with reference to visa requirements for consultants entering a foreign country.

1. General management

General management services are services related to the overall structure and management of enterprises, typically supplied to top management of large or medium-sized corporations. Clients are found predominantly within the private sector but may also come from the public sector. In large corporations these services can also be provided to particular departments, but in all cases they deal with problems related to general management rather than to specific functions such as production and marketing.

Table III.2. Main groups of management products

Product categories	Specific services
General management	• Diagnostic survey • Corporate strategy • Structures and systems • Corporate culture and management style • Innovation and entrepreneurship
Financial and administrative systems	• Financial appraisal • Working capital and liquidity management • Mergers and acquisitions • Capital investment analysis • Accounting systems and budgetary control
Marketing consultancy	• Marketing strategy • Implementation of marketing activities • Market research
Production and services management	• Product design • Production and organization • Quality control
Human resources	• Human resource planning • Recruitment and selection • Human resource development
Information technology and systems	• Advice on purchase of software and hardware • Adaptation of software products • Development of new software • Outsourcing
Economic studies	
Ecology and environmental issues	• Waste management and pollution • Regulatory issues • Working environment and safety
Project management	

Source: Based on annex 2 and other information obtained from industry experts.

Information technology is, in general, not essential for these services, although electronic databases are used for benchmarking analyses and for information retrieval. Interviews and other types of on-site observations are far more important and, therefore, the consultant needs to spend much of the time on the company's premises; this limits tradability (table III.3). Telecommunication services cannot be used to replace the local presence of the consultant, but back-office activities facilitating the performance of consultants working in the field can be located at any distance from the customer. Intensive knowledge of market conditions and other environmental factors is frequently important, but this knowledge will often be of an international nature and local knowledge is often of secondary importance. This leaves room for use of international consultants, especially when serving large, internationally oriented corporations.

2. Financial and administrative systems

This type of service is mainly supplied to financial departments, but general management may also be involved. There is no clear distinction between financial and administrative systems, but management services concentrate on the management implications of financial data rather than on how the data are produced.

Table III.3. Tradability of general management services

Major product	Service components	Tradability
General management	Diagnostic survey Corporate strategy Structures and systems	Some
	Corporate culture and management style Innovation and entrepreneurship	Poor

Source: Based on annex 2 and other information obtained from industry experts.

Information technology is used for financial analyses and information retrieval, but the consultant's skill and knowledge of financial markets and regulation are more important than electronic calculations. Intensive knowledge regarding the client's operations and priorities is essential, but continuous local presence is not a major requirement. As the expertise required is often related to international, rather than local, financial markets, the tradability of this type of service is quite good. For services related to mergers and acquisitions, or accounting systems and budgetary control, trade is more difficult as more intensive knowledge of the client is necessary (table III.4).

Table III.4. Tradability of financial and administrative systems consultancy

Major product	Service components	Tradability
Financial and administrative systems	Financial appraisal Working capital and liquidity management Capital structure and financial markets	Good
	Mergers and acquisitions	Fair
	Capital investment analysis	Good
	Accounting systems and budgetary control	Fair

Source: Based on annex 2 and other information obtained from industry experts.

3. Marketing consultancy

Marketing consultancy services are mostly provided to sales and marketing departments of firms. These services are not typical management consultancy services, and marketing is often considered to be an industry on its own. Market analyses and other services within this field are offered by management consultants often in competition with business advisers specializing in this specific field. One area where management consulting services have had a special advantage is marketing information systems. Yet, to a considerable extent, marketing consultancy involves some of the typical management disciplines such as strategy and organization, and this product will probably continue to be in the range of services offered.

The need for local presence depends on the specific service to be rendered. Formulation of a marketing strategy for a client necessitates substantial knowledge of all aspects of the client's capabilities - the organization of production at the firm, the scope and nature of the existing customer base, etc. Implementation of marketing strategies already formulated, however, involves interaction with the client's marketing department, while interaction with other departments will be limited. Much of the simpler types of market research can, in theory, be carried out without any knowledge of the client at all. The consultant merely has to be acquainted with the product to be marketed, and can utilize general data on national and international demand. In many respects, market research appears to offer the best possibilities for trade, since local presence and detailed knowledge of the client are seldom needed. Simple market surveys can be standardized and undertaken on the basis of data available at a distance from the client and from special databases at the consultant's location (table III.5).

Table III.5. Tradability of marketing consultancy

Major product	Service components	Tradability
Marketing consultancy	Marketing strategy	Fair
	Implementation of marketing activities	Some
	Market research	Good

Source: Based on annex 2 and other information obtained from industry experts.

4. Production and services management

Production and services management relates primarily to optimizing the management of R&D and to improving the efficiency of production. This service is also offered by engineering consultants.

The services in this category are mainly supplied to the private manufacturing sector but some of the methods and tools can be also applied to other sectors - the public sector, service industries such as banking and finance, and so forth. Rationalization, optimization, and minimization of costs are some key concepts underlying these services. Product design is a relatively small sub-category that also includes the application of new technologies etc. Quality

control and quality certification have grown dramatically in importance in recent years. Typically, manufacturing companies have been the main customers for this product, but the public sector and other sectors have grown into important markets as well.

Apart from product design, which is mainly an engineering service, the prospects for trade for services in this category are poor. Both production methods and organization and quality control demand intensive knowledge of the production process at a particular client's facility. However, telecommunications services can be an important tool for retrieval of information about other clients with a similar production structure, for example in the form of the "best practice" databases established by many large management consultancy firms. Thus electronic services enable the consultant to supplement his or her own knowledge with experience acquired by other consultants. In addition, development of concepts and general tools can be done at distance and provided to the consultant at the location by the use of telecommunications (table III.6).

5. Services related to human resources

This group of service products is one of the most important for management consultants, with clients coming from all kinds of businesses, including the public sector. Various specific services within the area include human resource planning for organizations, recruitment and headhunting, teaching and continuing education.

Table III.6. Tradability of production and services management

Major product	Service components	Tradability
Production and services management	Product design	Good
	Production methods and organization Quality control	Poor

Source: Based on annex 2 and other information obtained from industry experts.

Human resource planning relates to planning for all phases in the career development of personnel: job description, recruitment, training and promotion. These services are most often required by a personnel department, but job description and recruitment of managerial staff will generally also involve the general management. Personal communication plays a key role, and local presence is absolutely necessary in most phases of human resource planning. Some general concepts and guidelines for performance appraisal and training programmes can be developed at distance, but most of the work demands intensive knowledge of both the individuals involved and the company culture of the client. Therefore, consultancy services related to human resources are probably the least tradable category of management services. The only service in which a type of trade may be involved is recruitment of specialized expertise and managers on the international job market, with the involvement of an international management firm or manpower bureau (table III.7).

Table III.7. Tradability of human resources services

Major product	Service components	Tradability
Human resources services	Human resource planning Recruitment and selection Human resource development	Poor

Source: Based on annex 2 and other information obtained from industry experts.

6. Information technology and systems

Services related to information technology and systems are probably one of the fastest growing categories of management consultancy services. In particular, the big international accounting firms have expanded substantially on the basis of this market. They have tended to concentrate on managerial and administrative systems, however, while systems related to production are often provided by engineering consultancy firms. Software houses and other computer firms are naturally very active in this market as well.

Clients for these services are found in all segments of society. The services encompass a wide range of products, including rendering advice to clients with respect to purchasing hardware and/or software, the implementation of new systems, the training of staff in using new systems, and the development of customized, specialized electronic data processing systems.

Assistance in the choice or development of information technology and systems is also a general service in the sense that many of the other management consultancy services are more or less connected with information technology. This is especially true for financial management consultancy and manufacturing consultancy, and in most cases other services offered by management consultancy firms will also include some inputs of information technology.

Local knowledge required for rendering these services is limited, and this is conducive to their overall tradability (table III.8). Knowledge regarding the clients' organization and working routines is necessary, but, and especially in the case of new software and outsourcing, most of the activities are back-office activities which can be carried out at distance from the client. Adaptation and installation of existing software products can, in theory, be done at distance, although as a rule these activities require local presence; this requires on-line access to the client's computer network and security may be a problem in this respect.

Outsourcing of various activities from the client, such as accounting and payroll systems, is one important option often considered by consultants, but this option involves transmission of considerable amounts of data. Therefore, availability of a reliable telecommunications line is imperative. Moreover, the costs of transmission play an important role for trade in this service. If sensitive data are involved, security will assume paramount importance for this service.

Table III.8. Tradability of information technology and systems consultancy

Major product	Service components	Tradability
Information technology and systems	Advice on purchase of software and hardware Development of new software Outsourcing Product design	Good
	Adaptation of software products	Fair

Source: Based on annex 2 and other information obtained from industry experts.

7. Economic studies

This relatively small category of services consists of advice to clients in both private and public sectors. Typical examples of consulting products are economic assessments for public sector entities, where both macro- and microeconomic policies may be evaluated and suggestions for improvement presented. This type of service is often traded in the international project market, where a number of consultancy firms may be invited to bid for the same project.

The scope for tradability depends, to a large degree, on the type of advice required by a client. In general, tradability is good (table III.9), although some local presence is often needed especially in the initial phase. Studies are often carried out by international project teams linked together by electronic communication systems. In this way, a consultancy firm can rely on local information and local expertise from a wide range of countries, without the necessary movement of personnel.

Table III.9. Tradability of economic studies

Major product	Service components	Tradability
Economic studies	Economic studies	Good

Source: Based on annex 2 and other information obtained from industry experts.

8. Services related to ecology and environmental issues

This service category is relatively new and until now the turnover within the field has been modest. Some consultancy firms, however, believe that this is a very promising future market. The services are interdisciplinary, with both accounting and engineering firms also being active in this market. Accountants will often be engaged in providing attestation of waste and energy accounts; for many engineering consultancy firms, the market primarily focuses on the introduction of cleaner technology. It is still uncertain how this market will develop and which disciplines will be involved. However, there is clearly room for consulting on the managerial aspects of ecology and environmental issues.

In the areas of waste management and pollution, services include advice on cleaner production technologies and cleaning of waste. The tradability of this service is quite promising, as it involves advice on new management systems not developed for a specific client. However, subsequent implementation of such systems will involve local presence (table III.10).

Advice on regulatory issues related to the environment does not require local presence. However, demand for local knowledge limits the overall tradability of such advisory services. Working environment and safety represent a specific area of consulting where the production of services requires intensive local knowledge. In particular, knowledge of the organization of the client's production system is necessary and, therefore, the overall tradability is rather poor.

Table III.10. Tradability of consultancy on ecology and environmental issues

Major product	Service components	Tradability
Services related to ecology and environmental issues	Waste and pollution management	Good
	Regulatory environmental issues Working environment and safety	Poor

Source: Based on annex 2 and other information obtained from industry experts.

9. Project management

Public organizations and private companies may often be fully aware of a management problem and may devise a project that includes a strategy to deal with it. But the human resources required to supervise and manage the project may be lacking. Therefore, a management consultant may be hired to carry out the project. This type of service is sold to all kinds of sectors and clients. Management for hire is a special variety of this service: in this case, a management consultant acts as an interim manager until a solution has been found by the client.

Local presence is absolutely necessary, but the need for local knowledge is sometimes limited. Often, the consultant is hired precisely because he or she is independent of local structures of power or other vested interests. In this case, the international character of a consultant will frequently be regarded as the special advantage that the client is looking for (table III.11).

Table III.11. Tradability of project management services

Major product	Service components	Tradability
Project management	Project management	Fair

Source: Based on annex 2 and other information obtained from industry experts.

D. Impact of tradability on modes of internationalization

The internationalization motive of firms in the management consulting industry is best characterized by the words “following your customer”. When clients' business units have expanded internationally, those of advisers have done the same. In general, such expansion has taken place via the setting up of affiliated or local offices. This pattern has been common to business services in general: banking, public relations and communication, auditing services and management consultancy. The levels of tradability for some management consultancy products indicated in the preceding analysis suggest, however, that such patterns may change in the future.

1. The relative importance of trade and FDI

Cross-border trade or direct exports and imports of management consultancy services are relatively low, judging from data on the share of exports in revenue for management consultants. For example, according to data from the FEACO, exports constituted only a small part of the turnover in European management consultancy firms in 1990.[9] More recent data for the United States suggest, however, that the importance of cross-border sales in total international transactions in management services may be increasing (table III.12). Trade seems to account for an increasingly higher proportion of international transactions on both the inward and outward sides, noticeably the former. The figures have to be treated cautiously, however, particularly on the outward side, where they do not distinguish between accounting and management services.

Table III.12. International transactions in management consultancy services: United States, 1986-1999 (Millions of dollars and percentage)

Year	Imports (A)	Sales of foreign affiliates in the United States [a] (B)	Ratio A/B	Exports (C)	Sales by United States affiliates abroad [b] (D)	Ratio C/D
1986	60	541	11.1	306	2 287	13.4
1990	135	526	25.7	354	...	...
1995	465	480	96.9	1 489	8 829	16.9
1998	888	451	196.9	1 841	10 337	17.8
1999	867	...	...	1 910	...	...

Sources: United States Department of Commerce, Survey of Current Business, September 1994, September 1995 and October 2000; Mann and Brokenbaugh, 2000.

[a] Sales of management, scientific and technical consulting services to United States persons by foreign transnational corporations through their non-bank majority-owned foreign affiliates (North American Industry Classification System-based industry of affiliate).

[b] Sales of accounting, research, management and related services to foreign persons by United States transnational corporations through their non-bank majority-owned foreign affiliates (Standard Industry Classification-based industry of affiliate).

The most widespread mode of internationalization within the industry has been and continues to be FDI. One of the main competitive advantages of the big international accounting firms has been their presence all over the world. Typically, these firms are each located in more

than 100 countries and the number of offices is often four to seven times higher. Other firms in the market are also very active with respect to setting up foreign offices.

The increased international demand for management consulting services noted earlier has resulted primarily in large firms increasingly targeting foreign markets, combining cross-border trade with local representation through either the establishment of a local affiliate or the temporary movement of staff to the country of the client. Increased tradability of management consultancy products has, however, resulted in a new role being assigned to functional departments in large firms, in the transformation of project organization for many assignments, and, in general, in the new prominence of international "best practice" databases as a competitive asset. In other words, the tradability of services has tended to lead to organizational changes that strengthen international linkages for major activities among different national offices within large firms. Ultimately, these changes have significant implications for the role and activities of different groups of management consultancy firms; they are discussed in more detail below.

2. Functional departments and emerging "centres of excellence"

The major firms in the industry seek to strengthen the internationalization of their services through, for example, a recruitment policy that establishes common standards and levels of competence, the development of common concepts and methodologies, and the establishment of functional departments. To recruit talented young business administration graduates from universities is the most widely acknowledged approach to enhancing the standards of services offered. Another way is to attract experienced management consultants from other firms or to attract managers from other industries. A third mechanism is to cooperate with scientists and professors from universities. Lastly, an important tendency during recent years among the Big Six has been to establish regional centres of excellence in order to strengthen the professional and technical expertise in the companies. Many projects carried out by these companies include an international division of labour that relies heavily on the assistance of a centre of excellence. Thus, for example, in one major management consulting firm, while the local office at the location of a potential customer assumes much of the responsibility for initial contact with a customer and for the preparation of proposals/bids, including presentation of proposals and project implementation, a centre of excellence assigned to that field plays an important role in the preparation of the project proposal in cooperation with the local office, development of the overall project design, development of new software and information technology systems if required, and quality control and project evaluation.[10]

The traditional way to develop concepts, tools and methods in management consulting has been to extract ideas from the literature, and to pool experience gathered through assignments for customers. The potential for sharing experience and accumulating knowledge within specific areas of competence is changing with the application of information technology, and this has been the most important argument for organizing management consultancy in functional departments. This, it is argued, also serves as a good and solid basis for on-the-job training for new and inexperienced management consultants.

The functional departments also provide a basis for the development of products, concepts, methods and the like to be marketed to the clients in the domestic and international markets. The development of new products in the form of concepts and methods is becoming increasingly popular in management consultancies, although it is not clear whether all of these new products have actually achieved results. However, it should be recognized that supplying a specific service to the market may be an important "door opener" with regard to attracting new

clients. Thus, marketing considerations may constitute an important reason for organizing management consultancy firms in functional departments.

3. Project organization

The majority of assignments for clients are nevertheless organized through projects, rather than via functional departments. Assignments for clients build on expertise, and often, even more importantly, on established relationships of trust and reputation. The focus on clients means that the individual management consultant or team of management consultants organize their efforts in accordance with the requirements of the client. Project organization is therefore the "rule of the game" for the great majority of activities, regardless of whether they are undertaken by a management consultant working on his or her own for the client, or whether a project team has been established to supply the services.

When an assignment requires a team, this team is typically led by a senior employee - a partner, a manager or a senior consultant. Since the client is the key focus in this industry, it is often a senior professional that has already developed the client relationship who is in charge of a specific assignment. Other members of the team may be picked from the functional departments that are of relevance to a specific assignment. Junior consultants are often included in the teams to carry out the information gathering and other time-consuming tasks. The demands of the logic of this type of project organization led by senior professionals may increase coordination costs in a service firm if it is organized purely in functional departments.

4. "Best practice" database systems

One of the important and powerful trends within the management consultancy industry is the expansion of the coverage and scope of networks designed to identify and share best practices. A survey carried out in 1995 indicated that about 75 per cent of a sample of more than 40 firms among United States-based management consultancies reported that they followed a procedure for capturing best practices, sharing information from one project to another and documenting innovative new ways of solving client problems. In most instances, these efforts were largely informal, for example identifying experts internally for consultation, and less than half of the firms surveyed had an active database in place (Reimus, 1996).

For many of the firms surveyed, the transition to new systems of sharing information was by no means without difficulties. Over one third of the executives in the survey identified as their number one challenge the devising of new ways to convince and motivate their consultants to share willingly and consistently more information, knowledge, and insights with each other. Other widely cited challenges included maintaining the currency, usefulness and quality of information, ensuring adequate security and confidentiality for their databases, and providing for adequate standardization, consistency and timeliness insofar as data management, storage, and retrieval are concerned. Overall, it appears that for many employees it is not easy to get accustomed to utilizing new technology and more formalized systems. This may provide an advantage for firms that are relatively young or which emphasize the recruitment of young graduates, who are far more accustomed to integrating the use of computer networks and databases in their work.

5. Strategic management consultancy groups and the impact of tradability

The market for management consultancy services includes firms of different types, and the effects of increased tradability of the service products vary among the different types. Since contact with clients is so important to the industry, one important strategic dimension of the international activities of management consultancy is presence in the market, i.e. establishment in the form of an affiliate or a subsidiary. International activities most often begin either with a temporary movement of consultants abroad or by some sort of cooperation (e.g. a merger) with a local consultancy. When contacts are then established and consulting activities initiated, the need for international trade will often appear. For a number of firms that have entered the international market, the initial stage has been to serve national markets through partnerships with local affiliates of international consulting firms acting almost as independent national consultancies serving their own host national markets. However, these firms have now reached a stage where they have begun to trade among various partnerships or affiliates.

This section briefly examines the role of different types of firms in the management consultancy industry, and discusses the effects of tradability on each type of firm and its international activities.

a. Local, nationally oriented firms

This group is by far the most important in terms of number of firms, but not in terms of turnover. Typically, the firms are small - perhaps only one person or a very limited number of consultants. These firms virtually never undertake international assignments. The services vary and the clients can be small companies and institutions, as well as large companies that may use this type of management consultancy because of low price or specialized knowledge. These consultancy companies also include part-time companies run by teachers and researchers from universities, technical universities, business schools and the like. Retired business managers are also participants in this market.

Solid knowledge of local needs, established client relationships and trust between sellers and buyers of services are important characteristics of the market. In general, because of their limited participation in international markets, the increased tradability of management consultancy services does not significantly influence this group of firms.

b. Local firms exploiting the international project market

In many ways, these firms resemble firms in the first group. The main difference is that these firms have entered the international project market via a specific institution or programme - e.g. assignments for the Phare programme of the European Union, or projects financed by the World Bank or the United Nations Development Programme (UNDP). Although the tasks of assignments for these international institutions and the projects carried out for bilateral development aid may be very similar, they would be classified differently. By definition, assignments for the United Nations or the World Bank provide international turnover, whereas earnings from bilateral technical assistance contracts that management consultancy firms enter into with their own Governments represent domestic earnings.

Typically, the assignments involve experts or consultants working in the country where the project beneficiary is located. In some of the contracts, the focus of the assignment is administrative functions, while in others expertise is needed in order to fulfil the terms of

reference. Arm's length trade or delivery of service inputs facilitating the consultant's work in the field may also be involved. Management consultancy firms working intensively in the international project markets often establish temporary affiliates in the markets where the services are delivered. This mechanism is well known from engineering consultancy, particularly in countries where engineering consultants have assignments extending over several years. The subsidiary or affiliate is usually established for the purpose of being the key administrative reference point for the management of the project. This may be the case either because it is stated in the terms of reference or because it is found convenient for the service producer. When the assignment is finalized, the presence in the market is frequently terminated as well.

Access to advanced communication facilities may reduce the need to establish such affiliates, as those facilities enable more supporting functions to be performed from home. This adds to the flexibility of the team and reduces costs. But it may also tend to reduce the potential for technology transfer during the course of the project. In projects carried out for international organizations transfer of technology is frequently one of the project objectives, and the client must be aware of this aspect of the impact of tradability.

c. Transnational management consultancy and accounting firms serving national markets

This group includes the big international accounting firms. Because of the nature of the other services offered by many of these firms - accounting, audit and tax - they already have local representation in many countries in order to be able to deliver high-quality services in accordance with local legislative and regulative regimes. Each of the affiliates or offices typically has the local national market as the target market, but strives to take advantage of shared methods and terminology. Only occasionally are active international assignments managed and controlled from these offices. The logic is that national professional staff is the best advisers to the clients locally, but not necessarily well qualified for international project supervision. Essentially, each office of a company among the big firms has a national market and only a modest amount of international turnover. However, since these companies consolidate their accounts at their headquarters - typically in the United Kingdom or in the United States - each of them has a high ratio of international to national turnover.

