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Restructuring: Implications  
for Small Firms**

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## **GLOBAL INDUSTRIAL RESTRUCTURING: IMPLICATIONS FOR SMALL FIRMS**

Kentaro Sakai

Global industrial restructuring in the current era is characterised by an increase in cross-border strategic alliances, mergers and acquisitions (M&As) and other types of business networking. This presents new international opportunities for small and medium-sized enterprises (SMEs). Cross-border business networking allows SMEs to expand their markets and distribution channels, to realise economies of scale and scope in products and processes, and to profit from the sale and licensing of technology-based assets. Governments can help SMEs realise the benefits of global restructuring by maintaining a flexible business environment and openness in foreign investment and trade, fostering inter-firm networking, and upgrading SME capabilities to participate in international networks and foreign markets. This paper assesses the drivers of global industrial restructuring and the impacts on small firms. It presents a detailed sectoral analysis of small-firm participation in cross-border strategic alliances, including in software, pharmaceuticals, telecommunications, computer-related services, wholesale trade and financial services.

## **LES CONSEQUENCES DE LA RESTRUCTURATION INDUSTRIELLE MONDIALE SUR LES PETITES ENTREPRISES**

Kentaro Sakai

La restructuration industrielle à l'échelle mondiale se caractérise aujourd'hui par une multiplication des alliances stratégiques et fusions-acquisitions (F&A) transfrontalières ainsi que par le développement d'autres types de réseaux d'entreprises. Cette évolution ouvre aux petites et moyennes entreprises (PME) de nouvelles perspectives au niveau international. Les réseaux d'entreprises transfrontaliers leur permettent d'élargir leurs marchés et leurs circuits de distribution, de réaliser des économies d'échelle et de gamme au niveau des produits et des procédés et de retirer des bénéfices de la vente d'actifs à forte intensité technologique et de la concession de licences. Les pouvoirs publics peuvent aider les PME à recueillir les fruits de la restructuration industrielle mondiale en veillant à assurer aux entreprises des conditions d'activité souples en même temps qu'une certaine ouverture aux échanges et aux investissements étrangers en encourageant la formation de réseaux d'entreprises et en favorisant la modernisation des PME pour que celles-ci soient en mesure d'entrer dans les réseaux internationaux et sur les marchés étrangers. Cet ouvrage étudie les facteurs qui déterminent la restructuration industrielle mondiale et ses conséquences sur les PME. Il présente une analyse sectorielle détaillée de la participation des petites entreprises aux alliances stratégiques internationales, dans les domaines suivants : logiciels, produits pharmaceutiques, télécommunications, services informatiques, commerce de gros et services financiers.

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## SUMMARY

Global industrial restructuring in the 1990s is characterised by the increasing specialisation of firms and their extensive outsourcing and networking strategies. Heightened global competition, growing technological complexities and evolving markets and consumer tastes are driving restructuring of firms of all sizes. The trend towards downsizing and focusing on core competencies is accompanied by growing alliances, mergers and other types of business networks with foreign partners. While various business linkages, especially cross-border alliances and mergers, may accelerate concentration and consolidation of products and services suppliers at international level, the trend has also presented new global opportunities for small and medium-sized enterprises (SMEs). Small firms with quality tangible and intangible assets, such as niche products and advanced technologies, are becoming partners in international strategic alliances, targets of cross-border mergers and acquisitions, specialised suppliers to multinational enterprises (MNEs), and participants in actual and virtual business networks at global level. Cross-border business networking has allowed SMEs to expand their markets and distribution channels, to realise new economies of scale and scope in products and processes, and to profit from the sale and lease of technology-based assets.

The degree of globalisation of SMEs differs significantly by sector, reflecting the fact that they consist of a diverse and heterogeneous set of firms. While small firms in traditional services still predominantly serve local markets, some, especially knowledge-based small firms, have been particularly active in cross-border strategic alliances in the 1990s. In the past decade, there have been at least 2 400 international alliances involving SMEs. Alliances in sectors based on information and communications technology (ICT) such as software, telecommunications and computer-related services are most prominent. There are also growing international alliances in pharmaceuticals, which often involve small biotechnology firms, and in business services. Although there are a few alliances involving only SMEs, most involve both large and small firms.

In order to maximise the benefits of global industrial restructuring for SMEs, it is essential that governments maintain open policy towards international trade, investment, alliances and other channels for new business opportunities. On the other hand, adjustment costs of global restructuring and other negative impacts of international business linkages, such as anti-competitive effects, should be minimised. In addition to ensuring favourable framework conditions for both local small firms and foreign entrants (*i.e.* a potential business partner), priority should be given to fostering business networking and upgrading SME capabilities so that small firms can compete in global markets. The public sector can play a catalytic role in encouraging successful networking of SMEs. Governments can promote the benefits of international networking, support online networks and other approaches to helping small firms identify foreign partners, and provide appropriate guidance and support to globalising SMEs.

A major challenge for governments is the evaluation of SME policies. Although assessing the real impact of each policy measure is not an easy task, all governments can benefit from sharing their own experiences, both successful and unsuccessful, to develop mutually beneficial policy frameworks for globalising SMEs. Sharing better policy practices helps to shape policies that can allow for greater benefits of cross-border business networking, while addressing the costs and challenges arising from global industrial restructuring.