As discussed in chapter II, the transnational organizational structure of the big international accounting firms has evolved in such a way that, on the one hand, each of the national offices is managed autonomously by local partners while, on the other hand, all the offices are tightly knit to the international network. Information technology is the tool supporting this international network. Although this particular structure does not necessarily imply international trade as such, the large companies are gradually developing from loose networks of independent partners to become integrated corporations, with a more centralized structure, where more and more tasks are shared among affiliates. The establishment of centres of excellence, discussed above, is an example of this: expertise in a certain area is concentrated in a few affiliates, each of which covers the market in a large number of countries within this specific field. In this sense they become more like the internationally organized management consultancies discussed below.

d. International management consultancy firms serving both national markets and international companies

Among these firms are well-known and prestigious ones such as McKinsey & Company, Mercer Consulting Group, Booz-Allen & Hamilton, PA Consulting Group, Arthur D. Little and others. These firms have significantly fewer establishments than the big international accounting firms, and some of the affiliates established by them function rather as large autonomous establishments, whereas other affiliates can be characterized as working offices for internationally travelling teams of consultants.

The clients of these firms are often very large companies requiring prestigious advice; often, one of the marketing arguments motivating clients is that it is an international - rather than a national - consultancy firm that has been hired. These consultancy firms literally "follow their client" from one assignment to the next, and the employees are often not related to a national office but to a region such as Scandinavia or Northern Europe. Therefore, the firms use the temporary movement of the service providers as a mode of delivery intensively, but quite often with major inputs by communication from the consultants' home office. In this sense, cross-border trade is frequently incorporated into a project.

6. Structural changes in the management consultancy industry

While turnover in the management consultancy depends heavily on economic conditions, some structural changes occur independently of business conditions. In the 1960s and 1970s, the market for management consultancy services was a sellers' market. The power of the clients was small, whereas many of the management consultants - typically academics from technical universities and business schools - relied on their academic background to introduce new management techniques such as strategic planning. These services were in great demand among the senior executives in manufacturing firms that were gradually entering the international markets.

This situation has, however, changed completely. The market, especially in Europe and the United States, has tended to become a buyers' market. Most managers and members of boards of directors already have an academic background that frequently includes business management training and experience. This means that many more demands are placed on the management consultants; they can, practically speaking, no longer rely merely on the presentation of sheets for overhead projectors based on concepts extracted from the most recent management literature, which the clients may also have read. The consequence is, among other things, that many assignments require teamwork and access to a much wider spectrum of skills and experience. One significant implication of this is that much more pressure is exerted on management consultancy firms to upgrade and specialize their staff. Upgrading the individual consultants is a very important - but also very difficult - task to accomplish in most management consultancy firms. At the same time, new markets or market segments for management advice will emerge. To mention one example, health care and health management systems emerged in the 1990s as an important market for management consultancy firms today, although it hardly existed 10 years before. Such new markets will demand from the firms in this industry more specialized, sophisticated and in-depth knowledge, and those management consultancy firms that are able to meet these new requirements for skills and experience by means of sharing experience across borders seem likely to have a distinct competitive advantage.

Structurally, such tendencies would imply that the largest firms in the industry will continue to grow even larger. At the same time, small firms will have good chances for expanding their business thanks to niche strategies and/or relatively low fee rates. In this scenario, however, the medium-sized companies will be squeezed in the competition. The large management consultancy companies will continue to expand their international activities whereas the small, niche-oriented ones will in most cases keep their national market perspective.

Notes

1. For the estimate for 1992, see *Consultants News*, July/August 1994, p. 1. For 1995, see highlights of "The CN 40 Special Report", *Consultants News* homepage at http://www.kennedypub.com/cn40.html.
2. For example, "we much prefer to be funded directly by clients. The real test of whether a client needs and wants our services is if they are prepared to pay for them", says Mr. Stephan Fohldes, head of the Central European office of Coba, a United Kingdom management consultancy, in Budapest (quoted from *Financial Times Supplement*, 12 September 1995, p. 4).
3. See the results of a 1995 survey carried out by Reimus (1996).
4. See Reimus, "How Consulting Firms Develop New Services", *Consultants News*, April 1994, pp. 1-4.
5. See Bateson (1992, p. 98) for a depiction of the relationships between customers, contact personnel and the firm in services, and the perceived control conflicts involved. As emphasized by Bateson, it is important for professional service firms that information is given to consumers during the service experience in order to increase their sense that they are in control and that they know what will happen next. This would seem to be particularly relevant for management consultancy.
6. See section on management consultancy in European Commission (1996).
7. Discussion of such ethical guidelines was held, for example, in 1996 within the framework of the Danish Association of Management Consultants (Foreningen af Management Konsulenter).
8. In the European Union, associations of management consultancies have embarked on ISO 9001 certification programmes for their members. Programmes are also in place to professionalize management consulting and create demand for and recognition of the profession. By the mid-1990s, nearly 20 per cent of all consultancies in Europe were certified and over 75 per cent had quality management programmes in place. See European Commission (1996).
9. See Vogler-Ludwig et al. (1993). The share of exports in turnover in 1990 for management consultancy firms was 16 per cent for France, 8 per cent for Germany, 1 per cent for Italy, 10 per cent for the Netherlands, 5 per cent for Spain and 10 per cent for the United Kingdom.
10. Based on information obtained through interviews with PricewaterhouseCoopers.

IV. ENGINEERING CONSULTANCY SERVICES

Engineering consultancy is an important professional service industry that has flourished during the twentieth century and continues to do so. Most major firms in this industry started out as suppliers to the construction industry and growth in sales of engineering design services was associated in particular with post-Second World War reconstruction. The economic growth experienced after that period and the expansion of world trade created a boom in construction of public infrastructure and private investments which became especially significant for the overseas expansion of major engineering consulting firms in the United States and Europe.

For various historical reasons engineering consultancy has been among the first professions to provide services abroad. On the one hand, many engineering consultants have followed their main customers abroad, particularly when large United States and European transnational building construction enterprises entered overseas markets in the post-war period. The Middle Eastern markets for engineering services constituted one of the primary driving forces behind overseas expansion of the engineering consultancy firms in the 1960s and 1970s and have remained significant. More recently, a rapidly growing world market for engineering design services related to the environment (waste treatment plants, emission control, energy-efficient building design, etc.) is encouraging some engineering consultancy firms to expand their international marketing efforts. On the other hand, the growth of international development aid financed by international organizations, national agencies or multilateral lending institutions has also provided an important market for engineering consultancy firms. In addition, the experience that engineering consultants gather while working for such agencies often leads to further contracts for the sale of services overseas.

It is difficult to delimit engineering consultancy services, particularly in relation to the professional service industries of construction and architectural services. It is important to note, however, that there has been a significant drift of the product categories offered by engineering consultancies. Increasingly, engineering design firms have been forced to move into areas that are related to construction, for example adopting the design-and-build concept where engineering firms assume greater responsibility for the management of construction projects.

This chapter begins with an overview of major market trends in the industry and the different factors that influence the internationalization of large, as well as smaller, firms in the industry. It then reviews the main products and business areas of engineering consulting firms and analyses the tradability of various products, given the current factors influencing the production and delivery of these services. The potential impact of tradability on FDI and the international provision of services are then examined on the basis of data with respect to trends in trade and affiliates on the one hand, and the factors that continue to motivate FDI and other modes of TNC activity in engineering consultancy on the other.

A. Overview of the industry

The markets for engineering consultancy services are primarily related to the growth of manufacturing industries and construction. Business in the industry tends to fluctuate with cycles of growth and stagnation in manufacturing in major markets such as the United States and Europe. Moreover, expansion or decline of public spending on infrastructure such as transportation or environmental facilities is also important for generating demand for engineering consultancy products. The size of the world market for engineering consultancy products is difficult to estimate. The total worldwide market would include both the sum of billings by

engineering design firms in local markets and international billings. The demand for foreign engineering consultancy services remains a fraction of the domestic demand in most countries.

There are few estimates of the world market for these services. Since much of the revenue of engineering consultants is related to construction projects, a useful indicator is the estimate that the world construction market grew to $3.41 trillion in 1999.[1] According to industry estimates, the relative cost of engineering design services as a component of total construction expenditures ranges between 5 and 30 per cent of total construction investment, depending on the industry involved (table IV.1). The world market for engineering consulting services could therefore be estimated to be between $170 billion and $1 trillion. However, statistics compiled through annual surveys conducted by the magazine *Engineering News Record* (ENR) show that the total value of gross fees billed for foreign services of the top 200 international design firms grew from $3.1 billion in 1981 to $17.0 billion in 1998 and $17.2 billion in 1999, with total revenues amounting to $44 billion,[2] thus rendering the above estimate too high. The latter figure is supported by a report of the Swedish Federation of Architects and Consulting Engineers (SFACE), which estimates the combined total turnover (domestic and foreign) of the world's top 100 consulting engineering and architectural groups in 1999-2000 at $31 billion (SFACE, 2000, pp. 32-33).

Table IV.1. Engineering design as a component of investments in major industry groups

Sector	Engineering services as percentage of investments
Infrastructure and construction	5-10
Utilities (water, waste)	20
Oil and gas	10-30
Shipbuilding	5-10
Power generation	20

Source: Estimates provided by industry experts.

In the following discussion, a short description is given of some key characteristics of the industry groups in which consulting engineering services and products are used. For each group the level of internationalization, the use of national or international codes and traditions, the number of operators and their ownership are characterized. Furthermore, the types of contracts that are commonly used for the procurement of engineering consultancy services are discussed. In many respects, these parameters will also have a certain influence on the tradability of the services used by the industry group, although they may hardly change the basic technical tradability of individual service products significantly.

Table IV.2 provides an illustration of the typical situation for each group with respect to the level of internationalization, the use of national and international codes, the number of operators and their ownership, on a worldwide basis. It should be noted, however, that there are considerable differences between countries with regard to the structure of various industry groups and their levels of internationalization. In addition, rapid changes are taking place in some industries with respect to all of the four parameters shown in the table, not least because of the impacts of recent policies encouraging privatization.

Table IV.2. Characteristics of various industry groups served by engineering consultants

Sector	Level of inter-nationalization	Use of national codes	Number and size of operators	Ownership of operators
Transportation	Medium	National	Few	Various
Building	Low	National	Many	Various
Utilities (water, waste, gas etc.)	Low	National	Many	Various
Manufacturing industries	Medium	National	Many	Private
Oil and gas, mining	High	International	Few	Various
Aircraft, space	High	International	Few	Various
Shipbuilding	High	International	Few	Private
Defence	Medium	International	Few	Public
Telecommuni-cations	Medium	International	Few	Various
Electric power	Medium	International	Few	Various
Health	Low	National	Many	Public
Environment	Medium	National	Many	Public

Source: Interviews with industry experts.

The level of internationalization of the different industry groups is based on historical and technical/scientific developments, combined with various economic and policy-related developments. A classic example is that of the oil and gas industry, which developed internationally at the beginning of the century, based on privately owned international companies, the "seven sisters". This development was reversed when large State-owned oil companies took over as the dominating oil companies in a number of regions of the world, such as West Asia, Latin America, the Russian Federation and Norway. In contrast, industries traditionally dominated by public ownership, such as telecommunication, transportation, utilities, power and health services, have experienced a movement towards privatization and internationalization in many regions of the world. The internationalization occurring in the sectors that engineering consultancy firms serve is also a major influence, since consulting engineers still tend to follow their domestic clients abroad.

The relationship between a consulting engineering company, the client (or operator) and the contractors depends on the sectors in which the consultants work, the stage of the project and different national traditions. Some of the most common contract types are the following:

- ***Management assistance contract (MAC)***. Under this type of contract, the engineering consultant typically supplies individual professionals to the organization of the client. The client will normally be responsible for the economic and financial aspects of this transfer.

- ***Engineering contract (E)***. This is the traditional type of contract in which the engineering consultant carries out the design. The contract can be based on an account or fixed price, or on a percentage of the construction cost, or a combination of these, depending on the actual project. In recent years, new contracts have usually been drawn up in a way that provides the engineering consultant with some incentives to develop cheap solutions.

- ***Engineering and procurement contract (EP)***. In this type of contract, the engineering consultant is responsible not only for the design but also for the procurement. This type of contract is not used much because of the size of capital requirements, which may exceed the financial capabilities of many engineering consultancy firms.

- ***Engineering, procurement and construction contract (EPC).*** This type of contract is often used in complex projects in which many different sub-contractors are working; with this contract, the responsibility for coordination will no longer concern the client. The engineering consultant will normally be hired by the contractor, or the job will be carried out by some of the engineering contractors.

- ***Engineering, procurement, construction and installation (EPCI)***. This type of contract is a variant of the previous one.

For the time being, there seems to be a trend towards integration of engineering and construction, the "design-build" phenomenon. This trend has been particularly prominent for highly capital-intensive industries such as oil and gas, or electric power, where contracts are frequently awarded to engineering contractors on an EPC basis. The benefit of this approach is that it may reduce the total construction time and that communication between the client and various firms employed on a particular job becomes less extensive. Integration also provides scope for improvement of the quality of design since the engineering consultant can work more closely with the contractor. However, with the design-build approach, there is a risk that the people working on the engineering design and supervision of construction work are not sufficiently independent of the interests of the contractor. The integration of design, construction and supervision may also jeopardize maintenance of high levels of quality even where advanced quality management procedures are used.

Table IV.1 above provides estimates of the relative cost of engineering design services as a component of the total investment in various industry groups. It shows that a large component of the cost of major investments in major industry groups such as oil and gas or power generation is related to engineering design. Some of these industries are dominated by public investment projects, e.g. infrastructure and power generation, while in others, such as oil and gas, a large group of clients are private corporations. The scope and level of engineering design in the various groups remain largely a function of the complexity of the projects undertaken.

It is important to note the demand for engineering design services such as those mentioned above can be satisfied either *internally*, e.g. through provision of design by technical services or design departments within the contractor/client firm itself, or *externally* via contracts with engineering consultancy firms operating in the market. The decision to acquire engineering

services within the firm or to outsource these services to specialized engineering consultancy firms depends on several factors, including the existence of a competitive market and specialized suppliers.

The role that engineering consultancy plays in a particular project depends on the extent to which engineering is specific to the end product. The more specific engineering becomes for the product, the more it tends to be seen as a key competitive asset for the firm and is consequently often internalized. To the extent that design is standardized and difficult to appropriate as a competitive asset it may be outsourced more easily. In electronics and aerospace industries, for instance, engineering design constitutes a major activity which is also a chief competitive asset, and firms in these sectors tend to develop new design in captive research and development units. Differences between industries regarding the attitude towards security of information on new projects also influence the extent of reliance on services provided by engineering consultants. To some extent, however, the widespread existence of specialized engineering design consultants in industries such as construction and petroleum also appears to be a question of historical traditions within these industries.

In addition, the choice between internal or external supply for engineering design has frequently been dependent on government regulation (e.g. the requirements of public tendering for large-scale public investment projects) and national traditions. These questions of opportunities for outsourcing engineering services have important implications for the liberalization of international trade in engineering services.

The consulting engineering business is still - despite investments in computers, software and offices - based on the skills of individual consultants. More than 80 per cent of the cost of producing engineering services are salaries and similar costs. It takes more than 10 years to educate and train a well-qualified engineer and the creation of a national consulting engineering industry has hence to be seen as a long-term investment. It is thus evident that there will often be national imbalances between supply and demand of engineers and other skilled personnel. Such imbalances will contribute to international transactions in consulting engineering services. For example, when Norway discovered large oil reserves in the North Sea during the 1970s, it became necessary to use American and British engineers until a national engineering consultancy industry had been developed. Gradually, however, the local engineering consultancy firms acquired adequate levels of competence to take over many of the design and construction tasks in the Norwegian oil and petroleum sector.

The consulting engineer is often the mediator between the operator and the contractor. Acting in this role, the engineering consultant is often forced to take decisions on behalf of his client and thus assume major risks involving another party's money. This may often result in a basic human quality such as honesty becoming critical for suppliers. Moreover, in international transactions, knowledge of different cultures, traditions and expectations, as well as language skills, play an important role.

B. Factors influencing tradability

Engineering consultancy services have typically been delivered abroad by means of the movement of human resources or through foreign direct investment. In recent decades, the convenience of air travel has made it possible to expand services to foreign markets for many of the large engineering consultancy firms in the United States and Europe. Knowledge embodied in skilled staff continues to be the major competitive asset of engineering consultancy firms.

Therefore, the mobility of such personnel and their ability to work closely with clients in other countries has formed an important precondition for international transactions in engineering services. The issues surrounding the mobility of consultants focus both on visa requirements and the like for staff from engineering consultancy firms working at the client's site and - increasingly - on the ability of engineering consultancy firms to recruit consultant staff from other countries when necessary.

In recent years, a number of other factors - primarily associated with the application of information technology - have come to contribute to changes in the conditions for delivering such services abroad. The utilization of advanced information and communications technology is becoming a vital component in strategies of companies to serve foreign markets.[3] In particular, the widespread use of telefax and the importance of computer-aided-design (CAD) systems have transformed many work processes in the production and delivery of engineering consultancy products abroad. The prospects of integrating such computer and communications systems into full-fledged videoconferencing packages that enable the engineering consultancy teams to communicate frequently with clients abroad as part of the consulting process will become an important factor for tradability of the services involved.

In addition to the developments affecting the mobility of human resources and technical facilities available for cross-border delivery by advanced information and telecommunications technologies that are likely to alter the conditions related to the tradability of engineering consultancy products, regulations pertinent to consulting business at the national level and the international level also affect the potential for trade.

In the discussion that follows, the primary focus is on the application of information and telecommunication technologies in engineering consultancy firms, and the effects of such technologies on the tradability of engineering consultancy services. That is followed by a brief analysis of the impact of other important factors such as international mobility of labour and regulatory regimes.

1. Information and communications technology

According to a study based on surveys/case studies conducted in United States, the United Kingdom and Sweden, published in 1993, consulting engineering and design firms were investing heavily in new information technology, which was rapidly becoming an indispensable component of international competitiveness in the industry (UNCTAD, 1993b). For the companies interviewed in the United States, for instance, investments in information technology were primarily motivated by the desire to maintain market shares. In other words, the rapid diffusion of information technology in United States engineering consultancy firms in the late 1980s, which accelerated in the 1990s, became one of the key elements in their strategy to remain competitive. The surveys identified various benefits which the firms had derived from their investments in information technology, but, overall, the results of the application of information technology were observed in qualitative changes rather than cost savings, although there is no doubt that information technology had reduced the costs of producing technical drawings. Investment in information technology among the firms interviewed had increased substantially during the late 1980s. For example, the United States firms studied spent an increasing proportion of their sales revenue on investments in information technology, which doubled in current value between 1985 and 1990 for a group of surveyed firms (UNCTAD, 1993b, p. 89). During the same period, the rate of application of CAD systems had grown from 6 per cent of company operations to 60 per

cent. In the United Kingdom, firms reported a similar rate of diffusion for CAD systems, with the implication that CAD is now firmly established in essential engineering design processes (ibid., pp. 107-108).[4]

The effects of these investments during the 1980s were most visible in relation to the employment of draftsmen. While employment for other groups such as engineers and architects in United States engineering consulting firms increased by 20 per cent and 40 per cent respectively during 1985-1990, employment of draftsmen actually declined by 8 per cent (ibid., p. 90). In other words, the introduction of new information technologies coincided with higher levels of employment for the advanced skill categories - engineers and architects who were associated with conceptual design work - and a reduced reliance on more routine work in the technical departments. But it is also clear that the new technologies have altered the work content and skill requirements of core groups such as engineers, who are increasingly required to operate CAD systems.

The strategies that engineering consultancy firms pursue in relation to information technology investments have also changed over time. According to survey results for United Kingdom firms, while information technology investments in the 1980s were aimed at cost reductions (e.g. reducing the number of draftsmen), investments in the 1990s sought to introduce technical systems for coping with complexity and winning business through novel applications (ibid., p. 115). This change is indicative of the growing perception among managers that information technology is becoming a vital competitive asset in delivery of services abroad.

Some of the most widespread forms of information technology, such as copiers and fax machines, have become an integral element of the operations of engineering consultancy firms at home and abroad. The application of these technologies has served to enhance the speed of delivery and quality of services provided, primarily by making the existing work processes more efficient. A study of six large architecture and engineering design firms in the United States carried out in 1994 revealed that work processes had been transformed from mostly manual activities using traditional engineering tools to those of an electronic office environment using software applications and other advanced information technologies (Davis, 1994). Prior to the widespread use of CAD workstations, personal computers and other computer-based information devices, the work processes for designers, architects and engineers in design firms revolved around the drafting table. Informal group discussions were conducted daily as an ongoing process in order to carry out engineering designs. With the advent of advanced information technology, the work process is different in that architects, designers and engineers communicate through networks by transferring files or sharing common design files with overlay capabilities. The traditional communication forums created through team reviews and spontaneous meetings have diminished in importance (Davis, 1994, p. 92).

According to the previously mentioned study of firms in the United States, the United Kingdom and Sweden, firms had not yet made any major quantitative changes in their operations, and their overseas market shares did not appreciably improve as a result of the adoption of information technologies (UNCTAD, 1993b). In fact, the firms did not report any changes in the globalization of their activities, nor did they feel that the demand for local presence had been reduced, partly because many clients demanded that the engineering consultancy firms maintain manpower at the site of a project. But these findings reflected the situation that existed around 1990, when the earlier investments in information technology applications in engineering consultancy firms were gradually being assimilated and the learning process related to making full use of these new investments was still in progress. The United States engineering consultancy

firms expected that the seeds of these investments and their current efforts to upgrade the technological level of many operations would bear fruit in the 1990s - bringing about a palpably different construction and engineering design industry in the future (ibid., p. 96).

Indeed, the main bottlenecks for a comprehensive strategy to use information technology in engineering consultancy firms were seen to relate to the cost of these new investments, the relative lack of skills in the operation of them, and the lack of appropriate software and standards for data interchange. The study of six United States firms mentioned above showed that the information component of organizations had become largely computer-based (Davis, 1994). Information had become more voluminous and available in more types of media and information formats, and this has produced mixed blessings for the engineering design firms. Design information can be created, transmitted and stored at electronic speeds, but the lack of adherence to proper information archive and retrieval procedures often results in sub-optimal reuse of design information, largely because of the difficulty of relocating, retrieving and restoring this information from project archives. Therefore, the firms that had a proactive programme of information technology appeared to have a better strategic advantage than those firms that acquired and utilized advanced information technologies on an ad hoc project basis. It was concluded that a re-engineering of the firm in terms of delivering the best value to the firm's client was warranted. Too many legacy systems, a general lack of information standards and protocols for dissemination of information, and a lack of concern for long-term technology programmes were all contributing to the sub-optimal use of advanced information technologies (Davis, 1994, p. 152).