## GLOBAL INDUSTRIAL RESTRUCTURING: DRIVING FORCES

Industrial restructuring is characterised by the increasing specialisation of firms and their extensive outsourcing strategies (OECD, 2001*a*). Facing global competition, rapid changes in technologies, evolving market conditions, and rising research and development (R&D) costs, firms are pursuing specialisation, focusing on their core competencies and outsourcing their non-core businesses. Although specialisation and the pursuit of niche markets have been a key strategy for high-growth small and medium-sized enterprises (SMEs), the fiercer competitive environment since the 1990s has pushed firms of all sizes towards organisational restructuring. For example, Nokia (Finland), the top mobile telephone manufacturer which supplies one-third of the world market, turned itself from a conglomerate producing paper and other materials into a telecommunications company in the early 1990s. Many multinational enterprises (MNEs) are reorganising into group-type structures consisting of highly specialised business units.

As firms pursue specialisation and seek external complementary resources to compete in global markets, more small firms have become involved in international business networks. The global restructuring trend can have negative impacts on (less competitive) small firms, including greater exposure to fierce international competition and substantial adjustment costs. Industrial restructuring through various types of business linkages, especially cross-border alliances and mergers and acquisitions (M&As), may accelerate concentration and consolidation of products and services suppliers at a global level. On the other hand, it has also opened up international business opportunities for SMEs with quality tangible and intangible assets, such as niche products and services, advanced technologies and market knowledge.

Among the driving forces underlying global industrial restructuring discussed below, the impact of the Internet (part of the technology factors) can be both positive and negative for SMEs and international business networking in general. The Internet can reduce the costs of cross-border co-operation among firms and offer new networking and marketing opportunities to small firms. On the other hand, the medium can represent an additional burden for SMEs. For example, if the major buyers in an industry set up a business-to-business (B2B) online exchange and agree to buy only in that market, they can effectively exclude small suppliers, some of which may not be able to adapt a particular system platform of the exchange. The Internet can provide a powerful enabling tool for small firms, but it may not significantly change their relationship with larger companies in the short-run.

### **Economic factors**

Intensified global competition in many manufacturing and service sectors has been a major factor in industrial restructuring. Many cross-border alliances and mergers are aimed at opening up markets and pooling resources to confront competitors. Large multinationals entering foreign markets have sought access to intangible assets, such as in-depth knowledge of local markets and customers, through partnering or acquiring small firms. Since many services require substantial investments to establish a critical mass in targeted markets, forming alliances with local SMEs to exploit their customer base and market knowledge is a viable option for new entrants. Thus, many smaller firms with strengths in local markets have become globalised through joining forces with MNEs in sectors ranging from telecommunications to financial services including real estate management.

Local sourcing by multinationals is also pulling SMEs into cross-border business arrangements. Large manufacturing firms in automobiles, electronics and other sectors are pushing their domestic suppliers to establish international supply networks. They are also seeking localised supply sources. Firms may choose national sourcing owing to local content requirements, but also because geographical proximity with suppliers facilitates just-in-time delivery of components. In order to maximise the overall efficiency of production, MNEs may purchase parts, inputs and services from indigenous small firms through long-term agreements. Most business services, particularly those based on information and communications technologies (ICT), require a local presence and this has provided business opportunities for SMEs.

Alliances with large international distributors, such as trading companies and cargo delivery services, have united some smaller firms in global distribution networks (**Box 1**). Small developers and manufacturers of unique products can exploit the strong brand names and large sales forces of MNEs by providing them with exclusive marketing rights. This has often been the case in the software and pharmaceuticals sectors. Being a major supplier for highly globalised sectors, such as automobiles and telecommunications, assures small manufacturers a larger scale of marketing and distribution.

SMEs also benefit from their cross-border alliances in terms of financing. SMEs involved in costly research activities, such as biotechnology start-ups and software companies, can trade their technological expertise to larger firms in return for investments in current R&D projects as well as for future breakthroughs. In the pharmaceuticals sector, large multinational drug companies have provided substantial sums to smaller firms through minority equity purchase of these promising ventures or through one-off payments for a particular research activity. In the United States, smaller firms in telecommunications, energy/environmental systems, computer software and hardware, and biotechnology/biomedical fields are receiving seed capital through strategic partnering with international firms (Carayannis *et al.*, 2000). Corporate venturing is becoming a major source of funds for small, high-technology firms and an entry point to global alliances and markets.

### **Box 1. Export through alliance with a trading company**

*Oo-oka corporation* (Japan) is a small gears manufacturer with 200 employees specialised in those for automobile manual transmissions. While operating two factories in Japan, the company has no sales forces abroad: it exports through a long-term sales/marketing alliance with *Kanematsu*, a Japanese trading company with 700 employees. *Kanematsu*, trading in more than 40 countries, has aggressively promoted small firms' high-quality products worldwide for years, and the *Oo-oka-Kanematsu* alliance started more than 15 years ago. The strength of *Oo-oka* products (*i.e.* gears) includes durability, small size and smooth shift feel. The alliance has won supply contracts with major automobile producers, including General Motors (United States), DaimlerChrysler and Volkswagen (both Germany).

The two allied companies have a shared goal: JPY 5 billion (USD 40 million) worldwide sales by 2005. The latest supply order was received from Peugeot Citroen Automobiles SA (France) in August 2001, for the purchase of 400 000 six-speed gears (valued at USD 2.5 million) per year. The alliance continues to seek export opportunities in the global market and expand sales of this small company manufacturing high-quality products.