By 1995, the diffusion of information technology in the industry had nevertheless reached levels where stand-alone applications were increasingly being integrated. The role of communications is now such that the possibilities for exchanging data between offices, or between designers and contractors, provide a basis for interoperability.[5] With these abilities, a future competitive advantage may be to offer delivery of data that are fully compatible with the needs and software of the client and/or the contractor. At the same time, the capabilities of CAD systems have changed in significant ways,[6] enabling the handling of data from maps, surveys and other sources in both two-dimensional and three-dimensional perspectives. The systems have also become more user-friendly and may be utilized in totally new ways for checking designs. Together, these new technologies promise to enhance and alter the work processes, and often the qualities of service products, for the engineering consulting firms. By implication, such changes may have a strong impact on the internal organization and division of labour in the firms, as well as their external relations with clients, partners in joint ventures, etc.

The fact that much of the graphic, numeric and text-based information related to engineering design and construction management is currently stored in electronic form has meant that electronic delivery of these data to the client has become feasible. It is possible, for instance, for an engineering consultant to set up an agreement with a contractor for a project whereby the results of design are transferred from the computers of the consultant directly to the computer system of the contractor, thus eliminating the re-entry of data such as specifications of components and materials. Delivery of the product would usually, in such cases, comprise a copy of the project database (including many layers of data in different forms: graphic, numeric and text) with paper-based documentation of drawings, specifications related to the structure and contents of the database. The client, whether the contractor or the owner of the project, may already be using a specific system for management and implementation of projects, and would then require that the database delivered conforms to the format and specifications of this system, occasionally implying a translation of the data to the format required by the client.

Electronic delivery is often considered more resource-demanding for the engineering consultant because the modifications required to integrate the project database into the client's system involve additional time and, occasionally, procurement of new hardware or software. In addition, this form of delivery raises special issues related to control of the extent to which the product fulfils the requirements specified in the contract, responsibilities for errors in the material (or errors that occur when the project database is integrated into the client's system), and the time in which the product is delivered in a formal sense.

Videoconferencing is another trend in the use of advanced information technology that is rapidly becoming essential in the interaction with clients overseas.[7] The videoconferencing systems that have been used experimentally in recent years allow designers located in different offices to meet and discuss design simultaneously, using video cameras to capture images of the people participating in the meeting and integrating these with interactive work on a design from workstations in each location. The ability to interact directly on the design from several locations has made videoconferences an important complement to project meetings, whereby the staff of the consultant or the client undertakes expensive international travel in order to meet in one physical location.

Currently, there are still technical and economic limitations on the widespread use of videoconferencing systems, since these require very advanced and expensive hardware, software and access to high-speed communication systems. There seems to be little doubt, however, that various forms of videoconferencing systems will be gradually integrated into the work of engineering consultants in the foreseeable future.

2. National regulatory factors

Limitations on market access for engineering consultancy services relate to visas and residence permits for foreign service personnel on the one hand and licensing requirements relating to services provision on the other. Because the delivery of engineering consultancy services generally depends on the presence of skilled personnel on the site of a project during most phases of the project life-cycle, national regulations influencing the international movement of labour are important factors affecting cross-border transactions by consulting engineers. Licensing requirements, for their part, influence the ability of engineering consultants to engage in direct cross-border trade as well as transactions involving the movement of personnel by stipulating qualifications and other criteria necessary for service providers.

As regards the movement of personnel, most countries have distinguished between short-term “business” visitors and temporary working residents, where the latter are usually those staying for several months or years to be employed by organizations (including foreign affiliates) in a host country. Engineering consultancy firms rely to a great extent on short-term visits made by small teams of staff, and regulations affecting visa and work permits for these groups may pose significant barriers to trade at arm’s length, with which these visits are generally complementary. Moreover, large international projects often require more permanent presence of engineering consultants on-site, and for that reason engineering consultancy firms will frequently need to set up local offices staffed on a longer-term basis. In those cases, the engineering consultancy staff will usually require more extensive work permits and residence permits, and issues related to national treatment such as restrictions on the rights of dependants and tax become important.

The current efforts to liberalize the international mobility of labour are mostly related to temporary migration, i.e. situations where the sale of services involves the temporary movement of service-providing personnel to the country of the project site and/or the owner (UNCTAD and World Bank, 1994, pp. 103-114). Various measures aimed at liberalization in this area have focused in particular on improving market access and national treatment for service providers relying on the movement of temporary workers. In general, however, the restrictions related to visa requirements and work permits for personnel with advanced technical skills such as engineers have traditionally been fairly minor, as such categories of occupations seldom require labour certification tests, and since they are usually only in the host country temporarily.

In the case of licensing requirements, the restrictions are greater, and most countries have maintained a strict regulatory framework with regard to licensing of foreign professionals. Often, the requirements of nationality, residency and certification of language proficiency will pose significant barriers to practising in foreign countries. There are also problems of limited diploma equivalency as the acquisition of a licence is dependent on the completion of an appropriate degree course. Foreign professionals are, however, often allowed to consult in a country as long as they do not provide services that are subject to the specifications of a special licence.[8] Nevertheless, licensing requirements tend to constrain direct trade in engineering consulting services and to encourage forms of delivery which rely on local inputs, for example by the establishment of affiliates staffed with engineers licensed to operate in the host country or by the formation of alliances, consortia and the like with local engineering consultancy firms.

Liberalization of regulations in the areas of market access and, in particular, for facilitating cross-licensing in professional services have mostly taken place in connection with regional integration schemes (UNCTAD and World Bank, 1994, pp. 108-110). A useful illustration of this is provided by the efforts aimed at improving the mutual recognition of professional licensing of engineers and architects in the North American Free Trade Agreement.[9] Similarly, the European Community has attempted to harmonize requirements for professional licences and to some degree even educational curricula among countries. Under the Single European Market Act, these efforts have shifted largely to a more pragmatic approach based on partial mutual recognition of qualifications.

In relation to national treatment, i.e. the ability of foreign service providers to offer their services on terms no less favourable than those of domestic suppliers, conditions vary considerably between countries. Usually, restrictions apply to civil rights (e.g. the right to vote), rights of dependants (e.g. the right of the spouse to be employed), overseas remittances, and various aspects of taxation and social benefits. These restrictions tend to increase the cost of using expatriate personnel in the host countries, in particular since engineering consultancy firms may have to compensate for such restrictions by higher remuneration. The barriers imposed by such restrictions are largely motivated by the interest in protecting domestic labour markets and economic interests, and apart from a large number of bilateral tax treaties, liberalization efforts have been confined mostly to regional initiatives (e.g. the Common Nordic Labour Market, the European Union).

It is important to recognize that so far there have been few means of replacing temporary movement of labour for the purpose of delivering engineering consultancy services. The use of advanced information and communication technologies has tended to be complementary to the dispatch of managerial, engineering and technical staff to project sites. The restrictions that exist internationally with regard to labour movement will thus remain important constraints on the ability to deliver design services abroad. Although technologies such as videoconferencing may

reduce the need for labour movement among countries with a high-capacity telecommunications infrastructure, engineering consultancy still requires a substantial staff presence on project sites. A gradual liberalization of visa and work permit requirements for highly skilled personnel will therefore improve the tradability of engineering consultancy services overall by enabling the delivery of services complementary to others that can be rendered from a distance along computer-communication networks, and, with the potential expansion of regional initiatives to provide mutual recognition of professional licences, the prospects for a more liberal environment for the export of engineering design services would be improved.

3. International guidelines

International organizations and development finance institutions such as the World Bank have pioneered the efforts to introduce common procurement standards. In particular, the World Bank's guidelines regarding the use of consultants, which provide *inter alia* detailed guidelines on the evaluation of bids for projects sponsored by international loans, are widely referred to by other international financial institutions (World Bank, 1981). A much more definitive set of regulations attempting to standardize procurement procedures in the interest of enhancing competition, including through cross-border delivery, is a number of European Union Council Directives which have been adopted in recent years. Two directives with special significance for the export of engineering consultancy services are the Directive concerning public procurement (EU92/50), and the Directive regarding procurement in the water, energy, transport, and telecommunications sectors (EU93/38). In addition, the Directive concerning minimum safety and health requirements at construction sites (EU/92/57) may influence the responsibility of firms involved in a construction project.

C. Engineering consultancy products and their tradability

1. Characteristics and categories of products

This section describes the characteristics of individual service products provided by engineering consultants and examines their tradability. There are several ways in which the services sold by engineering consultancies can be categorized and described. Since most service products tend to be closely associated with the human resources available in the firm and the specific demands of the clients, they are seldom standardized to the extent that one would find in other consulting services such as accountancy. For this reason, it is possible to establish a number of different modes of categorization for the products offered by engineering consultancies:

- By sector (e.g. building; oil and gas; power generation);
- By life cycle of projects (e.g. feasibility; basic design; construction management);
- By technical or scientific method (e.g. mathematical models; hydrodynamics); and
- By contract types (e.g. management assistance contracts; engineering, procurement and construction contracts).

The basic point of departure for the present analysis is to describe the products or services rendered at various points along the life cycle typically associated with an investment project. The project life cycle is a convenient point of departure, since its various phases are prevalent in virtually all the sectors that engineering consultancy firms serve. The life cycles of projects involve a number of more or less distinct phases, each of which often constitutes the framework of one or several products, i.e. services that the engineering consultancies provide to their clients. Frequently, such products are combined to form packages that an engineering firm offers on the

market. In some instances, however, such packages cannot be delivered by a single firm. For example, regulations in relation to projects undertaken by public organizations may specify that if an engineering consultancy firm is involved in one phase of the project (e.g. feasibility study) the same firm is prohibited from bidding on other phases (e.g. project appraisal). Box IV.1 lists the different phases of a project life cycle. The terms used to describe these different phases, and thus the various products that engineering consultancies offer on the market, may vary from one source to another. For instance, basic design is also known primarily as conceptual design in some countries. Nevertheless, the different categories listed in box IV.1 will be recognized by most people involved in the business. The characteristics of the products can be described in terms of a number of elements, such as those presented in box IV.2.

Box IV.1. Engineering services: the project life cycle

Identification
Pre-feasibility study
Appraisal
Feasibility study
Basic design
Detailed design
Supervision and commissioning
Construction and procurement management
Operation
Maintenance
Rehabilitation
Decommissioning
Removal

Source: Based on information provided by industry experts.

Box IV.2. Elements in the description of engineering consultancy products

- General description: the objectives and general content of the services provided
- Geography and language: factors related to the actual physical location of a project and to language requirements
- Scientific and technical methods: the types of methods may vary from one sector to the next, but the predominant methods typically used are described
- Calculation tools: the extent to which the service involves use of computer hardware and software
- Communication tools: the requirements in terms of communication facilities
- Presentation tools: the various ways in which products are presented to clients
- Deliverables: the physical output of the service (e.g. report, model)
- Size of project team: number and skill categories of people, division of labour
- Cost: the typical cost of the service in percentage of total project cost

Source: Based on information provided by industry experts.

The technical and scientific methods and theories used for consulting engineering products lie at the origin of the business. The use of scientific methods based on theories, rather than the traditional use of workmanship, was the basis for consulting engineering when it was first developed in the last century. However, owing to the large number of sectors, industries and geographical locations and the actual life cycles of projects, the technical and scientific methods that are used are often different even though the physical problem is more or less the same. This is due to different expectations as to accuracy, speed, documentation, language and quality control for different products. Consequently, many consulting engineering companies are no longer organized internally on the basis of technical and scientific methods but rather on the basis

of the market (sector and geography) and the stage in the project life cycle in which they are involved.

Whereas many small consulting engineering companies were created on the basis of demand for services of one specific technical or scientific method, the present trend is to have multidisciplinary companies with access to a large number of methods. Most technical and scientific methods used by the consulting engineering companies have traditionally been publicly available and, often, knowledge about their use was linked to the persons using them. However, the introduction of advanced computer programmes and licences for specific methods has created scope for separating the method from the persons using it. Also, company databases with information on previous assignments and company procedures and principles become more and more important as information on many projects is no longer published. Typically, one of the most important factors in competition is the number of references to similar projects, which shows the capabilities of a particular firm. However, inventions developed by consulting engineering companies will often become the intellectual property of the client for whom the method was developed.

Finally, one of the most important aspects of the production and delivery of engineering consultancy services is the availability and skills of human resources. The need for technical education and the existence of a well-educated workforce are factors which, from the point of view of the engineering consultancy, preserve the character of the industry as a "people business". This is illustrated by the fact that, for most companies in developed countries, more than 80 per cent of the cost of producing engineering consultancy services is typically made up of salaries. Of the remaining 20 per cent of costs in the business, approximately 10 per cent goes to cover the rent for offices, while 10 per cent or so is spent on the depreciation of capital equipment of various sorts, such as computer hardware and software, telecommunications, copying etc.

Engineering consultants use a number of tools for the creation and delivery of their service products. These include various tools for calculation, communication and presentation. Calculation tools are used for more accurate and faster scientific or technical calculations, modelling and simulation; communication tools, most notably for telecommunication such as telephone, telex and fax networks, but also for physical communication such as transportation of people and documents; and presentation tools, for preparation and reproduction of drawings, reports and administration of information. The software that is used is typically a combination of off-the-shelf software and customized software, but even for the standard software some adaptation to the requirements of clients is necessary. In addition to influencing the tradability of services products, the availability and utilization of such tools often constitute a critical element of the competitiveness of engineering consultancy firms and their affiliates or partners overseas.

The most important consulting engineering services are described below, together with a product-wise description of their potential tradability. Each of the services or products is described with respect to the overall objectives of producing the service, the technical and scientific theory or method which is used for creating the product, and the tools which are necessary for the production. The discussion then focuses on the various factors and characteristics of engineering consultancy services that facilitate or limit their technical tradability, that is the feasibility of delivering services across borders (with limited or no physical presence at the site of the project/client). (Annex 3 provides an overview of the current levels of tradability of the various products and the factors involved, in the form of a table containing a product-wise characterization.)

2. The tradability of engineering consultancy products

The following analysis of the tradability of individual engineering consultancy products focuses on describing the extent to which the products involve large teams of engineers or participation of other groups of personnel, the kinds of physical or electronic components that are delivered to the client, the need for local knowledge and physical presence of teams, and whether the delivery is dependent on local presence. All of these aspects are, theoretically speaking, important for determining the potential tradability of the engineering consultancy products. Actual tradability, and trade are dependent on a number of other factors in addition to these characteristics of the products, including both economic and regulatory aspects related to cross-border trade.

a. Identification and pre-feasibility study

In general, the identification of the need for an investment project is carried out by the clients; these may be operators or owners of major industrial facilities, or they may be public authorities responsible for a particular infrastructure project. Frequently, the identification process is the result of the overall planning process for a specific sector. When projects are identified for the purpose of obtaining funding support from international donors or financial institutions such as the World Bank, and the projects are to be carried out in developing countries or in the economies in transition of Central and Eastern Europe, identification and pre-feasibility studies will often involve participation of an engineering consultancy firm.

In the private sector, however, the identification of new investment projects is an important issue that has implications for the entire business plan of a company. Consequently, in such cases the identification of new investments is often treated as confidential and as few persons as possible become involved in the process, which is undertaken by a team consisting of a project manager, engineers, economists and specialists in environment, safety and financing representing the company. The size of the team varies from three to 15 persons, depending on the size of the project. The location for an identification and pre-feasibility study is often indicated beforehand by the client, and the language is the national language of the client organization or an international language such as English or French. The typical cost of an identification study is less than 0.1 per cent of the total project cost.

An identification or pre-feasibility study (table IV.3) usually involves the utilization of methods that are of a general nature, and generally do not require detailed accurate calculations but merely estimates of economic and technical variables. Such estimates will frequently be combined with policy-oriented assessments or similar analyses. Consequently, the tools used during pre-feasibility studies will be simple drafting systems and word-processing software, often on portable computer systems; more advanced three-dimensional drafting systems will only be used for illustrative purposes. However, given the importance of communication with clients and the multidisciplinary nature of pre-feasibility studies, telephone connections and fax equipment are often essential.

In cases where it becomes important to illustrate difficult technical issues to public officials or other decision makers without a technical background, various advanced presentation tools may be utilized. The deliverable product of an identification or pre-feasibility study is usually a written report describing the work and conclusions of the study, and may often include a few illustrative maps, schedules and drawings.

Table IV.3. Identification and pre-feasibility studies: components and tradability

Major product	Service components	Tradability
Identification and pre-feasibility studies	Survey of project and definition of scope. Occasionally derived from sector plans	Poor

Source: Based on annex 3 and other information obtained from industry experts.

The nature of the identification or pre-feasibility study is thus such that technically speaking, there is a relatively large scope for tradability. But since these kinds of studies are often considered operational issues for the client organization, they tend to involve strategic decisions. In recent years, there has been a tendency to base identification projects on sector studies for individual countries or even regions, and therefore the studies have become more explicitly based on scientific methods in which politicians, public officials (or board members in private companies) tend to have less scope for detailed decision-making and only provide the general conditions and limitations for a project. At the same time, the identification process for a project requires both a large amount of general knowledge and great competence in expert knowledge that comes with many years of experience. Consequently, it is often carried out by some of the most experienced individuals or organizations, and external consultants are frequently selected for this type of service on the basis of the client's trust in a company or in specific individuals; sometimes, however, selection may be based on a consultant's presentation of new concepts. Price competition is limited.

Another factor which limits the tradability of engineering consultancy services in the area of identification and pre-feasibility studies is that such studies are often carried out within the client's own organization in order to secure confidentiality and rapid decision-making. Consultants may even be temporarily integrated into a client's organization for the purpose of achieving such levels of confidentiality and speed.

b. Feasibility study

A feasibility study (table IV.4) is carried out in order to assess the viability of a project. Normally, it is carried out before the final decision on the implementation of the project is taken. The objective of the feasibility study is to collect, through surveys and/or other methods of data collection, sufficient information on the physical and economic aspects of the project to evaluate different alternative solutions with respect to technical solutions, schedule of work, project costs and economic viability, environmental impacts, and safety and risk considerations related to the project. The service involves information gathering, analysis and evaluation of various types.

The collection of information for a feasibility study usually has to take place at the site of the project, and many of the activities conducted during a feasibility study are therefore linked very closely to that geographical area. In addition, the feasibility study is often carried out in close cooperation between the client and the engineering consultant.

Table IV.4. Feasibility studies: components and tradability

Major product	Service components	Tradability
Feasibility studies	Evaluation of the technical and economic feasibility and environmental impact of a project	Good

Source: Based on annex 3 and other information obtained from industry experts.

The methods utilized for a feasibility study are frequently of a general nature, similar to those involved in project identification, and various types of hardware and software such as word-processing and simple drafting systems on portable computers are often sufficient. However, the amount of experience which the engineering consultant has accumulated with respect to feasibility analysis is vitally important, particularly since the quality of a feasibility study depends on the selection of appropriate data and various methods of analysis. The amount of data to be collected is much larger than with identification studies, and access to telephone connections and fax systems is essential.

Presentation tools are relatively important with respect to feasibility studies since one of the objectives of this kind of study is to show the viability of the project and thus to "sell" it to decision makers. Apart from presentation, the deliverables of a feasibility study usually include a written report.

Feasibility studies are normally carried out by a relatively small project team (three to 15 persons) that includes experts to cover the relevant disciplines. The cost of a feasibility study will normally be less than 0.5 per cent of the total project cost, and a medium-sized feasibility study may take from three to six months.

The tradability of feasibility studies is good, since it is essential to obtain the highest quality of work in carrying out such studies and because the client will seek to employ the most experienced individuals and organizations, regardless of location. Nevertheless, engineering consultancy services for this product are frequently obtained without public bidding and with limited price competition. Consultants for such services will often be selected on the basis of the trust that the client has in a particular company or specific individuals. Moreover, the need to ensure confidentiality and rapid decision-making often leads to integration of the consultants' services (and temporary relocation of people) with a client's organization.

Data collection work on the site of a project, other surveys of a technical and economic nature, and/or interaction with local authorities to obtain the necessary information are carried out as part of a feasibility study. In some cases, this kind of survey and communication tasks can be carried out as separate assignments with the use of local consultants. Under such circumstances, these services may become tradable as separate entities or intermediate products.

c. Appraisal study

An appraisal study (table IV.5) is normally carried out on behalf of various financing agencies in order to assess the technical and economic viability of a proposed project. It is usually based on additional information gathered on the site of a project and may include meetings and interviews with the future operator of the project. It seldom requires extensive scientific and technical methods and usually involves a team of very few people. Moreover, appraisals are frequently carried out by the staff of a financing agency (e.g. the World Bank) itself, with the assistance of a few selected consultants. The deliverables are written reports that rely little on presentation tools etc. They tend to follow a standard format determined by the financing organization.

Table IV.5. Appraisal studies: components and tradability

Major product	Service components	Tradability
Appraisal studies	Independent evaluation of projects on behalf of financial institutions	Good

Source: Based on annex 3 and other information obtained from industry experts.

The technical tradability of engineering consultancy services related to appraisal studies is good, and such a study can be carried out by an independent consultant and delivered to the client in a different location. However, major financing agencies such as the World Bank and regional development banks such as the Asian Development Bank or the African Development Bank may pursue special policies with regard to the use of external consultants in connection with appraisal studies. Typically, these institutions rely primarily on their own staff to carry out appraisal studies; nevertheless, they may also involve external consultants based in different locations on a short-term basis in the work.

d. Basic design

After a decision to go ahead with an investment project has been taken, a basic design (or tender design) (table IV.6) is normally prepared. It is still possible to stop the project after basic design has been done, and there may also be possibilities for choosing between various solutions. The objective of the basic design is to obtain a basis for calling for tenders for work on the project by contractors. The basic design must therefore be sufficiently accurate to describe the amount of physical work to be carried out and the amount of materials to be used. However, it is not necessary to provide all the details of the design as there may still be scope for alternative solutions.

Table IV.6. Basic design: components and tradability

Major product	Service components	Tradability
Basic design	Preparation of design for tendering and estimation of cost and schedule	Fair

Source: Based on annex 3 and other information obtained from industry experts.

The preparation of the basic design involves more comprehensive data collection than that used for a feasibility study, and also normally requires extensive and frequent consultations with the client. Therefore, it is essential that the consultant can use the same language as the client and that there is close contact between them; sometimes, the client has to have a supervisory team at the consultant's location.

The scientific and technical methods that are used in the preparation of a basic design usually involve more specialist knowledge than identification, feasibility or appraisal services, but they may vary from one project to another. Many disciplines are covered, but, usually, the importance of general knowledge and economics is less than that required for feasibility studies. Typically, advanced computer calculations and various simulation models are used, although these methods will be employed to a lesser extent than in the case of detailed design. During the preparation of basic design, standard computer systems such as personal computers and simple drafting systems are supplemented with the use of advanced 3-D design systems on larger computers. For complex process plants, it is becoming typical to use Plant Design Systems (PDS) that also include databases with the physical properties of the components.

Telephones and fax equipment are extensively used for communication between team members. Increasingly also, data communication facilities are used for transmitting drawings internally among members of a project team and between different offices. The presentation tools employed in the process of preparing a basic design focus on the production of drawings. Since a basic design is usually distributed to a large number of construction companies as part of the tendering process, it is also important to have access to modern copying and printing equipment. The physical output of basic design services includes reports with documentation of calculations, drawings, technical specifications, general conditions and other tender documents. More than 25 copies are often produced, with each set of documentation for a medium-sized project normally covering more than one meter of shelf.

The size of a project team producing a basic design naturally varies with the size of the project, but it will often take from three to six months to prepare a basic design. Since a basic design requires considerable inputs of calculations and drawings, the team for a medium-sized project will often comprise more than 25 people, where some members of the team are working full-time and some experts are employed only for a few hours. The total cost of the basic design is generally substantial, accounting for roughly 1 to 5 per cent of the total project cost depending on the complexity of the project.

The tradability of engineering consulting services related to basic design is relatively good. Much of the work involved is a combination of expert knowledge and standard design work; a fair amount of time is consumed in the preparation of drawings. This type of work can technically be divided into components that can be carried out in different offices or locations, while the essential data for calculations and drawings can be transmitted between locations via communication links. The preparation of the basic design does not require a group of people working in close proximity to the client's offices or the project site, once the necessary types of information have been collected. Nevertheless, many project managers engaged in preparing a basic design prefer to employ a dedicated project team with all of its members situated in the same office building.

e. Detailed design

The preparation of a detailed design (table IV.7) is carried out on the basis of the basic design, but is done directly for the purpose of construction; the level of detail and accuracy is thus much more demanding than that in the case of basic design, as changes in the design will no longer be made. The level of detailing may, however, depend on the preferences of the designer and the contractor. Detailed design services include computation of all calculations, preparation of detailed drawings for the construction (including shop-drawings), provision of detailed specifications and procedures, and quality assurance.

Table IV.7. Detailed design services: components and tradability

Major product	Service components	Tradability
Detailed design	Preparation of detailed drawings, specifications etc. as direct basis for construction	Good

Source: Based on annex 3 and other information obtained from industry experts.

The work on such detailed design may be organized in different ways. For some projects, the detailed design work is carried out by the contractor, occasionally in collaboration with an engineering consultant as a sub-contractor. In other instances, detailed designs for investment projects are carried out by an engineering consultant for the client and/or contractor; under such circumstances, interface problems may exist between the consultant and the contractor. Therefore, when engineering consultants are engaged in the preparation of detailed design, their roles are usually very clearly defined: the services are delivered with clear objectives, definite descriptions of methods, interface with other activities, precise schedules, and a detailed breakdown of resources and costs, together with a clear definition of deliverables.

In general, part of the work on the detailed design can be carried out in a location which is different from that of the client and the investment project site; the potential for carrying out detailed design in a different location depends on the nature of the project and the time schedule. In fact, however, the location of the work on the project is often determined primarily on the basis of the availability of skilled personnel, particularly when the design team is large (for large projects often more than 50 people).

The methods utilized in the preparation of a detailed design are essentially the same as those for basic design, but may vary considerably from one type of project to another, (also depending on the sector that the project belongs to). Nevertheless, the requirements for specialist engineering knowledge and skills (including basic workmanship skills) are much more important than those for any of the preceding phases such as feasibility study or basic design. The need for general knowledge on and economic and regulatory issues and practical experience is, in contrast, less than those for previous phases. Due to the extent of accurate details required in this work, some of the most advanced computer calculations are utilized, often with expensive simulations and model-scale tests. The advanced work on drawings, simulations and test models will frequently require resources and equipment (mainframe computer facilities and advanced, dedicated software) that are too expensive to utilize in earlier

stages of the project. For the detailed design of complex process plants, it is becoming customary to use Plant Design Systems (PFS) which include advanced databases describing the physical properties of the components. Although the various types of data required for detailed design are extensive and often voluminous, they are increasingly shared via data communication links.

Traditionally, the physical output of a detailed design has relied heavily on presentation of drawings together with documentation of calculations and procedures. For construction of major buildings and advanced process plants, it was common to prepare huge physical scale models. In recent years, CAD systems have facilitated presentation of such advanced drawings and models (for instance, 3-D models), and the preparation and printing of drawings are automated. To a considerable extent, these new computer-aided presentation systems have made it possible to replace huge physical scale models that were produced in order to check for the possibility of conflicts in the design specifications. With advanced 3-D simulations it is possible to carry out quality control and check the design for consistency with the assistance of computer-generated models. In some cases, it is even possible for engineering consultants to create simulations that allow the client to "walk through" the prospective plant, and to check and eventually change the physical properties of various components.

The cost of detailed design services will typically range from 2 to 15 per cent of the total project cost, and the team that undertakes detailed design can easily comprise more than 50 people for a medium-sized project and several hundred people for very large projects such as refineries, offshore platforms or power plants. Preparation of detailed design for a medium-sized project often takes from 6 to 12 months.

The tradability of detailed design services is generally good, since a major part of the work consists of preparation of calculations and drawings that can take place in any location once the necessary data and skilled people are available. The work on detailed design can, from a technical viewpoint, be divided into various sub-projects or components and thus located in different offices that are not necessarily in the geographical vicinity of the client or the contractor. Owing to the need for coordination of the work, which often involves a strict time schedule for completion of the detailed design, sub-division of the work within the team depends heavily on reliable communication facilities, e.g. possibilities for data communication, and fax and telephone links. In addition, many project managers prefer to employ a dedicated project team, situated in the same office building, because work on a detailed design requires extensive coordination and discussions. These kinds of human communication factors tend to inhibit, to some extent, the potential tradability of these services.

f. Supervision and commissioning

The services delivered in connection with supervision (table IV.8) include the monitoring and control of the work carried out by the manufacturer or contractor. The objective of supervision by engineering consultants is to ensure that construction has been carried out in compliance with the design and specifications of the project, particularly with respect to the quality of materials and the workmanship involved. Sometimes, special services related to commissioning of the project, i.e. to ensure that the plant or construction project is put into operation, are also delivered as a special project.

Table IV.8. Supervision and commissioning services: components and tradability

Major product	Service components	Tradability
Supervision and commissioning	Ensuring that construction of project is according to specifications and (in the case of commissioning) is put into operation	Poor; but for commissioning services, fair

Source: Based on annex 3 and other information obtained from industry experts.

Most of the time, the services related to supervision have to be carried out on the site of the project, including regular testing or spot checks involving technical methods for different kinds of testing - particularly non-destructive testing. The team undertaking such supervision services generally comprises a combination of experienced managers who are familiar with the design and construction in the sector, and relatively inexperienced engineers who will be assigned primarily to routine work in connection with testing etc. For these purposes, standard computer hardware and technical equipment are utilized, and the supervision team will rely on simple communication tools such as telephones and fax machines. Presentation tools include means for documentation of test results and other forms of data collected on-site. Usually, the presentation of control documents is in the form of standard data formats.

The size of the team working on supervision may constitute around 10 per cent of the total number of people working on a project (25-50 persons for a medium-sized project), and the cost will range from 1 to 10 per cent of total project cost, depending on the complexity of the project. The division of labour between the engineering consultancy and the contractor differs from one project to another. In some instances, a substantial part of the supervision is carried out by the contractor, and the engineering consultancy only carries out spot checks. Although this is becoming an increasingly common phenomenon (associated with the tendency to carry out projects on the basis of design-build contracts), there are often various regulations that are intended to ensure quality control through independent supervision by an engineering consultant for major projects.

The technical tradability of supervision services is generally poor, since most of the work has to be carried out on the construction or manufacturing site. In most instances, supervision services involve personal inspection and testing and these services are usually delivered abroad by relocating personnel to the site. However, there is a tendency for data collection related to supervision of projects to increasingly involve advanced equipment and digital data; these forms of data could be transmitted to other locations for control and analysis. Thus, supervision services may become more tradable. Moreover, services rendered in connection with commissioning of projects involve plans that can be produced at a location remote from the construction site, although these plans of course rely on analysis of data collected on-site. The tradability of commissioning services is thus fair.

g. Construction and procurement management

The management of construction and procurement for a project (table IV.9) includes a range of activities associated with the tendering and coordination of the work, including acting as a liaison between client and contractors. Services involved may encompass the management of the pre-qualification process and inviting tenders from contractors, negotiations and planning of time schedules and quality requirements, approval of procedures, approval of invoices and quality assurance documentation, follow-up on the progress of work and design, etc. For smaller projects, this kind of work is normally carried out using in-house resources. However, it is becoming more and more common to use external consultants for construction and procurement management.

Some of the kinds of work mentioned above require detailed familiarity with local conditions and regulations, and particularly local contractors and suppliers. These requirements often necessitate physical presence on-site, and the delivery of services will frequently depend on a large number of meetings with contractors and suppliers and control of supply at the project site. However, for large projects tendering processes may be international and suppliers from many countries may be involved. In these cases, construction and procurement management will include much international communication and coordination work that is not directly linked to physical presence at the project site.

Table IV.9. Construction and procurement management: components and tradability

Major product	Service components	Tradability
Construction and procurement management	Management of tenders for supply of goods and services. Management of contracts.	Poor to fair

Source: Based on annex 3 and other information obtained from industry experts.

The size of the team undertaking construction and procurement services depends on the complexity of the work, but will often be around 5 per cent of the number of people working on the project. In most cases, the skills of the project team delivering procurement management will be fairly advanced, depending on experience and involving lawyers and administrative skills. Construction management tends to rely to a larger extent on routine operations. The cost of these services may range from 5 to 10 per cent of total project cost.

The tradability of construction and procurement services is generally poor, since the delivery of these services is closely tied to presence at the project site. Therefore, international transactions in such services usually require relocation of personnel to the site. However, for large projects, many of the management tasks involved may include international coordination and management services, for which tradability is fair.

h. Operation and maintenance

Operation and maintenance (table IV.10) relate to services delivered in connection with the commissioning of a project and its operation. The objective of these services is to ensure that a plant or facility constructed is utilized to its full capacity and that systematic maintenance is carried out. The services usually include assistance for normal or emergency operation, training

of personnel, preparation and control of schedules for systematic maintenance, and evaluation of operational performance.

Table IV.10. Operation and maintenance services: components and tradability

Major product	Service components	Tradability
Operation and maintenance	To operate the plant or project and carry out systematic maintenance. To train local personnel for these tasks.	Poor. But for training, tradability is good.

Source: Based on annex 3 and other information obtained from industry experts.

Most of these services are carried out on the project site, but some new methods and technologies for remote control have been introduced to assist the engineering consultancy in providing such services from distant locations. Examples of new systems for remote control can be found in relation to gas transmission systems and for some light rail systems. The statistical methods and new technologies employed for control of operation and quality control are becoming more and more sophisticated. In addition, some new methodologies relying on psychology and theories of the man-machine interface have been introduced for quality control and scheduled maintenance. Software for decision support (neural networks) has also been used. Many of these new technologies rely on advanced data processing and communication facilities for on-line measurement, but many services related to operation and maintenance are still based on simple computer hardware and software. The deliverables will often include operation manuals, software for decision-making and databases for scheduled maintenance.

A special service relates to training of local personnel in operation and maintenance. This kind of training will often be undertaken at the site of the engineering consultancy office, and rely on advanced presentation technologies and simulation tools.

The size of the teams undertaking operation and maintenance services tends to decline with the introduction of various forms of automation. The typical annual cost of these services constitutes 0.5 to 1 per cent of the total project investment.

The tradability of operation and maintenance services is still relatively poor since these services are carried out largely on the location of the project site. With rising levels of automation, remote control and on-line data acquisition, however, these services tend to become increasingly tradable. Training related to operation and maintenance is, moreover, a service with good prospects for tradability.

i. Rehabilitation

Services delivered in connection with rehabilitation (table IV. 11) relate to evaluation of the need for a rehabilitation project, and planning and implementation of such a project. Like some of the services delivered in connection with the earliest phases of a project life cycle, such as identification and feasibility studies, rehabilitation relies on surveys and interviews conducted on the site of the project; moreover, the skills required from the project team are similar.

Table IV.11. Rehabilitation services: components and tradability

Major product	Service components	Tradability
Rehabilitation	Evaluation of need for rehabilitation of a project, planning (and management) of rehabilitation	Fair

Source: Based on annex 3 and other information obtained from industry experts.

The tradability of these services is fair, given that rehabilitation involves both the collection of data on the site and a certain amount of analysis and planning which may be carried out elsewhere.

j. Decommissioning and removal

Whereas the decay and destruction of buildings and industrial plants used to take place in a disorganized manner, it has now become normal to plan for the decommissioning and removal (table IV.12) of such structures as part of a project's life cycle. This is largely a result of the experience of pollution from old chemical plants and other major works. The services delivered by engineering consultancy in this connection include analysis of when a plant is to be decommissioned - temporarily or permanently - and how it is to be removed.

Table IV.12. Decommissioning and removal services: components and tradability

Major product	Service components	Tradability
Decommissioning and removal	Plans for taking a plant or building out of operation as a direct basis for removal	Poor

Source: Based on annex 3 and other information obtained from industry experts.

Usually, the planning and implementation of the decommissioning and removal of a plant is undertaken by the organization responsible for its operation. It involves methods of engineering design, but also economic considerations and quite extensive and advanced environmental analyses. The project team may be a combination of personnel from the client (with detailed knowledge of the plant) and external consultants (with extensive planning and design experience). The size of the teams and the cost of services will vary with the complexity of the project and the size of the plant. For the decommissioning and removal of a nuclear power plant, the costs can easily reach 10 per cent of the total construction cost.

The requirements for local knowledge reduce the tradability of decommissioning and removal services, which can be described as poor. Both decommissioning and removal demand physical presence at the site. Monitoring of pollution after the removal of a plant may be a special component of these services. Such monitoring can increasingly be undertaken via

remote controlled measuring instruments and analysis at the engineering consultancy office; in these cases, the tradability of the service is increased. In some instances, however, the results of the monitoring activities have to be kept confidential, which leads to a reduction of the tradability of such services.

* * *

The preceding analysis of the tradability of the services offered by engineering consultants indicates that there are several products in the life cycle of engineering products which can, from a technical point of view, be traded across borders via telecommunication links, once the necessary technical infrastructure is available. At the same time, the analysis also makes clear that, for a number of products, the technical tradability of the services is inhibited by requirements for local knowledge or the physical presence of the consultant at the site. It is also noteworthy that "core" engineering design services such as feasibility studies and detailed design are characterized by a relatively high level of tradability, while the group of products that is associated with the phase of construction and implementation is mostly less tradable.

D. Impact of tradability on modes of internationalization

As noted earlier in this study, internationalization in professional services has primarily been achieved via two major routes, characterized as client following or market seeking.[10] Engineering consultancy firms have established operations to provide services to home country clients carrying out projects abroad. Many engineering consultancy firms have long-standing connections with major international contractors and have expanded their overseas activities partly on the basis of such client relationships.[11] Other important clients that engineering consultancy firms of several countries have followed abroad have been the national development assistance agencies of the home countries. The procurement of engineering consultancy services by development agencies in Scandinavian countries has, for example, been identified as a key factor in the growth and international competitiveness of those countries' engineering consultancy firms - particularly in Denmark and Sweden (Möller, 1994, pp. 38-40).

On the other hand, some engineering consultancy firms have made conscious efforts to diversify their services and extend their market presence abroad - for instance, in a strategic effort to offset stagnating or declining markets at home. During the early 1990s, this factor was important for many firms offering services to the building construction industry, which had stagnated in many developed countries but was experiencing growth in some newly industrializing developing countries. The tendency is that the propensity to engage more actively in overseas work depends, for major engineering consultancy firms, on the conditions experienced in domestic markets.[12] Overseas markets have often acted as complementary business areas for major engineering consultancy firms in the United States and Europe, and the popularity of globalization efforts in many industries encourages a more strategic attempt to operate on a worldwide basis for those firms.

The internationalization of service firms has been analysed from a variety of theoretical perspectives. In a synthetic approach, the decision to engage in FDI, rather than in arm's length trade across borders, is seen as a result of three interacting factors associated with the exploitation of three kinds of competitive advantage: ownership, location and internalization advantages (Dunning, 1989). In the case of engineering design services, FDI has been a primary means to exploit overseas markets. In some countries, especially developing countries such as China, it takes the form of the establishment of joint ventures between major international engineering

consultancy firms and local partners that have been strongly promoted by the Government in recent years. Owing to demands requiring the participation of local engineering consultancy firms resulting from the pressure of clients and frequently also government policies, an important mode of securing international contracts has been to form consortia on a short-term or long-term basis. The discussion below therefore reviews the role played by cross-border trade, investment in local affiliates and cooperation with local partners as ways to serve the international market.

1. Cross-border trade

Because of the nature of engineering design services, the existence of "pure" cross-border trade has been limited in most of the geographical areas and project sectors where engineering consultants work. However, there are some data that indicate that the extent of cross-border trade may be growing, although the growth may be limited to a few particular markets.

Data for the United States suggest that, perhaps owing to the increased tradability and potential for trade of some engineering consultancy products, the ratio of exports of engineering and related services to sales by United States TNCs' affiliates abroad increased during the period 1990-1998 from 14 per cent to 32 per cent (table IV. 13). As regards the supply of those services to the United States from abroad, the ratio has in fact almost tripled - from 4 per cent in 1990 to 14 per cent in 1998. In other words, the figures indicate that in the 1990s trade has indeed become a more important mode of delivery of engineering services to foreign markets by United States firms and by foreign firms to the United States market. However, trade does not figure as importantly for the delivery of services in the United States by overseas suppliers as it does for United States suppliers serving foreign markets.

2. FDI and other forms of TNC activity

Because of the importance of on-the-spot contact with customers and related producers in many areas of engineering consultancy, the establishment of affiliates by TNCs and other forms of FDI have tended to be important as a mode of internationalization of engineering consultancy services, and continue to be so. Data for the United States show that, as of 1998, approximately 68 per cent of foreign sales of engineering and related services were accounted for by United States foreign affiliates abroad (down from a ratio of approximately 75 per cent in the mid-1990s) (table IV.13). The data also indicate that sales of these services by foreign affiliates in the United States in 1998 were approximately seven times greater than imports to the United States. At the same time, however, there exist substantial opportunities for intra-firm trade in areas such as technology and management skills. Furthermore, because of the transitory nature of many projects undertaken by engineering design firms abroad, there is also still a tendency to supply services through contractual agreements. The services provided by civil engineering, oil and chemical industry construction companies in particular are prone to take the form of turnkey projects. Only the largest TNCs in these industries are likely to have permanent offices in the countries where they serve local markets (Dunning, 1989, p. 53).

Table IV.13. International transactions in engineering and related services: United States, 1990-1999
(Millions of dollars and percentages)

Year	Imports (A)	Sales of foreign affiliates in the United States [a] (B)	Ratio A/B	Exports (C)	Sales by United States affiliates abroad [b] (D)	Ratio C/D
1990	170	3 897	4.4	867	6 105	14.2
1991	315	5 054	6.2	1 478	7 198	20.5
1992	261	5 572	4.7	1 935	8 639	22.4
1993	336	...	...	2 358	9 357	25.2
1997	463	3 520	13.2	3 503	9 701	36.1
1998	544	3 914	13.9	3 548	11 212	31.6
1999	530	...	...	4 071	...	...

Sources: United States Department of Commerce, Survey of Current Business, September 1994, September 1995 and October 2000; Mann and Brokenbaugh (2000).

[a] Sales of architectural, engineering and related services to United States persons by foreign transnational corporations through their non-bank majority-owned United States affiliates (North American Industry Classification System-based industry of affiliate).

[b] Sales of engineering, architectural and surveying services to foreign persons by United States transnational corporations through their non-bank majority-owned foreign affiliates (Standard Industry Classification-based industry of affiliate).

The organizational forms of TNCs in the engineering consultancy industry tend to involve a mixture of various types, e.g. local affiliates, joint ventures, consortia and partnerships. Professional partnerships appear to be the most widespread form of establishing affiliates in foreign markets. However, licensing on the basis of core knowledge and technology also take place to some extent. Foreign markets have occasionally been served from regional offices, but that has always included the temporary transfer of human resources to the project site. In addition, trade, including from regional offices, has often been an initial mode of entry into a new market, to be followed by FDI. One example from the past would be the role of offices in Hong Kong, which were generally employed to enter the market in the People's Republic of China in the early 1980s; during the late 1980s and the 1990s, many engineering consultancy firms entered into joint ventures with Chinese firms and established a more permanent presence in various regions of China.

For the majority of engineering consultants, the firm-specific advantages that enable FDI relate to the accumulation of knowledge. The knowledge assets of such firms are evidenced in the standards of quality requirements and reliability associated with the qualifications and training of personnel; moreover, the specific competence that has been acquired through experience in other projects and frequently embodied in managerial competence or advanced tools constitutes a major advantage for engineering consultancy firms that increase their ability to access foreign markets. However, these are also advantages that are very difficult to keep within a proprietary realm in market-based transactions, and the majority of firms therefore seek to establish a local presence through setting up of local offices or alliances with local firms.

The importance of specialized competence has caused engineering consultancy firms to offer a flexible, but relatively narrow range of service products. Some firms are active in several

specialized markets for engineering services such as building construction, petroleum and environmental services, but the majority of firms seek to market services on the basis of in-depth specialized knowledge in one or several interrelated fields. Economies of size and specialization remain crucial to the engineering consultancy firms operating overseas, and FDI continues to be the dominant mode of exploiting these competitive advantages.

Locational advantages are, as mentioned, extremely important in fostering FDI related to engineering service. The vast majority of projects require some form of customization, and on-the-spot contacts with clients. A study of factors causing foreign service firms to locate offices in the United Kingdom indicated, for example, that engineering consultancy firms considered proximity to clients to be among the most important considerations (Dunning, 1989, p. 44). Moreover, most engineering consultancy firms have developed their business on the basis of long-term contacts with a limited range of clients. A local office is one of the primary means of maintaining such contacts and a steady flow of new jobs.