## Technology factors

Technology is driving the internationalisation of small and large firms in different ways, owing to the growing ease of communications and the high cost of research and development. New communication tools such as the Internet have reduced the costs of establishing co-operative linkages with other firms and enable companies to reach potential business partners beyond their national borders. It can also provide a powerful means to increase visibility and promote unique products and technologies in global online markets. These tools allow cross-border joint R&D projects to be managed in a feasible and efficient way. Firms in different locations can share know-how, information, distribution networks and other assets simultaneously. They can adopt and adapt without delay another firm's knowledge assets, such as new product designs and ideas. Rapid ICT advances have created a more favourable business environment for partnerships and spurred growth in international strategic alliances.

At the same time, the soaring costs of research and development, coupled with the uncertainties of technological change, force firms to co-operate in global markets in order to share resources and risks for developing new products (Duysters *et al.*, 1998). For example, high R&D costs for developing new generations of drugs are a major driving force behind recent alliances in the pharmaceuticals sector. Technology-related alliances among firms are generally aimed at gaining economies of scale and scope in R&D. Many smaller companies and laboratories need capital to maintain their technological advantage in specific fields. This has prompted alliances between well-capitalised larger companies and smaller firms with unique skills or technologies, as in the biotechnology sector.

The growing complexity of technology commonly requires firms to co-operate with others in different sectors (OECD, 2000a). Even the large leading firms in an industry cannot have expertise in all fields, so that successful innovation requires mutual learning through co-operative networks, often involving small technology-based firms. Technological change also tends to shorten product life cycles, and small innovative firms with niche products, which can better respond to rapid change in technology and customer needs, are involved in cross-border alliances. In the software sector, the dominance of small software developers will be accelerated by the move to component-based software and higher specialisation; this, in turn, will foster more strategic alliances and further globalisation of software supply (Nowak and Grantham, 2000). Pharmaceutical companies use alliances to outsource a major share of R&D and clinical testing of new drugs in order to accelerate needed product breakthroughs.

Technological change creates new markets and business opportunities. The recent surge of alliances in the telecommunications, media and information industries reflects efforts to capture new markets created by the growth of the Internet and mobile telephony and to provide more integrated global services. An increasing number of firms have entered into online businesses, including business-to-business (B2B) and business-to-consumer (B2C) electronic commerce. Small firms specialised in Internet support services, such as Web page design and system development for electronic transactions, have joined international alliances as technological partners. Growing Internet services have also raised new technological challenges, such as online copyright protection, permitting small firms to become leaders in this specialised field (**Box 2**).

Cross-border R&D alliances are also effective for developing global product and system standards with potential competitors. In high-technology sectors, such as electronics and information technology, the formation of alliances tends to be cyclical. The early stages of new technological systems, during which time no dominant design or standards exist, are characterised by uncertainty and large numbers of strategic alliances. Later, as a dominant design emerges and economies of scale and standardisation become more evident, the number of co-operative ventures diminishes (Pyka, 2000). Creating a new global product standard and holding a patent increases the long-term prosperity of firms in high-technology sectors, regardless of their size. Once a breakthrough product or system (and a possible

candidate for a new global standard) is developed, an allied company, including small firms, can exploit its partners' assets, including its sales and marketing networks.

### **Box 2. New technology and SME globalisation**

*InterTrust Technologies* (United States) is a leading small developer (190 employees) of a general purpose digital rights management (DRM) platform. This serves as a technological foundation for providers of digital information, including music, video, software, games and publications. Competing with large software companies in the segment, the company holds numerous patents in the area of trusted systems technology and peer-to-peer rights management, and it licences its DRM technologies in the form of software and hardware. The company and its partners offer online digital information services and applications, and collectively form a global commerce system, the MetaTrust Utility, through which InterTrust receives licensing fees from its partners.

The company maintains more than 40 domestic (US) and cross-border alliance partners, including AmericaOnline (AOL), Universal Music Group, Compaq, Texas instruments (all US firms), Sony, Mitsubishi (both Japanese), Nokia (Finland), Philips (Netherlands) and Samsung (Korea). As online free file-swapping services, such as music downloading offered through Napster (United States), have faced legal complaints from intellectual property owners, *e.g.* big record labels, software firms see online copyright protection as a business opportunity. For example, in April 2001, RealNetworks (United States), a software company with 1 000 employees, established a joint venture to create a platform for online music subscription services with AOL, EMI (United States) and Bertelsmann AG (Germany). Other computer giants, such as Microsoft and IBM, have incorporated copyright protection schemes into their products, and smaller firms, like InterTrust, have also tried to get ahead in copyright protection technologies.

### **Governmental factors**

Market liberalisation and deregulation across the OECD area are accelerating the process of industrial globalisation. As globalisation heightens the interdependency and interlinkage of economies, cross-border business collaboration and partial foreign ownership of national enterprises are becoming the norm (OECD, 2001*a*). Regulatory reform in regulated industries, such as telecommunications and finance, plays an important role in the increase in global alliances by creating new markets and business opportunities.

Integration of regional markets in Europe and North America has encouraged firms to expand their operations geographically, leading to new sales and marketing alliances. Joining a winning network or alliance at global level is becoming crucial to the survival of large and small firms in a number of sectors. In particular, the introduction of the euro may accelerate alliance formation throughout the Euro Zone. The euro is likely to reduce exchange rate risk and transaction costs across the European Union and support trade and business expansion. It will increase price transparency in the Euro Zone, thereby enhancing competition and promoting industrial restructuring. It may also promote more co-operative research and development activities among European partners.

Globalisation and liberalisation are prompting changes in corporate governance that facilitate cross-border alliances in a broader range of countries. Some countries (*e.g.* Japan, Korea, France, Germany) previously had more tightly knit corporate governance regimes based on close relations with other firms, suppliers and banks, and were characterised by higher levels of cross shareholdings. There is now a trend towards more widely dispersed ownership and greater transparency. While changes in

corporate governance are increasing the responsiveness and flexibility of large firms, they also raise the level of competition in product markets with effects on smaller suppliers. Restructuring of MNEs and their established supply chains has led small suppliers to diversify their business partners, both at national and international levels. For example, Nissan, the third carmaker in Japan has sold all cross-held shares of all but four affiliated suppliers and demanded price reductions of 20% by 2002. While some smaller suppliers closed, most medium-sized and larger suppliers (with 1 000 employees on average) formed alliances or merged with their equivalents to improve production efficiency and enter foreign markets.

## SMEs AND GLOBAL RESTRUCTURING

Many SMEs are becoming increasingly globalised, although some continue to focus on local markets. About one-fifth of manufacturing SMEs in OECD countries draw between 10% and 40% of their turnover from cross-border activities. SMEs contribute between 25% and 35% of world manufactured exports and account for a smaller share of foreign direct investment (FDI) (OECD, 1996, 2000*b*). As large MNEs outsource various business activities both in manufacturing and in business services, small firms gain growing business opportunities. In addition, networking among themselves and with larger firms allows SMEs to overcome size constraints and go global.

While some small firms seek larger business partners to exploit the latter's international market reach, services coverage and brand names, other SMEs, especially those knowledge-based in ICT and biochemical sectors, have increasingly been approached by large MNEs. Many large firms are now willing to pay for small firms' intellectual properties, such as leading-edge technologies, market knowledge and expertise as well as for their high-quality niche products and services. As a result, small firms with such assets have received substantial financing through alliances (including licensing), acquisitions and long-term supply agreements, which sustain their (sales) growth and further R&D activities for future breakthroughs. The traditional vertical relationship with large firms is also changing to a more bilateral partnership with mutual learning among networked firms.

Small firms are involved in global industrial restructuring in several ways, including as: *i*) partners in international strategic alliances; *ii*) participants or targets in cross-border mergers and acquisitions; *iii*) specialised suppliers to multinational enterprises; *iv*) members of globalised informal networks; and/or *v*) participants in electronic networks.

### Strategic alliances

In recent years, SMEs have become more active participants in cross-border strategic alliances across a range of sectors, manufacturing as well as services. Strategic alliances are co-operative arrangements between independent firms based on business contracts to enhance the competitive strategies of the participating enterprises. The allied firms trade mutually beneficial resources such as technologies and skills. Alliances can be for joint research and development, manufacturing, marketing, sourcing of inputs, and/or shared distribution. A major advantage of alliances is their flexibility – they can be limited to certain functional areas of the allied firms and can be modified or even dissolved as the business environment changes (Kang and Sakai, 2000).

Strategic alliances can involve minority equity purchase or transfers between allied firms, including minority cross-shareholding. Technology transfer and provision of manufacturing and/or marketing rights often involve licensing agreements. Joint ventures are a type of strategic alliance by which a third company is established, usually mutually owned by the allied firms.

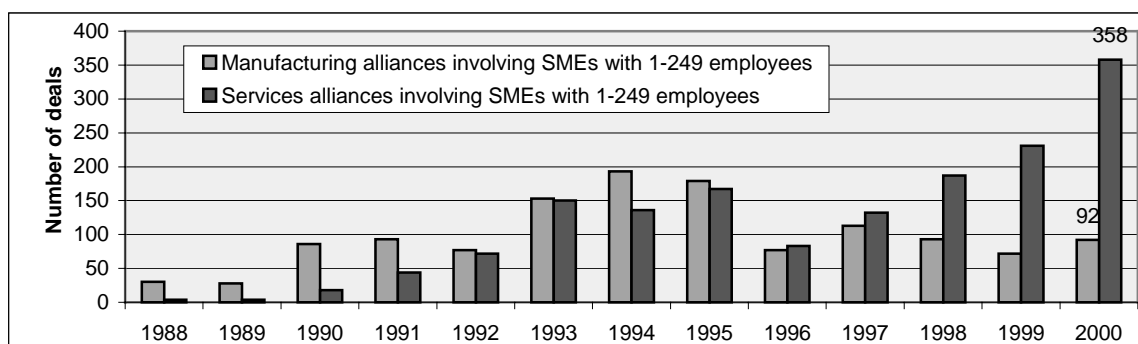
Through international alliances with larger firms, SMEs may obtain access to financial resources or complementary assets such as broader distribution channels, sales forces and well-known brand names, which they might otherwise have difficulty establishing. On the other hand, large firms, facing rapid

changes in technologies and customer needs and shorter product life cycles, cannot cover all product development and service activities, and have sought alliances with SMEs to fulfil specific needs. For example, in the software and pharmaceutical sectors, small firms with leading-edge technologies and expertise have been called into joint research and product development with large firms. In many cases, small firms have granted a technology licence or exclusive marketing rights for their advanced technologies or new products to large computer and drug companies. In services such as telecommunications and finance, large firms have expanded their geographic coverage and number of customers through alliances with local small firms. By partnering with SMEs, large firms can economise on R&D, minimise the lead time for new products and serve emerging markets. They also gain new niche business and product lines and other assets such as technologies.