Affiliates of engineering design firms have tended to function as independent offices serving the local market. For example, data for 1993 for United States TNCs in engineering and architectural services indicate that intra-firm sales of services from parent firms to foreign affiliates and from foreign affiliates to parent firms accounted for small shares of their total sales, representing less than 1 per cent of total sales of the parent firms and a negligible percentage of total sales of foreign affiliates, respectively.[13] Although these figures may reflect conditions specific to the relationship between United States parent firms and their affiliates, they nevertheless suggest that commercial intra-firm transactions between parent firms and affiliates remain insignificant in the work of engineering design firms abroad.

Small and medium-sized service firms which, like many larger firms, are dependent on the ability to have local presence and on-the-spot contacts with clients, but do not have the financial strength to invest in affiliates in all the locations where they work overseas, will often rely on collaboration with local firms.[14] In addition, they may rely on partnerships with one or several firms, for example TNCs that they work with in home markets. For many engineering consultancy firms, overseas projects are carried out within the framework of a consortium which often involves local engineering design firms and occasionally local and foreign contractors.

Notes

1. Estimate by *Engineering News Record*; see www.enr.com.
2. In 1989, the methodology for the ENR surveys changed to include major engineering and construction firms, and the total value of billings jumped to $7.4 billion.
3. See *Engineering News Record*, 4 April 1994.
4. It is important to note that CAD is primarily utilized in a limited number of operations within engineering consultancy firms - primarily in the detailed design phase - and that a figure of 60 per cent of all operations actually indicates a penetration rate of close to 100 per cent in such phases.
5. See *ENR Special Advertising Section*, 1995, C 30.
6. Ibid.
7. See *Engineering News Record*, 3 April 1995.
8. Licensed professionals may work in an importing country without being licensed there as long as their activities fall short of the precise activities subject to licensing. (Such activities are usually described as "consulting"). For example, a foreign engineer may negotiate a contract to sell engineering services to a client from another country without being licensed in that country as long as he or she does not dispense licensed engineering services in the process - which for an engineer means signing off on blueprints. See UNCTAD and World Bank (1994, p. 108).
9. Ibid., p. 109.
10. See also in this context Erramilli and Rao (1990); and Dunning (1993, p. 88 ff).
11. Instructive examples are provided in the paper by Drewer (1993).
12. It has been suggested that the growth of the domestic markets for engineering design services in the United States during the 1980s could have had a detrimental influence on the international market share held by United States "pure design" firms. The statistics available from ENR - which have changed coverage several times during the decade - do not lend themselves to substantiating this hypothesis. See Stanbury (1992).
13. See United States Department of Commerce (1995, tables II.O.1, II.E.4, II.H.6 and II.H.23).
14. Research indicates that there is less of a propensity to use FDI as a means to enter foreign markets in the case of small firms in capital-intensive industries. See Erramilli and D'Souza (1993, p. 29).

V. IMPLICATIONS OF TRADABILITY IN CONSULTANCY SERVICES, AND POLICY CONSIDERATIONS FOR DEVELOPING COUNTRIES

This chapter outlines the implications that can be drawn from the analysis of the tradability of consulting services in the three industries covered in this report, namely accounting, management consultancy and engineering consultancy services. The first section examines the overall implications of the tradability of services in each of the industries: it reviews the changes that have taken place in the organizational structure and international activity in consulting in general as the use of information technology and advanced telecommunications has become more widespread, considers the implications of the potential tradability of services discussed in the preceding chapters for each of the three industries, and provides some empirical data on recent trends in international trade and production in consultancy services. The second section presents a discussion of the implications for developing countries more specifically. The third section outlines policy implications for developing countries and technical assistance measures that could be taken to strengthen the abilities of developing countries to benefit from the emerging tradability of consulting services.

A. Global implications of tradability in consulting services

1. General impact of information technology on consulting

Consulting has become an important service industry in the developed countries, showing impressive annual growth rates in both employment and turnover after the Second World War. Some professions such as accounting and engineering have existed for more than a century, but the ways in which such professionals act as consultants have been subject to dramatic changes in the past few decades. The range of activities undertaken by consultants has broadened from a few rather distinctive tasks, which relied on specific expertise, to a pattern of more general, and often multidisciplinary, assignments. The accounting industry is a good example of this trend. Previously, accounting firms were mainly occupied with preparation and auditing of financial statements - activities in which pure calculation constituted the major service rendered. Today, much of this work is performed by computers and, consequently, accounting firms have moved their business areas to concentrate on system development and on advisory services related to taxes, mergers and acquisitions and so forth. This development has not only affected the qualifications needed by the individual accountant, but also required new types of organization within the industry.

The consulting industry has benefited from the tendency of major firms in many businesses increasingly to seek external suppliers of vital functions and to outsource certain activities. This is particularly true for management consulting. Management consulting has assumed considerable importance for advanced producers in the past few decades; and this has been the case not least in comparison with other consulting industries. During the past few decades, several management consultancy firms have grown from relatively small businesses operating in the domestic markets to large transnational service firms with local activities in a number of countries. Moreover, management consultancy is increasingly incorporated into service packages provided by firms primarily working in other parts of the consulting industry, e.g. engineering consultancy firms, accountancy firms and software houses.

The increasing scope for the use of information technology in the consulting industry has expanded the possibilities for the development of generic tools applicable for solution of a wide range of problems. This development has changed the conditions for provision of consulting

services and led to three immediate effects. First, the range of applications has been extended to include more potential customers, including large TNCs that now rely more frequently on external advice from consulting firms. Secondly, while consulting has always been a "people business" that depended extensively on the personal experience and skills of the individual consultant, the impact of information and communication technologies has been significant in relation to the organization and practice of consultancy by the people involved. Information technology has enabled consultants to develop new tools, methodologies and data sources, all of which are fast becoming indispensable for the work of the individual consultant. Thirdly, standardized resources are affecting the product range and character of the services, with the result that consulting firms can generate uniform service packages internally which may be more easily adapted to client needs in each national and local context.

In all of the three consulting services analysed in this report, information technology has thus been increasingly employed for the development and supply of service products that enable the consultants to combine standard components and modifications according to the particular needs of individual clients. These types of tools include the development of computer-based engineering models, accounting and auditing software, and benchmark surveys or "best practice" databases. This means that both the process of production of services and the character of products have become more similar to those of commodities or goods offered on markets. One consequence of these changes in the nature of products and the way that they are produced has been a tendency towards increasing returns to scale and higher concentration in the industry. The extensive use of information technology tends to raise fixed costs for consultancy firms operating at the international level (even if these are low compared with those in other industries), a phenomenon which tends to favour larger firms. Moreover, the increased application of general software tools and guidelines enables large organizations to ensure quality control and provision of uniform products, an asset that has increasingly become a fundamental marketing requirement.

2. Impact of information technology on the tradability of consulting products in accountancy, management and engineering, and its implications

As outlined in chapter I, the basic aspects of the emerging tradability of services include the following: the introduction of information technology (including telecommunications) is increasingly providing the technical means enabling service firms to exploit new opportunities for a division of labour between various offices and to deliver their services to remote locations; once the services are transportable, they are, technically speaking, tradable, i.e. they can be delivered (at arm's length) to customers across national borders. This technical tradability can influence the organization of a firm and its internationalization strategy, but may not immediately result in actual trade of services. For trade to take place, the limitations of economic and legal factors which often exist for international trade in services must be removed, and the markets for these services - which may not always exist in various countries at different stages of development - must be cultivated.

As discussed in the preceding chapters, from a purely technical point of view, many of the products offered in the accounting, management consultancy and engineering consultancy industries can be characterized as having good tradability. Another group of products are characterized as having low or poor tradability, while a small number of products are placed in between, with fair tradability. This section summarizes the tradability analyses for each of the three consulting service industries and discusses the implications for the consulting industries in developing countries arising from the tradability of several services. The purpose is to link the assessment of potential tradability, and the impacts and consequences which this may have

for modes of delivery with the possible benefits and problems that the processes may have for developing countries as a group. This discussion focusing on each of the three consulting industries respectively is followed by a more general discussion of the potential for trade and modes of internationalization in the three industries.

a. Accountancy services

The tradability of accountancy service products varies considerably among the individual services (table V.1). Nevertheless, it is evident that some of the core services associated with this type of consultancy, namely attestation services and tax consulting, are characterized by poor tradability. Bookkeeping services are clearly becoming increasingly tradable, and one of the key future areas of services performed by accountancy firms - those related to management advisory services concerning new information technology - also seems to be characterized by relatively good tradability.

The use of information technology has made it possible for some accounting service firms to locate some of their production activities in developing countries. To a certain extent, such a development has already occurred in areas such as software development, where the responsibility for some important components of accounting work - or the software development related to the production of such services - can be carried out by computer at considerable geographical distance from the final customer.

The most prominent example of overseas delivery of bookkeeping services is not provided by an accounting firm, but by Swissair, which has established an accounting service centre in India that handles some of the more labour-intensive bookkeeping functions and delivers the related intermediate services to its parent (box V.1). However, although the centre - Airline Financial Support Services (India) Pvt. Ltd. (AFI) - has been established as an affiliate of Swissair, the kind of services it provides could easily be outsourced to independent firms or assigned to affiliates in low-cost locations by accounting firms as well as others.

The example illustrates the potential for firms located in developing countries to undertake some accounting functions for overseas firms, even if the specific case of Swissair does not relate to services undertaken for an accounting firm. It seems unlikely, however, that a similar process could take place with regard to an audit function in the foreseeable future. However, developments such as electronic data interchange where documentation is within the computer system itself may facilitate the undertaking of components of auditing functions by affiliates or other offices in developing countries. The basic responsibility for the audit - in both a practical and a legal sense - will probably remain with the main contractor for auditing, e.g. one of the big international accounting firms.

The importance of reputational effects tends to protect TNCs in the field of accounting, mainly based in developed countries, from competition by firms from developing countries where human resource costs (the main input to these services) are cheaper. This implies that firms in developing countries that have not yet been able to establish an international reputation would find it difficult to acquire international clients, including TNCs, especially from markets in developed countries. The internationalization of service industries therefore actually tends to favour high-cost producers (and hence high-cost locations) because of the reputational effects. Therefore, in the immediately foreseeable future, the impact of tradability of some accounting

Table V.1. Tradability of service products and components in accounting: a summary

Major products	Service components	Tradability
Bookkeeping and accounting services	• Handling of vouchers and recording of events • Verification and correction • Preparation of accounting documents	Good
	• Preparation of periodic financial statements	Possible
	• Analysis of accounts and financial statements	Good
	• Organization of accounting systems	Poor
	• Review of accounting procedures	Fair
	• Advice relating to accounting and bookkeeping services	Good
Attestation services	• Statutory audit of companies • Statutory audit of public sector	Poor
	• Functional operational auditing • Organizational operational auditing • Special assignment of operational auditing	Some
	• Compliance audit • Audit of financial statements	Poor
	• Audit of mergers • Audit of consideration other than cash given in connection with share issues	Fair
	• Expert testimony/expert witnesses	Poor
	• Audit of prospective financial statements	Fair
	• Audit of characteristics of computer software	Good
	• Reviews	Some
Tax consultancy	• Preparation of taxation account • Tax planning • Submission of tax declaration • Representation before tax authorities/courts	Poor
Management advisory services	• Software selection • Hardware selection • Application development	Good
	• Implementation of information technology systems	Poor
	• Budgeting	Good
	• Organization reviews and problem assessment	Some
	• Human resource reviews	Poor
	• Inventory control	Good
Other services	• Advice on debt/equity restructuring • Advice concerning mergers and acquisitions	Good
	• Personal financial planning	Poor
	• Business succession planning • Executive selection	Fair
	• Portfolio management • Brokerage • Development of financing plans	Good
	• Trusteeship and fiduciary activities • Provision of staff	Poor
	• Legal advice • Product services	Fair

Source: Based on annex 1 and the analysis in chapter II.

services on developing countries is likely to continue to be mediated via the activities of TNCs with established reputations (Davis et al., 1993).

Box V.1. Sourcing of accounting services from a developing country affiliate by Swissair

In 1991, Swissair, the Swiss airline company, established an affiliate, Airline Financial Support Services (AFS) (India) Pvt. Ltd., close to the airport of Bombay in India. AFS, a joint venture with Swissair holding a 75 per cent share and Tata Consultancy Services India holding 25 per cent, was incorporated in March 1992 and commenced its activities in the same year. The main tasks of AFS are to carry out revenue accounting procedures and to clear up settlement of queries in different administrative functions, especially in the marketing field, for Swissair. In 2000, the centre was providing revenue accounting and other allied airline-related services and consulting expertise to Swissair as well as Sabena, Austrian Airlines and Lauda Air, and envisaged providing a wide spectrum of IT-enabled services in the future.

Revenue accounting is an airline-specific service in which payments for combined tickets involving more than one airline company are cleared. Apart from certain managerial functions, all revenue accounting for Swissair is done in Bombay. AFS has on-line connection to the mainframe in Zurich and all information on revenue from Swissair tickets is transmitted via satellite. Coupons on payments made to other airlines are paper-based and mailed to Bombay by internal mail. As of mid-2001, the centre employed nearly 700 persons. Employment in AFS requires a knowledge of essential English and some education in business administration or computer-handling from a university or a business school. Almost all staff had to be trained in the specialities. Training varies from a few weeks to a couple of months.

The main driving force for the company's decision to locate these services in Bombay was cost reduction. The availability of qualified English-speaking personnel at costs which are only a small fraction of those in Switzerland can easily compensate for increased transaction costs related to the overseas location of these activities. Bombay was chosen as the location for the centre because of its large English-speaking population, daily Swissair flights and the availability of qualified personnel at low working costs.

The problem of lack of adequate telecommunications facilities has been solved by the establishment of a dedicated on-line connection via satellite, so that the local network can be bypassed in communications with Swissair. However, in the local network, lack of sufficient telecommunication facilities has been a problem.

Source: Information received from SWISSAIR; and http://www.airlinefinancial.com.

The entry of internationally established accounting firms into markets for accounting services in developing countries offers new possibilities for the development of accounting services in those markets. Local accounting firms in developing countries are often able to receive both training and other technical assistance simply by becoming partners in international accounting firms. This can enhance the ability of developing countries to develop a modern accounting industry at limited cost. But for many firms in developing countries that have limited access to information technology and international telecommunication facilities the potential that modern communication means offer may be difficult to exploit.

In contrast to the case of foreign affiliates established in other industries (e.g. banking), the need for professional recognition by the national regulatory authorities of host countries in the case of accounting implies that partners will often be local residents and will also be able to act quite independently of an international network. For instance, the partnerships created in developing countries may decide to leave one network of international accountancy firms and join another, although the ethics of business relationships within the industry often rules out such "defections". If the international market for the services of professional accountants were to open up, allowing the mutual recognition among countries of firms as well as individual professionals, and firms were allowed to set up a variety of affiliates around the world, this situation might well change. Once mutual recognition of firms was introduced, one likely effect could be that much greater control would be exerted by the head office of the network over the member firms. Local partners would then tend to lose their status as "member firms", and be just affiliates under the common governance of a TNC. The large international firms could also simply set up affiliates in developing countries, rather than having to go through local firms whose members have to be trained in the methods of the international firm. It should be mentioned that there is a risk that this type of organization could result in a relative lowering of the value added in the activities of local affiliates. For instance, affiliates might merely be carrying out some basic collection and entering of data into computer files that would subsequently be audited by more skilled personnel elsewhere. So far, however, this type of division of labour has not become manifest.

b. Management consultancy services

In management consulting, services that have good tradability are distributed among the major product categories (table V.2). Four groups of products can be singled out as having a relatively high level of tradability, namely services related to the management of financial and administrative systems, market research, information systems management and project management. However, core services such as general management consulting and human resources development are still characterized by a relatively low level of tradability.

The product-wise analysis of technical tradability thus reveals that the potential for trade in some types of management products is quite good. For the majority of management consulting products, however, cross-border trade in its pure form will be difficult to carry out. Some local presence will normally be necessary, achieved either by the establishment of affiliates abroad or by the temporary movement of the consultants who provide the service. Furthermore, technical tradability (transportability) alone is not enough to realize trade. Economic and legal market conditions must also be favourable for trade. In addition to this, there must be actors in the market that are both willing and able to carry out the trade.

A strong company culture in the international management consultancy companies, together with an efficient information technology system, may provide severe competitive threats to local management consultancy companies in both developed and developing countries. However, national firms possess a very important advantage compared with TNCs setting up affiliates in that they know the national environment much better than the latter. To overcome this disadvantage, the international entrant must have some kind of firm-specific advantage. Concepts, tools, methodologies, information technology systems, quality assurance systems and the like are examples of firm-specific advantages of international management consultancy companies. These advantages may be of great importance for strengthening local capabilities in less developed markets for management consultancy, since know-how and experience can often be transferred to the country through the training of employees in the local affiliates of TNCs.

Table V.2. Tradability of service products and components in management consultancy: a summary

Major products	Service components	Tradability
General management	• Diagnostic survey • Corporate strategy • Structures and systems	Some
	• Corporate culture and management style • Innovation and entrepreneurship	Poor
Financial and administrative systems	• Financial appraisal • Working capital and liquidity management • Capital structure and financial markets	Good
	• Mergers and acquisitions	Fair
	• Capital investment analysis	Good
Marketing consultancy	• Marketing strategy	Fair
	• Implementation of marketing activities	Some
	• Market research	Good
Production and services management	• Product design	Good
	• Production methods and organization • Quality control	Poor
Human resources	• Human resource planning • Recruitment and selection • Human resource development	Poor
Information technology and systems	• Advice on purchase of software and hardware • Development of new software • Outsourcing	Good
	• Adaptation of software products	Fair
Economic studies	• Economic studies	Good
Ecology and environmental issues	• Waste and pollution management	Good
	• Regulatory environmental issues • Working environment and safety	Poor
Project management	• Project management	Fair

Source: Based on annex 2 and the analysis in chapter III.

In cases in which local services in management consultancy are already available, a restructuring of local management consultancy firms may be the result of linking up with international providers. However, as has been stressed, it is quite difficult for foreign service providers to understand fully why, how and to what extent internationally developed concepts, tools, examples, references and so forth have to be adapted to the specific situation of local clients.

International management firms - and the big international accounting firms in particular - are setting up more permanent establishments in developing countries, often through mergers with local companies. These affiliates are usually headed by expatriates in the initial phase; but, for various reasons, local consultants gradually take over. Such affiliates will continue to rely on concepts and tools generated in developed countries; the link to an international consultancy firm will therefore often result in a net import of services into the host country. There is a risk that such cooperation may result in a transfer of activities out of the host country. It can be argued that this does not have to result in a decrease in employment locally, since the new services offered may generate demand for local adaptation and complementary services. Transfer of knowledge and technology from abroad will also serve to upgrade the level of service and may lead to considerable market expansion. In addition, local affiliates of international consultancy firms will be in a better position to participate in projects carried out for international donor agencies or other international organizations. Trade in management consultancy services between management consultancy firms and their affiliates or local partnerships, based on the application of advanced information and communication technology, can be expected to play an increasingly important role in the future. Without proper communication facilities it will probably be much more difficult to build up local affiliates providing the same standard as in the industrialized countries.

In the short term, exports of final products in management services from low-cost developing countries are not likely to take place on a large scale. Very few developing countries have so far developed the necessary expertise for this type of export. By their very nature, management consultancy services build upon the most advanced "best practice" experience in production and organization - experience that is difficult to accumulate in the economic contexts of the vast majority of developing countries. Management consultancy is a very skill-intensive industry, and very few routine tasks are involved. Therefore, the most important immediate implication of increased tradability will be a potential for upgrading domestic services. This will improve the general knowledge infrastructure in developing countries and may in some countries even result in a net export at a later stage.

c. Engineering consultancy

In the engineering consultancy industry, tradability appears to be more closely related to specific product categories, particularly the "core" engineering design services such as feasibility studies and detailed design (table V.3). These products are characterized by a relatively high level of tradability, while groups of products that are associated with the phases of construction and implementation, tied as they usually are to on-site presence, are generally less tradable.

The tradability of some core engineering consultancy services may be exploited for meeting the demand in domestic markets as well as the expansion of marketing of services in international markets. Given the particular nature of a range of factors discussed in this volume, the potential exploitation of this tradability depends on the specific conditions existing locally as

Table V.3. Tradability of service products and components in engineering consultancy: a summary

Major products	Service components	Tradability
Identification and pre-feasibility	• Identification of new projects • Preliminary evaluation to assess viability of projects	Poor
Appraisal studies	• Independent evaluation of project on behalf of financial institutions	Good
Feasibility studies	• Study of technical and economic feasibility • Surveys of location for investment, etc. • Economic and environmental assessments	Good
Basic design	• Preparation of descriptions and drawings • Calculations for basic drawings and specifications	Fair
	• Survey of project site (more detailed)	Good
Detailed design	• Preparation of detailed descriptions and drawings • Detailed calculations for specifications • Quality assurance	Good
	• Production methods and organization • Quality control	Poor
Supervision and commissioning	• Verify that construction is according to specifications	Poor
	• Commissioning (ensuring that project is put into operation)	Fair
Construction and procurement management	• Management of activities related to procurement of supplies and coordination of construction work	Poor to fair
Operation and maintenance	• Operation of final project • Systematic maintenance	Poor
	• Training of local personnel	Good
Rehabilitation	• Evaluate need for rehabilitation of project • Prepare for implementation of rehabilitation	Fair
Decommissioning and removal	• Decommissioning of plant • Planning and implementation of removal	Poor

Source: Based on annex 3 and the analysis in chapter IV.

well as in foreign markets. The concerns that have to be considered in connection with internationalization of engineering consultancy services by firms from the developing countries include the high levels of requirements in terms of skills of personnel, access to information technology and communications infrastructure, access to sources of project finance, and the nature of demand in major markets.

Many developing countries have started to build up a domestic engineering consultancy service industry, since these types of services are proving increasingly vital to economic growth and international competitiveness, but they have started only recently. Increased tradability of these consulting services may hamper the development of a domestic industry if the market is biased towards foreign suppliers. But tradability of some intermediate services such as quality control for design may contribute to the further growth of existing consultancy industries in most developing countries, and ultimately provide the background for competitive exports of consulting services.

The experience of construction and engineering firms from Malaysia provides an interesting illustration of the difficulties faced by developing country firms in entering overseas markets. In Malaysia, rapid economic development fostered the emergence of a sizeable number of indigenous engineering consultancy firms during the 1980s. These firms have experienced intense competition from foreign consultancy companies from Europe and the United States as well as the Republic of Korea. At the same time, they were helped by regulations calling for increased participation of indigenous Malaysian firms. Overseas markets serviced by Malaysian engineering service firms have most often been associated with construction and have tended to be located within the Asia-Pacific region, where contractors from Malaysia are particularly active in South-East Asian countries. Nevertheless, it was indicated by a survey that considerable government assistance would be necessary for Malaysian engineering consultancy firms to be able to market their services effectively abroad.[1] In the long term, the potential tradability of consulting services implies more vigorous competition in international markets, where competitive pressures already appear to have been growing in recent years, as well as in domestic markets. For this reason, domestic consulting firms in developing countries must achieve competitiveness through investments in skills and information technology in order to maintain a share of the domestic market, let alone expansion into the international one.

The mode of internationalization adopted by engineering consultants has hitherto comprised mainly the delivery of services abroad via the establishment of local project offices or the creation of consortia with local partners to undertake specific tasks. Only large, international firms have established permanent, local affiliates in countries in which major markets have existed (e.g. in the Middle East). The potential that exists for tradability of engineering consulting products will most likely reduce the need for establishment of local affiliates and, instead, facilitate two other approaches to deliver these services. On the one hand, tradability may continue to encourage the creation of consortia to which individual partners contribute components according to their competitive strengths. On the other hand, there could be an increased tendency for large firms that are able to provide engineering design, construction services and other contractor components in an integrated package to exploit the tradability of engineering services by offering projects on a turnkey basis, relying on the capabilities of various offices within the firm.

d. Comparison of potential for trade in the three industries

The product-wise analysis in the preceding chapters for the three consultancy industries demonstrates that a range of services in each industry are tradable from a purely technical point of view. However, trade via the telecommunications network is still very limited, especially with regard to final service products. The main obstacles seem to relate to the persistent significance of close human relations in both the production and the delivery of consulting services. In particular, personal communication with the client remains critical in order to establish confidence in the consultant's products and to ensure the optimal marketing of a firm's products to the clients. Generally, the quality of a consulting service depends on frequent interaction between consultants and clients, in order to ensure that the products delivered corresponds to the demands of the clients. Once a personal relationship is established, however, consulting work can often be conducted at a distance.

For many consultancy services, the divisibility of products into their components has traditionally been rather limited, since continual personal and often confidential interaction with the client has tended to require integrated work teams. As a result, work routines that do not demand local presence are nevertheless carried out by the same group of consultants. Nevertheless, the use of telecommunication facilities and the reliance on similar models, procedures and data sources have contributed to an increased divisibility of certain services, allowing some of the intermediate services to be carried out by teams in distant offices or in different departments. This has been the case especially in accounting and engineering consultancies. To some extent, telecommunications has been able to substitute, or at least complement, elements of personal interaction that were otherwise needed for bringing together a particular service.

The analysis of individual products, and components of those products, for both accounting and engineering consulting services indicates that supporting or intermediate services (which may also be called “back-office” functions) are gradually becoming tradable from a technical point of view because of the reliance on divisible procedures involving computer-based systems. Although these trends have not yet led to any manifest change in the nature of products provided by these industries, they have become important for the relationship between head offices and local offices as well as for the interaction of various offices or partners in the production process.

While some divisibility is thus becoming apparent in the production of consulting services, and transportability has become feasible for a few services owing to new, advanced technical means for transmission across borders, the exploitation of the potential for trade is still limited. The barriers to such exploitation of commercial tradability opportunities in intermediate consulting services can be found primarily in two major aspects of these services. One is the relationship between the consultant and client, where both legal provisions and traditional business practices tend to preserve dependence on trust and clearly defined responsibilities. The other aspect is the approach to servicing international markets that has been dominant in the consulting industry; as discussed in more detail below, the widespread occurrence of ownership patterns such as partnerships, or business alliances in connection with specific projects, tends to reduce the scope for commercial trade in intermediate products. For this reason, examples of outsourcing of production components in consultancy service industries are only rarely encountered.

For instance, accounting is an industry in which a long-term personal relationship between a consultant and the client is very important. Legal restrictions at the national level also prevent trade in many accounting services in practice. Above all, it is customary that all accounting services are bought from the same firm and, owing to national rules for certification, local presence is frequently a necessary condition for rendering such services. The result is that, for a particular client, accounting services are generally delivered by the local office of a particular firm, even if some of the components of the service rely on inputs from other offices or from common databases within the firm. Intra-firm transactions in intermediate services are thus quite possible and constitute a growing share of the overseas activities of international accounting firms. Another example is the production of intermediate services for both head offices and affiliates of TNCs, which may be undertaken in advance of a specific request for a service, for instance for the general development of models or procedures. In the case of dedicated software production, it has become common for such products to be procured from production units located in developing countries. For instance, PricewaterhouseCoopers established a software house in India that produces software for the headquarters and many different offices of the organization, while Arthur Andersen located a portion of its software development in the Philippines.

To a lesser extent, management consultancy firms have also experienced a new role for back-office functions, which now constitute a growing share of the activities undertaken by these firms. Some of the largest firms in the industry have achieved international coverage by means of a diversification of the business of their parent accounting firms. These firms have started employing international networks for information retrieval in connection with the formulation of marketing strategies etc., but until recently the division of labour between affiliates in various countries has been quite limited. However, some of the largest management consultancy firms have lately tried to establish centres of excellence that can support local offices with expertise in selected areas. Nevertheless, customer relations are maintained in the local offices.

3. The internationalization of consulting business: new trends associated with tradability

The internationalization of consulting services has been traditionally related to two main driving forces: a "follow-your-customer" strategy and a "market-expansion" strategy. Consulting firms serving clients among the TNCs would often need some type of representation abroad. This was particularly important for accounting firms auditing financial statements for large TNCs. Also, consultants servicing domestic customers may need international networks in order to obtain information on foreign markets, local legislation in other countries, and so on. Management consultants, law firms and accounting firms all need international connections in order to enable them to advise on international transactions. Consequently, their internationalization strategies have tended to emphasize a "follow-your-customer" strategy.

For engineering firms, these needs are less obvious, as most projects are located only in one country. Unless there is a continuous flow of project assignments in a specific country or region, and direct access to clients essential for maintaining a foothold in these markets, international representation or establishment is not essential. Thus, a "market-expansion" strategy has tended to be most important in this case. Nevertheless, international experience has become increasingly important as a qualification for bidding on projects carried out in developing countries, and for many engineering consulting firms this aspect of international marketing has become extremely significant.

In the internationalization of manufacturing production, the utilization of national comparative advantage has been a strong argument for the strategies adopted by individual firms. In services, however, this factor has played a minor role. By far the most significant aspect of competitiveness has been created assets that yield competitive advantages for a particular firm or a group of firms. The extent to which consulting has relied on competitive advantages associated in particular with the specific skills of an individual consultant has made the impact of factors such as national natural resource endowments and wage levels far less relevant.

Comparative patterns of internationalization have shown some differences in the three industries analysed in this volume. Accounting is in some respects the most internationalized of the three industries; but, at the same time, concentration is relatively high in the industry, with the big international accounting firms dominating the market. This network of large TNCs is, however, loosely organized in the sense that most of the foreign affiliates operate more or less as individual entities. The rest of the firms in accounting are usually domestically owned, and most of their business is oriented towards the national market. This is partly due to the fact that accounting is the most regulated of the three industries. In order to provide the most important accounting services (such as auditing of accounts), most firms have to utilize registered accountants, which requires a certification obtained from national authorities. This certification is held by the individual accountant and not by the accounting firm.

Although countries are making efforts to implement mutual recognition of certified accountants, especially within the European Union, in practice it has not been possible to deliver basic auditing services at arm's length across borders owing to legal restrictions. The internationalization of accounting firms has therefore primarily taken place through the establishment of affiliates (greenfield investments or through the purchase of local firms), or the establishment of partnerships with existing accountancy firms in a market. The competitive position of international accounting firms varies from region to region. For example, even within the United States, there are large variations in the areas of specialization of the different accounting firms from State to State.[2] The existence of firms with an international reach but with their activities anchored in national offices in accountancy consultancy services has led to the characterization of this industry as being shaped by multi-domestic rather than international competition.

On account of the close links of management consulting with accounting services, many TNCs in the management consultancy industry are also organized into multi-domestic networks. For example, although there are no formal regulations constraining cross-border activities in management consulting within the European Union, the majority of these consultancy services in that region are still offered by local consultants. A survey undertaken for the European Commission pointed out that the most important constraint lay in the clients' attitudes. These attitudes were observed to range from the desire for local knowledge and understanding to "xenophobia" (EC, 1995, pp. 24-39). The organizational patterns within the management consultancy industry are, however, more mixed. Very often, the way in which a management consulting firm is organized on an international level is dictated by the ownership pattern found in the firm that provided the original basis for the establishment of the management consulting firm - for instance, whether it originated in an international accounting firm, an engineering consultancy, a software producer or a public institution.

Engineering consultancy firms have generally been established as personally owned firms or as partnerships between the people - usually a few engineers - who establish a firm. When

these firms grow, however, they often become incorporated or practise special types of ownership; some engineering consultant firms are owned by the employees or by an independent foundation. Others are incorporated with private ownership and occasionally on the basis of public shares. Many of the large firms in the engineering consultancy industry have had long experience of international work. In many instances, the internationalization process has been similar to that of manufacturing industries. The initial export may have been work on a project that merely required the temporary transfer of employees. Subsequently, additional projects in the same overseas country would require that a contact is established with an independent representative, who establishes and maintains some immediate contact with local customers and also prepares missions for engineering consultants. Occasionally, engineering consultancy firms have relied on joint venture agreements or other more permanent arrangements with cooperative partners in this phase. The next step is usually to open a "sales subsidiary", which in the case of engineering consultants usually means the establishment of a permanent office staffed primarily with local staff. Nevertheless, the head office is usually still responsible for contractual relationships and responsibilities vis-à-vis local customers; the local office is therefore primarily engaged in ensuring that the practical details of consultancy jobs are carried out, and they often have to rely on strong back-office support from headquarters. The last step is the establishment of a regular affiliate, which can act independently in most cases and even develop its own expertise in some areas.

The process of the internationalization of consulting firms is accordingly strongly affected by the particular types of ownership predominant among major firms in the different areas. Because lawyers and certified accountants often have a personal liability in relation to the services they provide, law firms and accounting firms have traditionally been organized in partnerships. These may range from very loose partnerships (which only involve cost-sharing for basic common facilities) to more corporate-like partnerships in which both liabilities and profits are shared. International representation is often initiated as loosely connected networks of nationally based partnerships; in law firms this is still the dominant form of organization of international cooperation. In the accounting industry, however, the process of internationalization has progressed to a different level, as the major players in the industry are increasingly linked together in closer forms of cooperation. Often, national brand names have been given up in favour of a common name.

The advantages and limitations of different organizational strategies for internationalization are briefly summarized in table V.4. In many ways, partnerships, which often have been imposed on the consulting industry for legal reasons (particularly with respect to accounting), have turned out to be quite flexible organizations for internationalization. New offices can be established merely by inviting a local partner to join the existing organization; the financial risk related to this type of international expansion is limited. If it is not possible to make a profit in a new affiliate, it is not difficult to withdraw from the market either, by inviting local partners to join another affiliate or simply by excluding them from the partnership. This flexibility is probably one of the main reasons for the rapid expansion of the big international accounting firms into a large number of new national markets. On the other hand, the partnership structure also has its limitations. For example, it may be difficult to ensure quality control in such a flat organization in which, to a certain extent, all partners run their own individual businesses. When new investments are to be decided or new strategies formulated, a corporate structure may turn out to be more suitable. Corporations can also more easily obtain external funding. For these reasons, many consultancies are now moving towards a more corporate type of structure.

Table V.4. Strategies for internationalization of consulting: advantages and limitations

Type of ownership	Advantages	Limitations
Corporate (e.g. quoted shares, affiliate of a holding company)	External funding of internationalization possible	Dependence on shareholders
Independent fund	Independent of external interests	External funding a problem
Owned by employees	Independent of external interests; more motivated staff	External funding a problem
International partnerships	Expansion can be funded by introducing new partners	Funding of new investments difficult
National partnerships	Expansion can be funded by introducing new partners; limited financial risk related to establishment in new countries	Difficult to agree on funding of new activities
Strategic business alliances	Limited financial risk; no common business strategy required	Lack of quality control; limited economies of scale, e.g. in marketing

The tradability of consulting services is likely, in the long term, to affect both the international market and the patterns of business organization outlined above. There seems to be little doubt that future markets will become more globally integrated. Since the technical tradability of many consulting products is already feasible, the removal of legal restrictions will lead to an increase of trade in this industry. The results in terms of reorganization are not clearly predictable, particularly since the exploitation of tradability can benefit existing patterns of organization as well as support new structures. The tradability of intermediate products may assist firms organized into partnerships to develop means for sharing competitive assets and strengthen the quality of services delivered by local partners. But the tradability of both intermediate and final products may also undermine loosely connected alliances and instead favour corporate structures or even cross-border trade by new entrants in local markets or overseas providers.

B. Towards a strategy for exploiting tradability: implications for developing countries

The implications for developing countries of the increased tradability of consultancy services are of interest in terms of the following three aspects: the potential for expansion and improvement of consulting service industries in developing countries; the localization of services production and delivery within developing countries; and the potential for exports of intermediate and final services.

1. Potential for expansion and improvement of the consultancy industry in developing countries

Consulting in general, and the three consulting industries analysed in the present volume in particular, are relatively young and often small components of the services sector in developing countries (where, for instance, lawyers may have practised for a much longer period). It is mostly in large developing countries such as India and Brazil that domestic consulting firms of significant size exist. Therefore, the impact of tradability, given the liberalization of trade restrictions, will usually not immediately threaten the market for a well-established indigenous industry in most developing countries. In a long-term perspective, of course, there is a risk that tradability may reduce the domestic market for services provided by indigenous firms, in particular if these firms do not keep abreast of the need for new skills and technology.

On the other hand, consulting is an industry of strategic importance. Although they provide relatively little in terms of employment to the national economy, the services offered in accounting, management consultancy and engineering consultancy contribute significantly to the competitiveness of manufacturing, other services and other essential functions of modern economies. Thereby, they help foster economic growth and improve the possibilities for productive employment in a wide variety of industries.

The tradability identified for some of the products analysed in this volume, supported by an increased divisibility of production processes, may provide opportunities for a new division of labour to take place between consultants located in developing countries and those located in developed countries. In many instances, this would enable consultants in developing countries to draw directly on knowledge that has been accumulated by consultants in developed countries. Some of the most significant elements of consultancy methodologies and various data sources have been made available to employees of major international firms in various locations via telecommunications networks. It is also increasingly becoming technically feasible for consultants in developing countries to access such sources of methodology and vital data. In reality, however, access to methodologies and data is usually protected by intellectual property rights or secrecy since they may constitute the core of competitive assets for a consultancy firms. Therefore, in spite of their technical tradability, they are often not available for trade on the international market.

Access to important databases and other vital information may thus become an important motivation for firms in developing countries to join international consultancy firms as affiliates or partnerships. In this case, the interests of a transnational service firm can be protected while the costs of providing services, traditionally rendered by dispatching a consultant in person to a developing country, can be kept low. The tendency for foreign affiliates to draw on international networks established by offices in developed countries has already become apparent in accounting and management consulting. For engineering consultancy, elements of the same tendency can be seen as local offices and engineers in the field increasingly rely on information available from head offices. Engineering consultancy firms often participate in consortia including independent local firms or even erstwhile competitors, and, for this reason, some restrictions on the access to vital information for the firm may be a major concern.

In many instances, it is the ability of local affiliates of international accounting and management consultancy firms to draw on the training and resources of an international network that provides local partners in developing countries with strong competitive assets. One of the implications of increased tradability is therefore the strengthening of the competitive position of

such local partnerships; in addition, the quality of consultancy products delivered by such partners is also enhanced. Currently, many consultancy firms in developing countries experience difficulties in providing advice to local clients on matters related to international issues, since they lack the appropriate information and contacts; with increased tradability of the products of major international firms, such services may become more widely available in developing countries.

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2. Enhancing local production of services with overseas quality control

An important implication of tradability for consultancy services that are divisible into various intermediate products along the production chain is that it is possible not only to carry out major portions of a consultancy task in a particular location, but also to involve personnel in overseas offices in vital elements of control and other forms of quality assurance. In the case of engineering consultancy, some international firms are already utilizing computer and communication networks to ensure that a certain level of quality of reports and design is maintained. For example, designs produced in Asian countries have been transmitted to the United States for control of interdependence, conflicts and overall quality by highly skilled and experienced engineers in head offices of engineering consultancy TNCs.

The divisibility and transportability of intermediate services in principle enables international consultancy firms to blend the inputs of a local team with services produced by staff in overseas offices. In some respects, this offers the major firms increased capabilities to ensure that local knowledge is utilized to the fullest extent. With project teams that are made up of local personnel, experienced professionals in head offices, for example, of engineering consultancy firms will have better possibilities to ensure the appropriateness of design and cost of a project; this would often represent a definite improvement on project designs that are based on a few weeks of field survey on the project site.

In circumstances where locally produced services are expanded and improved, this would provide new employment opportunities in the industry. However, most of the employees in such firms are highly qualified consultants, often with a university degree or similar qualification. The opportunities for job creation in low-wage areas are therefore limited.

3. Potential for exports of services

In some of the large and more advanced developing countries, opportunities exist for generating employment and foreign exchange from exports of consulting services. The most prominent example is that of India, where a number of both engineering firms and software houses are located. India has a comparative advantage in human resource costs, and has also been able to build up its own expertise to an internationally competitive level in certain areas. Substantial successes have been noted among Indian software firms in exporting to developed countries on the basis of their software production skills. In relation to consultancy industries, however, a large part of this kind of activity has taken place within the organizational frameworks of FDI and the establishment of affiliates by TNCs in India. Moreover, Indian suppliers have seldom been responsible for the delivery of final consultancy products or software, but have primarily worked on intermediate products.

It is possible to conceive of strategies that could be pursued by Governments and firms in developing countries which attempt to exploit the tradability of specific products more explicitly, seeking to establish independent, offshore centres for certain basic services. One example would be to undertake services related to basic bookkeeping and accounting which could be exported to developed countries (box V.2). Another strategy would be for the suppliers of such services to be established as members of a consortium providing around-the-clock services on, for example, engineering design (box V.3). In recent years, several international firms in the engineering consultancy industry have established procedures that enable them to shift work on a design from an office in one part of the world to one in another location in order to enable them to maintain close to 24-hour schedules on a project, thereby cutting lead time in the design phase.

Box V.2. A proposed strategy for experts of accounting services

The tradability of basic services related to bookkeeping and accounting, such as handling of vouchers, verification and correction of transactions, and preparation of accounting documents, is relatively high. Provided a firm in a developing country can access the documents entering the accounts (for example, via transport by air courier, scanning and transmission of a document, or access to EDI messages), most of these services may be conducted using personnel with modest levels of skills. Moreover, a firm may move up the value-added scale by providing analysis of accounts and financial statements for management purposes, and even develop budgeting services.

The requirements for offering such services relate primarily to the need for a location easily accessed by air transport and reliable facilities for data processing and international communications.

Source: Based on the analysis in chapter II.

Box V.3. A strategy for an "around-the-clock" consortium in engineering design services

The time factor is frequently crucial for the completion of detailed engineering designs, and many large, international projects demand very intensive work by teams numbering hundreds of engineers over extended periods of time.

The ability to reduce delivery time for such detailed designs can be a major competitive factor in the industry. The potential to cut down on the time required for completing a design by shifting work on it between locations in major time zones, e.g. from the east coast to the west coast of the United States or from the United States to Asia, may enable a consortium to maintain continuous work for speedy delivery.

The main problems related to moving design activity from one location to another include: the large volume of data that has to be transmitted on international telecommunications lines; the requirements that all locations work with the same advanced CAD software; and the stringent requirements of work organization and, in particular, quality assurance procedures.

The establishment of a consortium for "around-the-clock" performance of design may be supported by the Government in a developing country, together with one or several engineering consultancy firms. The role of the Government may be particularly vital in ensuring that access to international communications infrastructure is available, making initial capital obtainable through guarantees etc., and helping domestic firms establish contacts abroad and in ensuring appropriate training for their engineers.

Source: Based on the analysis in chapter IV and interviews with industry experts.

A few firms in developing countries have also attempted to produce engineering services directly for export. Exports of engineering design services on a subcontracting basis are feasible, provided that qualified labour and adequate information and communications technology are available. For example, the Jamaican company Mona Informatrix was set up in 1994 by the Mona campus of the University of the West Indies explicitly for the purpose of utilizing local skilled personnel for providing services to the United States market. It offered CAD/CAM services to foreign as well as local companies; among others, it entered into a one-year, one million dollar contract with the Boeing Commercial Airplane Group (United States) for the provision of CAD/CAM services involving precision scanning of engineering drawings (Schware and Hume, 1996, p. 16). Mona Informatrix represented an attractive location for CAD/CAM services for a number of reasons. First, it was able to provide data conversion and drafting services for approximately a third of the cost of similar services in the United States. Second, its United States customers felt that the confidentiality of the highly sensitive CAD/CAM data was less subject to risk in the Caribbean, given the absence of competition providing similar products. Third, the minimum requirements for a CAD/CAM technician are a high-school certificate and at least one year's training using the relevant CAD/CAM software. This allows the industry potentially to recruit individuals with a range of lower levels of computing skills (ibid.). CAD/CAM services, however, are expensive to provide. They require a wide range of sophisticated computer hardware and software, including scanners and large format plotters. In 1994, the typical cost of computer hardware was between $5,000 and $10,000 per workstation, and software from $3,000 to $20,000. In addition, accuracy and attention to detail are crucial determinants of success. Therefore, the experience in the area of direct exports to the market that is represented by Mona Informatix appears to be unique so far.

An important role played by developing country affiliates of consultancy firms has been to supply sub-components of major databases and expert systems to be used by offices worldwide. This has been the case, for instance, with software developed in India for PricewaterhouseCoopers.[3] With increased specialization among local affiliates of major transnational service firms, as witnessed in connection with e.g. the extension of global networks in PricewaterhouseCoopers, the potential for local affiliates to supply data or conceptual models to central databases will be improved.

Altogether, the implications of tradability are likely to become apparent first in connection with an enhancement and possibly restructuring of the work of affiliates and local partners of international consultancy firms. Such arrangements for intra-firm exports of services from affiliates and partners will, on account of the importance of the protection of intellectual property rights and competitive assets in consultancy services, be a preferred mode of transaction before such services are traded on the market, i.e. before tradability starts to have a strong impact on the international market or in the domestic markets of developing countries.