Technology-based small firms have gained substantial capital (*e.g.* licensing fees) through international alliances, and selling their intellectual property rights to foreign partners. Technology transfer and provision of exclusive and non-exclusive marketing and manufacturing rights of their product are an effective strategy for small firms to secure funding for further innovation and research activities. Many small biochemical companies and software developers have raised a large portion of financing for R&D activities through such arrangements with large partners. In services such as telecommunications and finance, local small firms have attracted foreign MNEs wishing to exploit their customer base and knowledge of the market.

Cross-border alliances involving SMEs (1-249 employees) have increased in the last decade, particularly in service sectors (**Figure 1**). Total alliances including smaller firms numbered 2 400 in the 1990s according to the Thomson Financial database (**Box 3**). This accounts for 5% of the total 42 000 international alliances in the decade and may under-report small-firm involvement. More than 1 300 of these alliances took place in the latter half of the decade, with 450 deals in 2000. From 1995 to 2000, the 1 160 alliances in services outpaced the 630 in manufacturing, which contrasts with the predominance of manufacturing alliances in the first half of the decade. During the period 1995-2000, small firms with 1-49 employees joined 440 deals (140 in manufacturing; 300 in services); medium firms with 50-249 employees participated in 1 360 deals (490 in manufacturing and 870 in services).

**Figure 1. Cross-border alliances involving SMEs, 1988-2000**



Source: OECD, based on Thomson Financial.

## Mergers and acquisitions

Smaller firms are also becoming more frequent participants and targets of cross-border mergers and acquisitions. Many cross-border mergers have taken place between SMEs and larger companies wishing to gain specialised units, new technologies or niche products/services. Data for the 1990s show

that there were at least 340 cross-border mergers and acquisitions completed worldwide in which SMEs with capitalisation of USD 2.5 million or less were acquired (the figure accounts for 0.8% of the total 42 500 cross-border M&As captured by the database in the decade).

For small-firm owners or entrepreneurs, an objective may be to seek new management (*i.e.* an acquirer) in order to ensure their company's survival after their retirement. Many SMEs start as family businesses and some have difficulty finding new management or outside investors to maintain the business and employ current workers. Some entrepreneurs may sell their start-up company after several years of success to secure funding for new ventures. Acquisition by well-capitalised firms is a viable strategic option for fast-growing SMEs such as small Internet companies and biotechnology firms, enabling them to finance future R&D activities and survive global competition. Sourcing capital through traditional financial markets may be difficult for SMEs, especially start-ups lacking recognition and/or collateral.

### **Box 3. The Thomson Financial database on strategic alliances**

The Thomson Financial database (SDC Platinum) covers almost 70 000 alliances worldwide, including joint ventures, research and development (R&D) agreements, sales and marketing agreements, etc., from 1988 to the present. Each alliance, reported by establishment of collaborative agreement between two or more firms, counts as one deal regardless of the number of participating firms and of the objectives it covers. The database includes over 200 data elements, such as participating company profile, purpose of alliance, deal synopsis, description of business and products, etc. Data sources include over 200 English and foreign-language newspapers, SEC and international filings, trade publications, news wires and quarterly surveys of investment banks and advisors. For the analysis of alliances, data on newly announced alliances were used. Although some alliances may cease to exist, the database does not fully capture the latest status of each deal, *i.e.* completed or failed, since few companies announce closure of their alliances.

Advantages of the database include whole sectoral and worldwide geographical coverage, which other data sets of academic/research institutions may not have. Each alliance is coded by Standard Industrial Classifications (SIC), according to the major purpose of the deal, thereby allowing database users to isolate part of the data by industrial sector (for sectoral analysis). Selection of alliances by headquarter nation of the participating firms or by place of the alliance operation (*e.g.* manufacturing, R&D) enables regional and country analysis.

The database does not include information on undisclosed alliances. In particular, since alliances among small firms tend not to be reported by the press, it may over-represent larger firms and under-represent small ones. This may partly explain the relatively smaller representation of small and medium-sized enterprises (SMEs) in world alliance activity. According to the database, cross-border alliances involving SMEs account for 5% of the total 42 000 international deals in the 1990s. Considering that SMEs represent over 95% of the total number of enterprises and 60% or more of jobs in OECD countries, small firms may participate more actively in cross-border deals than the database indicates.

Another drawback of the database is linguistic in nature, as the sources are mainly in English. For example, the database reports 5 000 international alliances involving Japanese firms from 1995 to 1999, while the data of Japan External Trade Organisation (JETRO), an affiliate organisation of Ministry of Economy, Trade and Industry (METI) of Japan, capture more than 10 000 such alliances over the same period. The sources of the JETRO data are four Japanese newspapers, *Nikkei*, *Nikkei-Sangyo*, *Nihon-Kogyo* and *Nikkan-Kogyo* (OECD, 2001a).