C. Policy implications

The analysis of tradability for major consultancy service products, and the implications in terms of modes of internationalization for consultancy firms, provide a few central themes that may serve as background for policy formulation related to this area in developing countries. These themes may be summarized as follows:

- Many developing countries have only recently started to build up a domestic consultancy service industry, even as these types of service prove increasingly vital to economic growth and international competitiveness in a globalized world economy.

- In the short term, the tradability of consulting services is therefore not likely to impede the growth of an existing consultancy industry in most developing countries, but rather may act to enhance the growth of a competitive domestic consulting industry.

- In the longer-term perspective, however, the potential for trade in consultancy services implies more vigorous competition in both international markets (where competitive pressure has already been growing in recent years) and domestic markets. For engineering consultancy firms, this development implies that firms operating in national markets must gain competitiveness through investments in skills and information technology in order to maintain a sizeable share of the market. These skills and facilities are also important for accounting and management consultancy firms; but here the tendency is for connections to international sources of expertise, for example via association with one of the large transnational firms, to become very important even for maintaining a position in national markets.

- With increased competition in most domestic markets for consulting services, and as the barriers to entry into international markets are gradually lowered, it will be increasingly necessary for consultancy firms to identify niches for attaining a competitive position in home markets and for the purpose of generating exports of their services. In some respects, a strategy for specialization in areas of particular competence - fostering a position in international networks as a "centre of excellence" - will become an even more important avenue to exploitation of tradability of consulting services.

- The mode of internationalization adopted by management and accountancy consultants has emphasized the delivery of services abroad via the establishment of local partnerships or affiliates. In the engineering consultancy industry an important approach to entering international markets has been to establish project offices or to create consortia with local partners to undertake specific tasks. The importance of partnership and similar forms of local representation implies that the concern with proprietary rights and protection of competitive assets still inhibits transactions on the open market, e.g. outsourcing of vital components in a consultancy project.

- The growing importance of standardized elements in the production of consultancy services, including conceptual models and gathering of information in shared databases, is providing large firms and international partnerships with an opportunity to integrate and allocate work done in various offices.

Against this background, the policy measures that can be proposed for consideration relate primarily to the need to facilitate the training of skilled personnel, improved access to the relevant information technology and communications infrastructure, and the improvement of conditions for joint ventures, partnerships or other forms of localization of consultancy services in developing countries. Recommendations may also be formulated that apply more specifically to one of the consultancy industries examined in this volume (UNIDO, 1995).

1. Development of human resources

The consulting business is firmly based on the skills of its employees. The spread of advanced information technology in many cases has accentuated the skill requirements and broadened them to include qualifications associated with the use of computers and communication networks. For this reason, the training of new graduates from institutions of higher learning in the three areas discussed in this volume is essential for building up local consulting industries. Personnel for management consulting and accounting are usually recruited from business schools, while engineering consultants generally receive their fundamental training in technical universities. To the extent possible, these types of education will have to be enhanced in order to allow a continuous supply of people with adequate basic training.

In reality, however, the educational institutions in most developing countries are already hard pressed to supply graduates with the basic qualifications. Consequently, a strategy for the development of a human resource base for consulting in these countries will often have to take into account the benefits of training that foreign consulting firms may offer as part of joint ventures or other forms of FDI. In the case of some of the large international accounting and management consulting firms, for instance, participation in standardized training courses is required for all new employees. Moreover, on-the-job training for local employees in affiliates is an integrated component of establishment in overseas markets for major consulting firms. With increasing frequency, employees from local offices in developing countries will also be assigned to work in other countries of their region or in the home country of the consulting firm. Individuals or groups that develop skills in connection with such assignments abroad may prove an invaluable asset for raising the level of competence in the consulting industry in developing countries.

In many respects, a policy framework for facilitating the growth of a consulting industry, and its export potential, in a developing country therefore involves support to two vital human resource development areas simultaneously. On the one hand, it requires a strengthening of general educational standards relevant for consulting, such as the education of engineers or accountants; on the other hand, there is a need to encourage more specific training in specialized skills that are directly related to practising as a consultant. While the former type of area of support necessarily involves a long-term perspective and relies to a significant extent on the expansion of public educational institutions, the latter can often be achieved within a more immediate time frame and will usually comprise private sector investment. For many local affiliates and independent firms in developing countries, the possibility of participating in international projects and sending staff to work abroad provides a unique and valuable opportunity to acquire the kind of practical skills needed to remain competitive in the new environment of liberalized economies.

In formulating a policy concerning capability building in these industries, it is also important to consider the relative differences between the time perspective and the sources of competence. In accountancy and management consulting, local staff can be trained within a relatively short time, and staff mobility will often be high. In the engineering consultancy industry, however, the necessary qualifications of consultants may take a longer time to create, and the effects of exposure to on-the-job training may be more important.

Labour mobility becomes an important factor in the development of skills for consultants, both with respect to the inward flow of highly skilled foreign consultants who may contribute to training of local consultants (e.g. as part of FDI) and with respect to the possibilities for nationals

from developing countries to acquire on-the-job training abroad. Government regulations in these areas of interest should be as flexible as possible.

2. Improving access to information technology and communications

With the diffusion of advanced information technology and the increased reliance on data communications and shared data resources, the threshold of information technology and communications infrastructure requirements for entry into the consulting business has been raised in recent years. To exploit the opportunities that the tradability of certain consulting services offers, the offices of consultancy firms in developing countries should have access to reliable telecommunications links, possibly on dedicated lines. There is also a need to upgrade the infrastructure of firms in terms of computer hardware and software. For management consultants, these investments in information technology may be moderate in comparison with the requirements for accounting firms. The software and the hardware needed to become engaged in trade of engineering consultancy services are, however, much more substantial, as the costs of current CAD programs and workstations capable of handling detailed design work - despite the continuing trend towards lower prices of electronics components - may represent a large proportion of annual revenue for many firms.

Some of the facilities provided by the Internet - particularly, new standards for exchange of data files and other information - may prove to be very helpful in enhancing the access of consultants in developing countries to international networks. Although there obviously remain both commercial and technical bottlenecks to the full exploitation of Internet resources in many developing countries, it is likely that this form of interconnection with service providers and clients in international markets will be vital for the development of business in many developing countries.

3. Improving the business environment for foreign service providers

The importance of the conditions for maintaining proprietary rights concerning intellectual resources and products associated with the delivery of consulting services, and the establishment of local affiliates or partnerships as the prevailing means of delivery of services abroad, implies that developing countries will have to facilitate FDI in these industries. The tradability of consulting services is often utilized to link the quality level of services provided locally in developing countries to the provision of components developed in the home countries of major international consulting firms. In many instances, this type of linkage may lead to an upgrading of capabilities in local offices; for some tasks this process would encourage centralization of work procedures and leadership, while for others it may gradually reduce dependence on the inputs from the home country. In the longer-term perspective, such linkages may facilitate exports of services.

It may be necessary to strengthen the role of national Governments, national associations and international or regional bodies in facilitating the involvement of domestic consultancy firms in projects launched by public organizations, occasionally by means of preferential policies. It is already common in many countries to require that domestic firms be involved in projects financed by international donors or by financial institutions such as the World Bank. In view of the impact that information and telecommunications technologies are likely to have on the tradability of consultancy services, it is also relevant to highlight the importance of taking steps that could:

- Improve access to international telecommunication networks to enable domestic consultancy firms, or affiliates of international firms, to participate effectively in consortia related to projects overseas;

- Facilitate investment in information technology for domestic firms in areas vital to the provision of core consultancy products for each of the three industries, e.g. basic and detailed design in the engineering consultancy industries;

- Encourage and facilitate the entry of domestic consultancy firms into joint ventures and consortia for projects in domestic markets as well as for overseas projects, for instance through the provision of financial guarantees enabling these firms to acquire working capital for training and R&D;

- Facilitate FDI and the establishment of local affiliates of major engineering consultancy firms;

- Support the identification and enhancement of niches of competence related to specific sectors or products for domestic engineering consultancy firms with a view to developing export opportunities.

D. Technical assistance options

In a considerable number of developing countries, the consulting services industry is small and insignificant in the overall economic structure. Yet the importance of such services for modern economic growth and international competitiveness cannot be ignored, and awareness of the need for the establishment of a viable industry must be created among government policy makers and other important actors. Therefore, an important area of technical assistance should relate to alerting policy makers to the need for support to an indigenous consulting service industry and the role of FDI and other forms of cooperation with foreign service providers in raising the level of competence in the industry.

With increased competition in most domestic markets for consultancy services, the changing conditions for entry into international markets become vitally important for exploring business opportunities. For this reason, it will be increasingly necessary for consultancy firms to identify niches for exports of their services. In identifying such niches, the local capabilities should be evaluated in terms of the following components:

- The available skills of basic staff, including both formal educational level and extent of on-the-job training;

- Project management skills of managerial personnel;

- Availability of computing hardware and software;

- Access to - and reliability of - international telecommunications facilities.

Given that consulting is a "people business", it is vitally important to contribute to the development of human resources. Another area of technical assistance could therefore support the design of training courses that raise the qualification levels of local consultants in developing countries. In addition, an important area of assistance may be to improve the participation of consultants from developing countries in seminars and conferences in developed countries. Finally, the establishment of professional associations for consultants in developing countries can facilitate the exploitation of training opportunities, the dissemination of quality assurance systems and certification, and the formulation of various ethical or professional standards.

The extent of knowledge of foreign markets for consulting and the opportunities for exploring such markets with regard to export of services traditionally tend to be very limited in developing countries. An area of technical assistance for many developing countries - perhaps specifically those in which a consultancy industry is already in existence - is therefore related to improving access to information on potential assignments for consultants from developing countries; for example, engineering consultants in these countries may benefit from better access to information about projects to be undertaken by international organizations, international financial institutions or other donors.

Technical assistance related to improvement of the information and communications infrastructure for the consultancy industry may be especially useful in countries where interaction with foreign service providers promises to expand and upgrade the services offered locally. The growing role of Internet access in providing access to sources of information, or furnishing new marketing opportunities for firms from developing countries, should not be underestimated.

Notes

1. The discussion of Malaysian experience is based on Hoong (1991).
2. See Clolery (1994). This survey shows the regional differences in specialization and business strategy for the same accounting firms.
3. See "PwC, PeopleSoft link up", *Businessline*, Islamabad, 13 May 1999, p. 1, and "Good news for West Bengal: more cities are joining the country's drive to become a significant force in the sector", *Financial Times*, 2 December 1998, p. 7.

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ANNEX 1

ACCOUNTING SERVICES: A PRODUCT-WISE DESCRIPTION AND ANALYSIS OF TRADABILITY

The past decade has witnessed a broadening of the scope of accounting services, and many services are supplied by accounting firms that also provided by other professions, e.g. lawyers - and, in particular, by management consultants. Moreover, a certain national variation is to be found in the range of services supplied. In general, the term "accounting services" includes more management services in America than in Europe. The list of products in this annex is produced as a mixture of different national traditions. This implies that not all services are provided in every country and that some highly specialized services may have been omitted. Accountants are occasionally asked to undertake certain specific tasks which fall outside the list of products presented below. Nevertheless, the list is comprehensive enough to cover the most important accounting activities in any country.

The different products are described and characteristics relevant for assessment of the tradability of the particular products are delineated. In the following, brief descriptions are provided of the aspects analyzed with respect to each product:

- Need for local presence relates to the activities which must be performed on-site, and appraises the necessity of being on the premises of the client.

- Use of EDP depicts the status of electronic data processing (EDP) applications and delineates the processes in which EDP is used most extensively.

- Need for communication depicts the type of information that must be exchanged between the client and the accountant during performance of the service.

- Skill level indicates the level of qualifications needed to perform particular tasks.

- Demand for local knowledge characterizes the types of local information which affect the ability to perform a particular service in a competent way. This aspect is important for the ways in which actual trade may take place. Even highly tradable products in the technical sense may have to be provided locally because foreign suppliers remain uncompetitive owing to their lack of competence in local matters.

- Legal restrictions briefly characterize restrictions that are important for most accounting services. In spite of all good intentions, it is still very difficult to deliver accounting services across borders on account of such restrictions.

Bookkeeping and accounting services

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Handling of vouchers and recording of events	Primarily supplied to small businesses. Vouchers are filed transactions are typed into the accounting system	Arm's length production possible	Vouchers are often kept in paper-based filing systems but recorded in EDP based accounting systems	Intensive exchange of electronic and paper-based information	Involves large amount of relatively low-skill work	Not important	National authorization rarely needed	Good potential
Verification and correction	Primarily supplied to small businesses. Accounting records are verified and corrected	Corrections in particular can be made at distance	Corrections are made in EDP systems. Verification may include checking with paper based information	Exchange of both electronic and paper based information	Basically manual work. Some accounting knowledge required	Not important	National authorization rarely needed.	Possible
Preparation of accounting documents	Accounting documents are prepared on the basis of recorded information. Normally combined with handling of vouchers and records	No technical reasons for local presence	Operations entirely EDP-based, once procedures are established	Exchange of accounting records	Highly automated work		National authorization rarely needed	Good potential
Preparation of periodic financial statements	Financial statements for legal purposes are prepared	No technical reasons for local presence	Operations entirely EDP-based, once procedures are established	Exchange of accounting records	Highly automated work	Knowledge of national accounting law essential	National authorization rarely needed	Possible

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Analyses of accounts and financial statements	Include standard analyses such as cash-flow, cost and revenue analyses	Some analyses require firm-specific knowledge of organization, market etc.	Simple analyses may be entirely EDP-based	Very limited communication needed	Simple analyses are highly automated	Specific knowledge (not always local) may be needed for more complicated analyses	No	Good
Organization of accounting systems	Setting up procedures for preparation of accounts	Some knowledge on client activities and organization must be acquired on- site	Involves development rather than use of EDP systems	Intensive personal communication needed	Highly skilled work	Knowledge of national accounting rules essential. Knowledge of other local conditions is an advantage	No	Poor
Review of accounting procedures	Review of existing procedures for preparation of accounts	Personal communication on-site with departments involved is needed	Analyses of EDP system may be necessary	Intensive personal communication needed	Highly skilled work	Knowledge of national accounting rules advantageous, so is knowledge of local conditions	No restrictions	Fair
Advice relating to accounting and bookkeeping services	Expert assistance to clients, who are preparing accounts on their own	Small and medium-sized companies will demand presence of accountant	In general not dependent on EDP	Intensive personal communication needed	Highly skilled work	Knowledge of national accounting rules may be necessary	No restrictions	Poor

Attestation services

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Statutory audit of companies	The audit is based on 7 types of evidence: physical examination, confirmation, documentation, observation, inquiries to the client, mechanical accuracy, and analytical procedures	Physical inspection and observation must be done on-site. Documentation is most easily done on-site. Confirmation, inquiries, mechanical accuracy and analytical procedures can be carried out at distance	EDP is used intensively, and is essential for testing mechanical accuracy and analytical procedures	Exchange of accounting records, on-site control of sample data and vouchers	Planning of control procedures is highly skilled work. Large part of the execution (e.g. control of sample data) does not demand specialized expertise	Knowledge of national auditing requirements is essential, but large parts of both planning and implementation can be carried out without this knowledge	Certification must be made by a locally authorized accountant	Poor
Statutory audit of public sector	Similar to statutory audit of companies but involves a different set of financial information and audit requirements	Inventory control and similar activities must be performed on-site	EDP is used intensively	Exchange of accounting records, on-site control of sample data and vouchers	Planning of control procedures is highly skilled work. Large part of the execution (e.g. control of sample data) does not demand specialized expertise	Knowledge of national auditing requirements is essential, but large parts of both planning and implementation can be carried out without this knowledge	Yes	Poor
Functional operational auditing	Auditing of operations of a particular function	Intensive knowledge of the particular function must be obtained on-site. This activity is often performed by an internal auditor, who is an employee	Use of EDP is generally not very important	Informal communication important	Highly skilled work	Not very important	None	Poor

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Special assignments of operational auditing	Auditing of a particular operational matter	Depends on the nature of the matter audited	Use of EDP is generally not very important	Depends on the nature of the matter audited	Highly skilled work	Not very important	None	Poor
Compliance audit	Determine whether an entity has complied with specific laws and regulations	Control and validation of information obtained must usually be done on-site	Use of EDP is generally not very important	Financial statements and other information on operations of the entity	Skilled work	Knowledge of local laws and regulations essential	None	Poor
Audit of financial statements	Audit of financial statements includes all activities of certification of obligatory periodic financial statements, e.g. control of procedures and sample data	Inventory control and similar activities must be performed on-site	EDP used intensively	Exchange of financial statements, vouchers and other documents in addition to oral documentation and examination on-site	Highly skilled work	Knowledge of national auditing is important, but large parts of both planning and implementation can be done without this knowledge	None	Poor
Audit of mergers	Reporting of methodologies and values used for an exchange (merger) and certification of fairness and relevance	Much can be done on the basis of audited financial statements but observations on site and review of subsequent events are necessary	EDP used for calculation of values	Financial statements and other information on companies involved	Most of the work highly skilled	Useful	Sometimes	Fair

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Audit of consideration other than cash given in connection with share issues	Attestation of valuation and of the assets of a company	Much can be done on the basis of audited financial statements but observations on-site and review of subsequent events are necessary	EDP used for calculation of values	Financial statements and other information on companies involved	Most of the work highly skilled	Useful	Yes	Fair
Expert testimony or expert witnesses	Clarification of technical questions in court hearings	Today physical presence is absolutely necessary	EDP not important (depending on the kind of technical questions)	Depends on the issue	Highly specialized and skilled work	Knowledge of national accounting rules essential	Sometimes	Poor
Prospective financial statements	Evaluation of prospective financial statements and underlying assumptions	No technical reasons for local presence	EDP used for evaluation of mechanical accuracy	Exchange of financial, production and sales statements	Skilled work	Information on local markets often important	Usually (depend on stock exchange regulations)	Fair
Auditing of EDP-based accounting systems	Testing characteristics of computer software	No technical reasons for local presence	EDP is used extensively	Exchange of software and documentation	Skilled work	Not important	None	Good
Reviews	Limited assurance of a (financial) statement	Less important than for statutory audit	EDP is used extensively	Exchange of accounting records and documents	Skilled work	Useful	Often	Some

Tax consultancy services

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Preparation of taxation accounts	Preparation of corporate and individual tax returns	No technical reasons for local presence	EDP used extensively, especially in the case of corporate clients	Records of economic trans-actions	Skilled or highly skilled work	Knowledge of national taxation rules is essential	Rare	Poor (possible but unlikely)
Tax planning	Evaluation of tax implications and suggestion of tax-efficient arrangements	No technical reasons for local presence	EDP used for calculation of values	Records of economic trans-actions	Skilled or highly skilled work	Knowledge of national taxation rules is essential	None	Poor (possible but unlikely)
Submission of tax declarations	Preparation and presentation of tax returns and declarations	No technical reasons for local presence	EDP used in some functions	Records of economic transactions	Skilled work	Knowledge of national taxation rules is essential	Rare	Poor (possible but unlikely)
Representation before tax authorities and court	Assistance to clients in meetings	Physical presence required	EDP not relevant		Skilled or highly skilled work	Knowledge of national taxation rules is essential	Sometimes	Poor

Management advisory services

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Software selection	Selection of software for accounting purposes	Important to gain an understanding of the requirements of the client through inquiries and observations. Traditionally some attendance required		Communication with the department of accounting.	Specialized knowledge required.	Some knowledge on national accounting rules beneficial	None	Fair
Hardware selection	Selection of hardware for accounting purposes	Important to gain an understanding of the business' needs, through inquiries and observations		Communication with the accounting department	Specialized knowledge required	Some knowledge of national accounting rules valuable	None	Fair
Application development	Development of software for accounting purposes	Vital to gain understanding of the requirements of the business through inquiries and observations		Intensive communication with the accounting department	Specialized knowledge required. Also less demanding working routines are involved	Some knowledge of national accounting rules useful	None	Fair
Implementation of IT systems and follow-up activities	Installation of EDP- based accounting systems and adaption to local requirements	No technical reasons for local presence, but intensive interactive communication necessary		Continuous intensive communication with the accounting department	Skilled work	Some knowledge of national accounting rules useful	None	Poor

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Budgeting	Preparation and auditing of budgets.	Close contact with client required	EDP is used extensively	Exchange of budgets and financial state-ments	Skilled work	Information on local markets useful	None	Poor
Organization reviews and problem assessment	Review of internal control and accounting structures	Intensive knowledge of the organization must be acquired through observations on-site	Limited use of EDP		Highly skilled work	Not important	None	Some
Human resource reviews	Review of accounting personnel	Interviews on- site necessary	Limited use of EDP	Inquiries to the management	Highly skilled work	Knowledge of local culture useful	None	Some
Inventory control	Implementation and review of inventory control systems	Some observations on-site are necessary	EDP used extensively	Information on organization of inventory cycles	Skilled work	Not important	None	Fair

Other services

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Advice on debt/equity restructuring	Identification of financing problems, and development and implementation of strategies	No technical reasons for local presence	EDP used extensively	Information on financial structure and potential sources for financing	Highly skilled work	Knowledge of local market useful in case of home-market-based enterprises	None	Fair
Advice concerning mergers and acquisitions	Identification of opportunities, facilitating merger plans and negotiations and providing financial projections	No technical reasons for local presence	Limited use of EDP	Information on firm strategies	Highly skilled work	Knowledge of local firms and markets may be useful in some cases	None	Fair
Personal financial planning	Planning and implementation of income tax, retirement, estate, investments, cash flow, insurance and educational financing	No technical reasons for local presence	EDP may be used for calculations	Information on personal needs and abilities	Skilled work	Knowledge of local taxation rules is vital	None	Poor
Business succession planning	Design strategies for transfer of business in the event of death, disability or retirement	No technical reasons for local presence	EDP not important	Legal firm structure and management resources	Highly skilled work	Knowledge of local laws and regulations is essential	None	Fair

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Executive selection	Evaluating the strengths and weaknesses in management and identification of key individuals to fill the gaps		EDP not important	Knowledge needed of company operations, organization and management	Highly skilled work	Knowledge of the local market for managers important	None	International recuitment fair. For national recruitment poor
Portfolio management	Maintain a suitable distribution of the client's portfolio	No technical reasons for local presence	EDP used extensively	Knowledge of financial needs and liquidity and risk preferences	Highly skilled work	Knowledge of local financial regulation and taxation useful	None	Good
Brokerage	Buying and selling financial assets	No technical reasons for local presence	EDP used extensively	Purchasing and selling orders	Highly skilled work		None	Good
Development of Financing Plans	Develop plans for financing of new investments, debt etc.	No technical reasons for local presence	EDP may be used for calculations	Information on financial needs	Highly skilled work	Knowledge of local financial sources is useful	None	Good
Trusteeship and fiduciary activities	Safeguarding of financial assets and safe deposits	Safeguarding of physical assets demands proximity to client	EDP only used in the case of electronic assets		Highly skilled work		None	Poor
Provision of staff	Provision of accounting staff supervised by the client.	Local presence needed	EDP not relevant	Accounting needs of the client	Highly skilled work		None	None

Product	Description	Need for local presence	Use of EDP	Need for communication	Skill level	Demand for local knowledge	Legal restrictions	Overall tradability
Legal advice	Advice on legal company structures, preparation of legal documents and assistance in legal actions	No technical reasons for local presence	Legal databases may be used	Exchange of documents and interactive communication	Highly skilled work	Knowledge of local laws and regulations essential in some cases	None	Poor
Product services	Offering of a prepackaged service products, e.g. training	Physical interaction needed in most cases	Depends on the sort of service product	Depends on the sort of service product	Highly skilled work	Depends on the sort of service product but generally not important	None	Depends on product

ANNEX 2

MANAGEMENT CONSULTANCY SERVICES: A PRODUCT-WISE DESCRIPTION AND ANALYSIS OF TRADABILITY

The interdisciplinary nature of consulting services implies that service products can be categorized in several different ways. As management consulting is a relatively unregulated industry, there is no official list of services. In this annex, the main groupings in principle follow the headings used by the European Association of Management Consultancies (Fédération Eurpoéenne des Associations de Conseils en Organisation - FEACO).

All products are described and characteristics relevant for the assessment of the tradability of the particular products are delineated. These characteristics are:

- **Need for local presence:** This column depicts activities which must be performed on site, and appraises the necessity of being on the premises of the client.

- **Use of EDP:** This column list examples of edp applications which are used in the production of this service.

- **Demand for local knowledge**: This column describes the kinds of local information, i.e. information relating to the local business or political environment, which affect the ability of the management consultant to perform a particular service in a competent way.

In the last column the overall tradability is assessed. Tradability is termed poor, possible, fair, good or excellent.

Management consultancy is a very skill-intensive industry and all consulting services require the employment of highly skilled specialists. Therefore, the required skill level is not directly addressed in the tables. A few supporting back-office activities such as maintenance of databases and secretarial functions are less skill-intensive, but these are not offered as consultancy products. These functions are also limited in scope. The consultants themselves constitute the vast majority of the employees in management consulting firms.

Moreover, legal restrictions are not important for the practice of management consultancy. In general, the few legal restrictions that exist relate to visa requirements for consultants coming from abroad.

General management

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tradability
Diagnostic survey	Examination of the organization in terms of weaknesses, strengths and development prospects. Diagnostic surveys can provide input to other management services	Interviews on-site constitute the major activity	Not important	Communication with all levels necessary		Some
Corporate strategy	Formulation of a corporate strategy based on existing and possible competitive advantages and technologies	Intensive of knowledge on the client's capabilities necessary	Databases on market data and benchmark analyses	Mostly with the upper echelons of the organization		Some
Structures and systems	Examination and redesign of organizational structure, information and decision-making systems	Interviews on-site constitute a major activity.	This activity includes selection and installation of management information systems	Communication with all levels necessary	Knowledge of local culture and management traditions is useful	Some
Corporate culture and management style	Assessment and improvement of the corporate culture and management style of the firm. What constrains and what stimulates a better performance	Interviews on-site constitute a major activity	Not important	Communication with all levels necessary	Knowledge of local culture and management traditions is essential	Poor
Innovation and entrepreneurship	Identification and implementation of organizational changes which can make the client more innovative	Intensive knowledge of the client's technological capabilities essential	Databases on markets and technologies	Communication with management and R&D departments	Knowledge of local culture and management traditions is useful	Poor

Financial and administrative systems

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tradability
Financial appraisal	Economic analysis (e.g. ratio analysis) of information retrieved from financial statements and accounts. This service is often provided by the auditor	Some general knowledge of the operations of the client is useful	EDP used for calculations. Databases are used for benchmark analyses	Communication with financial department and management	Knowledge of market conditions in the industry is important	Good
Working capital and liquidity management	Advice on the client's management of liquidity	Intensive knowledge of type and timing of revenues and expenses important. Some general knowledge of the operations of the client is useful	EDP used for calculations	Communication with financial department and management		Good
Capital structure and financial markets	Determination of the most effective capital structure of the client	General knowledge of the operations of the client is important	EDP used for calculations	Communication with financial department and management	Knowledge of local financial market conditions is useful	Good
Mergers and acquisitions	Identification of opportunities, facilitating merger plans and negotiations, provision of financial projections and valuation of partners involved	Information on the client's corporate strategy is essential	Use of business databases, such as Reuters TEXTLINE	Communication with management and financial department	Knowledge of local market financial conditions is useful	Fair
Capital investment analysis	Advice on investment decisions	Information on the client's corporate strategy and priorities is essential	EDP used for calculations. Information retrieved from financial databases. Investment decisions may be implemented on electronic trading systems	Communication with financial department and management	Knowledge of local market financial conditions is useful	Good
Accounting systems and budgetary control	Similar to bookkeeping services provided by accountants but with more emphasis on budgetary control	Intensive knowledge of type and timing of revenues and expenses important. Some general knowledge of the operations of the client is useful	EDP used for calculations	Communication with financial department and management	Knowledge of legal requirements for financial statements useful	Possible

Marketing consultancy

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tradability
Marketing strategy	Review of the client's marketing strategy including review of product line, price policy and customer base	Knowledge of the organization of production, customer base and market conditions is necessary	Databases linking profitability and marketing strategies	Communication with management and sales and marketing and production departments	Knowledge of local market conditions essential in the case of home-market industries	Fair
Implementation of marketing activities	Review of and advice on implementation of new product development, advertising, packaging, sales and distribution	Knowledge of the organization of sales and marketing departments is necessary	EDP systems with data on sales and stocks. Databases on customers are used for direct marketing	Communication with sales and marketing departments (and general manage-ment)	Knowledge of local market conditions essential in the case of home-market industries	Some
Market research	Analyses and survey of existing and potential markets. Mostly performed by marketing companies	No particular needs	Databases on market and products and suppliers	Communication with sales and marketing departments	Depends on the level of international orientation of the client	Good

Production and services management

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tradability
Product design	Advice on product design, utilization of materials, quality control and inventory control	Knowledge of the client's capabilities and customer base useful	CAD/CAM and a wide range of other specialized software products	Communication with departments of design and production	Not particularly important	Good
Production methods and organization	Advice on handling of materials, production planning jobs and work methods, setting performance standards and maintenance operations	Intensive knowledge of the client's production system is necessary	Used in flexible manufacturing systems, computer-assisted materials handling and production planning methods (e.g. Programme Evaluation and Review Technique or Critical Path Method). Databases used for setting performance standards	Communication with departments of planning and production	Not particularly important	Poor
Quality control	Advice on and implementation of quality control systems and other actions improving quality, e.g. training	Intensive knowledge of the client's production system is necessary. Knowledge of corporate culture useful	Many quality control systems are IT-based	Communication with planning and production (and marketing) departments	Not particularly important	Poor

Human resources

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tradability
Human resource planning	Clarification of needs and preparation of job descriptions. Definition of overall policies for recruitment, training and promotion	Intensive knowledge of\ all parts of the company is necessary. Local presence is an imperative	Inter-firm comparisons made with the use of databases	Communication with personnel and general management department	Knowledge of local working market, including legal and cultural conditions, necessary	Poor
Recruitment and selection	Advice on procedures and criteria applied for recruitment and selection. Search for executives (often done by specialized head-hunting companies)	Local presence is an imperative	Databases on personnel and candidates for executive posts used extensively	Communication with personnel and general management Department	Knowledge of local working market, including legal and cultural conditions, necessary	Poor
Human resource development	Advice on staff training and development, career development. Setting up systems for performance appraisal and proposing organizational changes which improve human resource development	Local presence is an imperative		Communication with department personnel and general management Department	Knowledge of local work market, including legal and cultural conditions necessary	Poor

Information technology and systems

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tradability
Advice on purchase of software and hardware	Selection of hardware solutions and standard software	Analysis of the client's needs must be based on knowledge of the organization of work routines	Not essential for production of the service itself	Communication with the specific department requiring new equipment and the computing department	Not important	Good
Adaptation of software products	Adaptation of standard software to the client's needs and system integration of existing software	Intensive knowledge of organization and work routines necessary	Used intensively	Communication with the specific department requiring new software and the computing department	Not important	Fair
Development of new software	Development of new software for specific tasks. Either built from scratch or based on the software solution propriety of the consulting firm	Knowledge of organization and working routines necessary	Used intensively	Communication with the specific department requiring new software and the computing department	Not important	Good
Outsourcing	Implementation of various computing tasks. Not really a consulting service but provided by many management consulting firms	Need for regular transmission of data	Used intensively	Communication with the specific department requiring the services, most often the accounting department	Not important	Good

Economic studies

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tra-dability
Economic studies	Often broader studies of conditions affecting the client's markets and socio-economic environment	Not important	Databases used extensively	Most often general management	Only important for analysis of local conditions.	Very good

Ecology and environmental issues

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tradability
Waste management and pollution	Advice on cleaner production technologies and cleaning of waste	Knowledge of the flow of materials in the client's production system is necessary		Communication with production department	General knowledge of climatic and environmental conditions useful in some cases	Good
Regulatory environmental issues	Advice on environmental rules and regulations	Not necessary		Communication with production department	Intensive knowledge of local rules and regulation is necessary	Poor
Working environment and safety	Advice on improvements in worker's safety at work. Proposal of measures for increasing job satisfaction	Knowledge of the organisation of the client's production system is necessary	Databases on past accidents, toxic chemicals etc.	Communication with personnel and production departments	Knowledge of the local working culture and regulation of work safety is necessary	Poor

Project management

Product	Description	Need for local presence	Use of EDP	Levels of communication	Demand for local knowledge	Overall tradability
Project management	Management and supervision of a specific project	Presence on the location for the project absolutely necessary	Depends on the nature of the project	Depends on the nature of the project	Depends on the nature of the project	Good

ANNEX 3

ENGINEERING CONSULTANCY SERVICES: A PRODUCT-WISE DESCRIPTION AND ANALYSIS OF TRADABILITY

In this annex, the most important consulting engineering services are described, and a product-wide analysis is provided of their tradability (technical, economic and political/regulatory). Engineering consultancy service products can be classified in various ways. The approach adopted here is to classify them according to the life cycle of a typical investment or construction project. Consulting engineering products are used in all stages of the life cycle of physical projects, which can be identified as follows:

- Identification
- Pre-feasibility
- Feasibility (including environmental impact assessment and risk analysis)
- Appraisal
- Basic design
- Detailed design
- Supervision
- Construction management
- Commissioning
- Operation
- Maintenance
- Rehabilitation
- Decommissioning
- Removal

The actual division of the life cycle of a particular project may vary from the above-mentioned stages, depending on the physical nature of the project and the sector of the economy involved. Also, the execution of the different stages can be divided between owner/client, engineering consultant and contractors in different ways.

In the tables that follow, the different engineering consultancy products are briefly described, the characteristics relevant for assessment of the tradability of the particular products are delineated, and the overall tradability of each product is noted. The following characteristics affecting tradability are examined:

- **Need for local presence** relates to the activities which must be performed on-site, and appraises the necessity of being on the premises of the client.

- **Use of EDP** depicts the status of electronic data processing (edp) applications and delineates the processes in which edp is used most extensively. The table also indicates whether the data processing equipment typically utilized is relatively simple or advanced.

- **Need for communication** depicts the type of information which will typically be exchanged between the client and the accountant during performance of the service.

- **Skill level** indicates the level of qualifications needed to perform particular tasks. This column also indicates whether very experienced or skilled persons are required to carry out the tasks involved in delivering the product.

- **Demand for local knowledge** characterizes the types of local information which affect the ability to perform a particular service in a competent way.

- **Legal restrictions** briefly indicate restrictions which are important for the delivery of engineering consultancy services.

Identification and pre-feasibility

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Identification	To identify the need for new investments	Yes, most often the operator will be responsible for the work	Limited to standard software	Normal telephone and fax are sufficient	Wide-ranging general and expert knowledge necessary; use of experienced staff	Local knowledge essential in order to ascertain real needs	Local operators may be favoured	Poor
Pre-feasibility	To carry out preliminary evaluations in order to decide whether feasibility studies will be initiated	Yes, the work will often be carried out in close cooperation between operator and consultants	Limited to standard software and small amount of presentation of drawings	Normal telephone and fax are sufficient	General and expert knowledge necessary; use of experienced staff	Local knowledge required in order to ascertain real needs	Local operators may be favoured	Poor
Appraisal studies	To carry out independent evaluation of the projects on behalf of financial institutions	Normally, site missions are required	Limited to standard software and portable computers	Normal telephone and fax	General and expert knowledge necessary; use of experienced staff	Local knowledge essential; however, this can be obtained in experienced companies	The work involves high levels of confidentiality	Good

Feasibility studies

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Feasibility studies	Study of technical and economic feasibility	Required for collection of information	Use of simple PC systems	Many persons are usually involved, which makes communication important	Experienced personnel are often used for studies	Yes, required for assessment of economic and technical aspects	No	Good
Surveys	Surveys of location for investment, including geotechnical aspects	Yes, remote sensing is only used as supplement	Extensive use of complicated EDP systems	Yes; in the future also need for transfer of large amounts of data and use of remote sensing	Specialist companies with own personnel	Only as support for logistics	Can be sensi-tive to military concerns	Good
Economic and environmental assessments	Special studies as supplement to, or part of, feasibility studies	Yes, at least to identify environmentally sensitive areas	Use of simple PC systems is normal; in special cases more advanced systems are used	Contact with head office is important	Experienced personnel are often used	Local knowledge useful for assessment of data	No	Good

Basic design

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Preparation of descriptions and drawings	Preparation of design sufficient for tendering and estimation of cost and schedule	Not mandatory, but close coordination with operator is necessary	Yes, use of modern drafting systems	Normal communication to client, plus transfer of drawings	Standard, all levels of skills are necessary	Not essential	Depending on availability of local consultants	Fair
Calculations	Carry out calculations as required for the preparation of drawings and specifications	Not mandatory	Yes, often use of advanced calculation programmes	Transfer of data between calculation programmes and drafting	Standard, all levels of skills are necessary	Not essential	Some countries require approval	Fair
Surveys	Carry out more detailed survey than used for feasibility study	Yes, remote sensing is only used as supplement	Extensive use of complicated EDP systems	Yes; in the future also transfer of large amount of data and use of remote sensing	Specialist companies with own personnel	Only as support for logistics	Can be sensitive to military concerns	Good

Detailed design

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Preparation of descriptions and drawings	The detailed design is carried out as direct basis for manufactu-ring and construction	Not necessary; however, close relations with construction site have become more common because of contracts including procurement and construct responsibilities	Yes, advanced drafting systems, often with use of 3-D modelling	Yes, involvement of many persons and advanced drafting systems	All levels of skills required. The project team may be very large with more than 100 persons participating	Not necessary, as most knowledge has been provided in feasibility studies and basic design	Depending on local availability. International tendering often required	Good
Detailed calculations	Final calculations need to have stringent standards for accuracy	Not necessary	Yes, use of advanced calculation programmes	Yes, many persons involved	All levels of skills are required	Not necessary	Some countries require approval	Good
Quality assurance	Control of all calculations and drawings; may involve independent control from different companies	Not necessary	Yes, use of advanced calculation programmes	Yes	Experienced personnel for overall control and specialists for standard checking	Not necessary	No	Good

Supervision

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Supervision	To verify that the actual construction or manufacturing is according to specifications and design	Yes, generally supervision is carried out at the manufacturing or construction site	Not essential, mostly used for administrative purposes, but becoming more important	Yes, normal communication tools such as telephones and fax	Combination of experienced managers and young professionals	Yes	No	Poor
Commissioning	To plan the work associated with putting the plant or construction into operation	Yes	Yes, for data collection	Yes, normally commissioning involves a large number of people for a short time	All levels	Yes	Depends on type of plant	Fair

Construction and procurement management

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Procurement management	Procurement management includes tendering for supply of goods and services, now often based on international procedures	Knowledge of local contractors and language is necessary	Only for administrative purposes	Yes, standard communication	Requires experienced personnel, engineers, lawyers and administrative personnel	Knowledge of local contractors	No	Poor to fair
Construction management	Management of contracts, approval of invoices etc.	Yes, large number of meetings, etc.	Only for administrative purposes	Yes, standard communication	Routine operations combined with experience from contractors	Yes, knowledge of formal and informal procedures and traditions	No	Poor to fair

Operation and maintenance

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Operation	To operate the final project, normally carried out by the owner as operator	Yes, normally operation is carried out on the site	Yes, mostly for administrative purposes and for supervisory control and data acquisition	Yes, standard communication	Normal	Yes	Yes, taxation, etc.	Poor
Systematic maintenance	To plan maintenance on a systematic basis	Yes, for data collection	Yes, collection of data and updating of databases	Yes, sometimes on-line measurements can be used	Normal	Yes		Poor
Training	To train local personnel in operation and maintenance	Yes	Yes, use of simulation tools and computerized education	Yes	High	Yes		Good

Rehabilitation

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Rehabilitation	To evaluate the need for rehabilitation, and prepare for implementation of rehabilitation	Yes	Use of standard equipment	Yes, standard communication	Normal, depending on type of project	Yes	No	Fair

Decommissioning and removal

Product	Description	Need for local presence	Use of EDP	Need for communication	Skills level	Demand for local knowledge	Legal restrictions	Overall tradability
Decommissioning	To plan the work associated with taking a plant or construction out of operation	Yes	Use of standard equipment	Yes, standard	Normal	Yes	Depends on type of plant	Poor
Removal	To plan the work associated with the complete removal of plant or construction	Yes	Use of standard equipment	Yes, standard	Normal	Yes	Depends on type of plant	Poor

Annex table 1

Countries	01.A.a	01.A.b	01.A.c	01.A.d	01.A.e	01.A.f	01.A.g	01.A.h	01.A.i	01.A.j	01.A.k	Total
Antigua and Barbuda	X	X	X	X	X			X				6
Argentina	X	X		X	X							4
Australia	X	X	X	X	X	X	X	X	X			9
Austria	X	X	X	X	X	X	X	X	X	X	X	11
Barbados	X							X				2
Belize								X				1
Botswana				X	X	X		X	X	X		6
Brazil		X		X	X		X					4
Brunei Darussalam		X						X				2
Bulgaria	X	X		X	X	X		X	X			7
Burundi								X	X			2
Canada	X	X	X	X	X	X	X					7
Chile	X	X		X	X							4
Colombia	X	X	X									3
Congo, R. P.								X	X			2
Costa Rica								X				1
Cote d'Ivoire					X							1
Cuba	X	X			X							3
Cyprus		X	X									2
Czech Republic	X	X	X	X	X	X	X	X	X			9
Djibouti					X							1
Dominican Republic	X	X	X	X	X	X	X	X				8
Ecuador	X	X	X	X	X		X					6
El Salvador	X	X	X	X	X							5
European Community	X	X	X	X	X	X	X	X	X	X		10
Finland	X	X	X	X	X	X	X		X	X		9
Gambia	X	X	X	X	X	X	X	X	X	X		10
Guinea									X			1
Guyana	X	X		X	X			X				5
Haiti									X			1

Countries	01.A.a	01.A.b	01.A.c	01.A.d	01.A.e	01.A.f	01.A.g	01.A.h	01.A.i	01.A.j	01.A.k	Total
Hong Kong		X	X									2
Hungary	X	X	X	X	X	X	X	X				8
Iceland	X	X	X	X	X	X	X		X		X	9
India					X							1
Indonesia			X	X	X	X						4
Israel	X	X		X	X	X	X					6
Jamaica	X	X	X	X	X		X	X		X		8
Japan	X	X	X	X	X	X	X					7
Korea, Republic of		X	X	X	X	X	X					6
Kuwait				X	X	X	X					4
Lesotho	X	X	X	X	X	X	X	X	X	X		10
Liechtenstein	X	X	X	X	X	X	X					7
Malawi		X						X		X		3
Malaysia	X	X	X	X	X	X	X	X				8
Maldives		X										1
Mexico		X		X	X			X		X		5
Mongolia		X			X							2
Morocco		X			X							2
New Zealand	X	X	X	X	X				X			6
Norway	X	X	X	X	X	X	X	X	X	X		10
Pakistan					X	X		X				3
Panama	X	X	X	X	X	X	X					7
Papua New Guinea	X	X		X	X							4
Peru		X		X	X						X	4
Poland	X	X			X			X	X	X		6
Qatar		X	X	X				X	X			5
Romania	X			X	X		X					4
Rwanda	X							X				2
Senegal				X	X			X				3
Sierra Leone	X	X	X	X	X	X	X	X	X	X	X	11
Singapore		X	X	X	X			X	X		X	7
Countries	01.A.a	01.A.b	01.A.c	01.A.d	01.A.e	01.A.f	01.A.g	01.A.h	01.A.i	01.A.j	01.A.k	Total
Slovak Republic	X	X	X	X	X	X	X	X	X			9

Slovenia	X	X		X	X	X		X				6
Solomon Islands	X	X		X	X							4
South Africa	X	X	X	X	X	X	X	X	X	X		10
Swaziland					X	X		X				3
Sweden	X	X	X	X	X	X	X	X	X	X		10
Switzerland	X	X	X	X	X	X	X	X	X			9
Thailand	X	X		X	X		X					5
Trinidad and Tobago	X							X	X		X	4
Turkey	X	X		X	X							4
United Arab Emirates		X	X	X	X		X		X			6
United States	X	X	X	X	X	X	X					7
Venezuela	X	X		X	X	X	X					6
Zambia		X						X		X		3
TOTAL	45	56	34	50	58	32	33	38	26	15	6	393

Source: Based on information provided by the WTO Secretariat.

Legend:

01.A.a	Legal services
01.A.b	Accounting, auditing and bookkeeping services
01.A.c	Taxation services
01.A.d	Architectural services
01.A.e	Engineering services
01.A.f	Integrated engineering services
01.A.g	Urban planning and landscape architectural services
01.A.h	Medical and dental services
01.A.i	Veterinary services
01.A.j	Services provided by midwives, nurses, physiotherapists
01.A.k	Other

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