While a major motive for the acquisition of large firms is to strengthen market presence in a particular product or service segment, many M&As involving SMEs aim to gain access to knowledge and technologies (*i.e.* intangible assets). In the pharmaceutical sector, for example, small biochemical firms have been acquired by large drug companies seeking the target company's leading-edge technologies or particular molecular compounds (**Table 1**). Similarly, talented programmers and niche products of small software developers and Internet service providers have been sought out as larger ICT firms need to strengthen their R&D capability and speed up new product development. And, as various online services grow, banks and other institutions have acquired small ICT companies to develop system platforms for B2B and B2C electronic commerce.

**Table 1. M&As involving biochemical firms**  
4<sup>th</sup> quarter 2000 and 1<sup>st</sup> quarter 2001

	Acquirer	Country	Employees	Acquired	Country	Employees	Value
1	Abbott Laboratories	United States	60 571	Knoll Pharmaceuticals	India	n.a.	6 900
2	Shire Pharmaceuticals	United Kingdom	1 023	BioChem Pharma	Canada	n.a.	4 000
3	Corixa Corp.	United States	538	Coulter Pharmaceuticals	United States	200	900
4	Inhale Therapeutic Systems	United States	485	Bradford Particle Design	United Kingdom	40	200
5	Amgen	United States	7 300	Kinetix Pharmaceuticals	United States	n.a.	170
6	Affymetrix	United States	744	Neomorphic	United States	n.a.	119
7	ArQule	United States	304	Camitro	United States	28	95
8	Aurora BioSciences	United States	410	PanVera Corp.	United States	n.a.	86
9	Abgenix	United States	174	ImmGenics	Canada	37	77
10	Incyte	United States	1 126	Proteome	United States	n.a.	77
11	Inhale Therapeutic Systems	United States	485	Quadrant Healthcare	United Kingdom	95	60
12	BioTransplant	United States	62	Eligix	United States	50	55
13	Charles River Laboratories	United States	3 500	Primedica	United States	500	52
14	Bio-Technology General	United States	325	Myelos	United States	n.a.	35
15	Ilex Oncology	United States	361	Symphar	Switzerland	30	30

*Note:* Value in USD million.

*Source:* Burrill and Company (2000a and 2001) and company profiles available on the Web.

### Specialised suppliers

As large multinational enterprises outsource and subcontract their non-core activities and product lines, smaller enterprises with unique technologies, niche products and particular expertise are realising growing opportunities as specialised suppliers on a global scale. Some small and medium-sized suppliers to global industries such as the automotive and electronics sectors, have established foreign production facilities and distribution networks (**Box 4**). Small specialised firms are often spun off from large MNEs (*e.g.* large telecommunications firms are spinning off Internet services) or formed through management buy-outs which lead to more focused business operations. As a result, global industrial restructuring is creating large numbers of specialised firms, both large and small (**Table 2**).

**Table 2. Examples of small and large international specialists**

Small specialist	Industry	Large specialist	Industry
Sorbee International	Sugar-free candy	Campbell Soup Co.	Food processing
CFM Technologies	Computer chip etching equipment	Coca-Cola Co.	Beverages
Lionville Systems	Drug delivery cabinets	Checkpoint Systems	Electronic point of sales (POS) systems
Empire Abrasives Equipment	Industrial abrasive equipment	Tupperware	Plastic houseware
Trans/Air manufacturing	Bus air-conditioners	McDonald's	Fast food
Moore Push-Pin	Specially fasteners and hangers	Service Corporation International	Funeral services
Somat	Waste disposal systems	Crown, Cork, and Seal	Packaging
Delmont Labs	Canine vaccines	Viking Office Products	Office product sales by catalogue
Laser Communications	Laser beam data transmission	Intel	Computer chips
Pringle Manufacturing Company	High-current switches	Merck	Pharmaceuticals

Source: Mascarenhas (1999).

Through arrangements as suppliers or subcontractors to larger firms, SMEs are upgrading their products and processes. Although many supply arrangements are still cost-driven, compliance with quality standards is becoming more important. Large MNEs are seeking small suppliers who can meet rigid guidelines concerning quality, cost and delivery (UNCTAD, 2000). Since failure of a single supplier may threaten the buyer's competitiveness and reputation [*e.g.* the Ford (United States) and Firestone, a subsidiary of Bridgestone (Japan), case cost both companies millions of dollars to replace all the tires concerned and severely affected their sales], many firms demand their suppliers to implement continuous quality improvement. Moreover, as suppliers develop specific expertise which buyers (*e.g.* large MNEs) cannot easily replace with their internal resources or with other suppliers, the buyer-supplier relationship has changed from unilateral subcontracting to bilateral partnership with mutual learning among participating firms.

There are many buyer-supplier relations in which goods and services are provided according to specifications customised to the buyer (Perry, 1999). At a minimum, this may be limited to the hiring of labour services to process raw materials provided by the buyer. At the maximum, the supplier may have responsibility for material procurement, product design and production, according to broad specifications given by the buyer or to their own designs approved by the buyer. Traditionally, subcontracting refers to a vertical (and occasional) relationship, in which the subcontractor (*e.g.* small suppliers) is highly dependent on the contractor's decision to continue or cease the contract. As subcontracting increasingly implies a more horizontal relationship between the participating firms, the boundary between subcontracting and strategic alliances, such as long-term sourcing agreements, is becoming blurred.

Some MNEs have supplier programmes targeting small firms with high potential. TRW, an automotive and aerospace parts and systems company in the United States with 100 000 employees worldwide, has a small business programme aimed at achieving total quality and a lean supply chain as well as world-class performance for its customers (*e.g.* carmakers). These goals are achieved by setting agreed targets, co-managing costs and sharing product development between the company and small suppliers. The programme not only covers current suppliers but is also open to new small suppliers; the latter can register for the company's vendor network, accessible via its Internet site.



#### **Box 4. Small suppliers of niche markets**

*Harada Industry* is a Japanese company with 128 employees, specialised in radio antenna and related (small) electronic components for automobiles and mobile communication tools, including mobile phones. The company has grown through continuous new niche product development, quality control and aggressive sales activity worldwide. Since 1957, when a Japanese carmaker adopted the company's radio antenna, it has expanded its range of products to include an automatic folding antenna and an antenna for personal radio communications and for mobile phones. Harada now produces more than one-quarter of all car antennas in the world (more than 50% in Japan, 25% in the United States and 10% in Europe). The company's dominant position in the market has been established by winning (long-term) supply agreements with all major carmakers and other electronic firms, including all top five car companies in Japan (Toyota, Honda, Nissan, Mazda and Mitsubishi), the big three in the United States (General Motors, Ford and Chrysler), Jaguar and Volvo in Europe (both are in the Ford group), Motorola (United States), and Sony, Fujitsu and Matsushita (all Japanese firms).

Established in 1947, the company's first step into the global market was an export/sales unit in Chinese Taipei started in 1968. While operating two factories in Japan, the first foreign production site was built in China in 1988, followed by Mexico (1988) and Vietnam (1997). For the sales and marketing operation, the company has two foreign affiliates: Harada Industry of America (Detroit) and Harada Industries Europe (Birmingham, the United Kingdom, which also has a production facility). The latest development was the establishment of the Harada European Technology Centre (HETC) in 1997 as a division of Harada Industries Europe to undertake research and development based at the University of Kent in the United Kingdom.

#### **Informal networks**

Many SMEs are going global by combining strengths through networks, both at national and international level. Through networking, SMEs can overcome their size constraints and improve their competitive position (UNIDO, 1999). Horizontal co-operation with equivalent firms allows partnering SMEs to achieve scale economies in production, obtain bulk purchase inputs and pool their production capacities to satisfy large-scale orders. Co-operation with other small firms allows participating SMEs to specialise in their core businesses. One of the benefits of networking is mutual learning among linked firms. These business linkages and networks have deepened and become more horizontal and interdependent in recent years.

Local networks have played a significant role in making participating SMEs globally competitive and attractive. Networking is an increasingly common feature in successful regional economies (Perry, 1999). Well-functioning business networks emphasise information sharing, including on technologies and product breakthroughs, and focus on longer-term mutual gains for linked firms. Firm-to-firm networks or business linkages can take various forms, ranging from informal business contacts, such as personal relationship with specific entrepreneurs, to more formal business arrangements based on contracts. In addition to bilateral firm-to-firm networks, there are horizontal, membership-based business organisations, such as trade associations, chambers of commerce and associations of small firms in a particular sector. In short, business networks can be created through trade ties, personal connections, ties to collective institutions or some combination of these.

Different types of networks may overlap; for example, community-based networks, industrial districts and clusters, may comprise family businesses that interact according to kinship ties and

subcontracting linkages. They are not mutually exclusive, but rather complementary, fostering further networking among SMEs or between small and larger firms. For example, informal business contacts can develop into formal business collaboration. Most business organisations are now emphasising business matching, providing member firms with services for locating potential business partners, including online bulletin boards.

“*Clusters*” refer to geographic concentrations of interconnected companies and institutions in a particular field (OECD, 2001*b*). They are informal linkages among firms and institutions, including suppliers of specialised inputs, machinery and services, universities, standards-setting agencies, think-tanks, vocational training providers and trade associations. A major characteristic of clusters is the geographical proximity of interdependent firms, which produces synergy effects (Rosenfeld, 1997). Close proximity allows firms in the cluster to transact more cheaply and easily, resolve their inter-firm problems more quickly and efficiently, and learn earlier and more directly about new innovations and business practices.

Some successful clusters are strongly export-oriented, allowing small firms collectively to improve the quality of their products and achieve a significant share in foreign markets. In Castel Goffredo in northern Italy, for example, more than 200 production companies and suppliers have captured about 30% of the European market for women’s stockings and hosiery (Rosenfeld, 1997). Another example is Bangalore in India, where the concentration of electronics and aeronautics firms and the pool of talented programmers have attracted many MNEs since the middle of the 1980s, including Texas Instruments, IBM, Oracle (all US firms) and Fujitsu (Japan). The region has become a centre for software development in India (Lateef, 1997).

### **Electronic networks**

New Internet communication tools, such as electronic data interchange (EDI) and electronic commerce, make cross-border networking easier and more practical for SMEs. They can reduce search costs for potential foreign business partners and improve a firm’s visibility in global markets. Many business organisations, such as chambers of commerce, are starting online business matching services. For example, the *World Association for Small and Medium Enterprises* (WASME), one of the largest global non-governmental organisations for micro and small firms, with members in more than 100 countries, facilitates SME networking through its Technology and Trade Promotion Exchange Centre (TPX). This provides partner-matching services through which firms can register their profiles and search for suitable business partners via international networks of focal points, such as the *Bureau de Rapprochement d’Entreprises* (BRE) of the European Union.

The development of industry-wide business-to-business (B2B) online exchanges and business-to-consumer (B2C) Web sites in several industries, such as automobiles, steel, airlines and finance, allows SMEs to reach potential buyers for their products and services throughout the world (OECD, 2001*a*). Moreover, the technological complexities of new online businesses, such as the development of a platform for online transactions, require partnering with firms specialised in ICT support services, a sector where small companies play a major role. Small Internet service providers and other computer service firms have gained increasing opportunities to establish computer systems and create online shops for their allied (large) firms.

However, if they are exclusive arrangements, B2B marketplaces may have an anti-competitive impact on firm procurement practices (OECD, 2000*c*). If the major buyers in a certain industry set up a B2B exchange and agree to buy only in that market, they could effectively force suppliers to participate or exclude them. This is a serious concern among small suppliers because joining online exchanges can be

quite costly for them. Using a particular platform for each B2B market can represent an additional burden for SMEs, which may have to adjust or even replace their computer systems to meet the system requirements. When Covisint, a B2B exchange for the automobile industry, was initiated by five carmakers (DaimlerChrysler, Ford, General Motors, Renault and Nissan) in April 2000, only a handful of giant suppliers, such as Delphi (United States) with 210 000 employees and Denso (Japan) with 36 000 employees, immediately announced plans to join it. This partly reflects the fact that small suppliers take a cautious attitude towards industry-wide B2B exchanges which may or may not have substantial benefits for them.

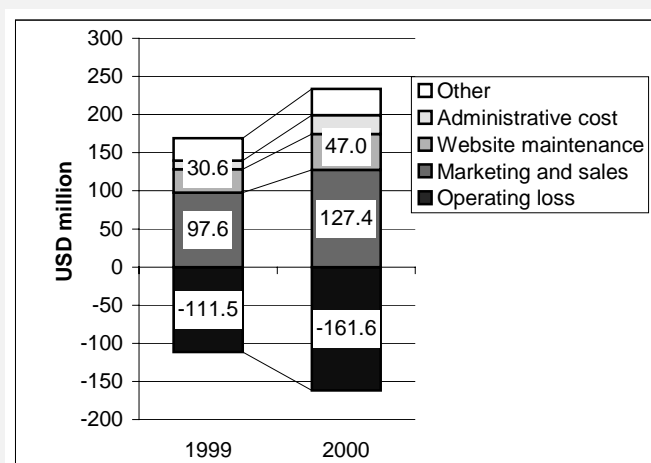
While the Internet has the potential of helping small firms to globalise their business by allowing them to expand their customer base beyond their national borders, it may not reduce overall marketing costs. Establishing an easy-to-use, user-friendly Web page or online shop is not easy and may be expensive. In order to attract new customers, the company's Web page must be continuously upgraded and may need to be supplemented by advertisements through traditional media such as newspapers, magazines and broadcasting. The recent bankruptcies of large online retailers indicate that although the Internet can dramatically expand firms' customer base, it may not change the overall cost structure, whether for large firms or small (**Box 5**).

### Box 5. Bankruptcy on the Internet

eToys was a leading Los-Angeles based online retailer focused on children's products, including toys, books and videos. It served customers in North America and the United Kingdom with more than 100 000 items of 750 brands, such as Barbie and LEGO, and offered shopping 24 hours a day, seven days a week, with reliable and timely product delivery. eToys more than doubled its customer base every year, from a mere 11 000 in 1997 to 3.4 million by the end of 2000, but its losses had accumulated to USD 274 million when the company filed for bankruptcy protection in February 2001.

One of the major reasons for eToys' financial difficulties was the fact that the company could not recoup its heavy investments in distribution, *i.e.* state-of-the-art warehouses. eToys' failure suggests that the Internet, which has been considered as a low-cost tool for luring national as well as international customers, could not offset other operational costs, including that for delivery. Moreover, developing an attractive Web site also calls for substantial investments. A major portion of the company's losses came from marketing and sales activity, including distribution and advertising on the Internet, television and other media, and from Web site upgrade and maintenance. The cost of adding one new customer increased from USD 33 in 1997 to USD 40 in 2000. The case of eToys shows that the Internet may not lower a retailer's overall business costs – an important lesson for SMEs. Costly delivery operations, heavy advertising expenses and continuous Web site upgrades may still be required to build a strong brand, improve visibility and attract more customers.

**eToys' cost structure**



*Note:* Comparison between April-December 1999 and 2000.

*Source:* The company's annual report and press releases.

## STRATEGIC ALLIANCES BY SECTOR

The degree and rate of globalisation of SMEs differ by industrial sector. Many small firms in traditional service sectors such as health care and restaurants still predominantly serve local markets. However, higher-technology and more knowledge-based goods and services providers are rapidly becoming internationalised, particularly through strategic alliances with larger companies. Cross-border alliances involving SMEs in the ICT industry (*e.g.* software, telecommunications and computer-related services), pharmaceuticals and business services increased significantly in the second half of the 1990s through 2000 (**Figure 2**). Most SMEs joining alliances in these sectors are medium-sized firms. The bulk of the deals are collaborations with larger companies, although there were some among SMEs. The Thomson Financial database suggests that a vast majority of the firms involved are from the United States and Canada, although smaller firms from Western Europe are relatively visible in each sector.

### Software

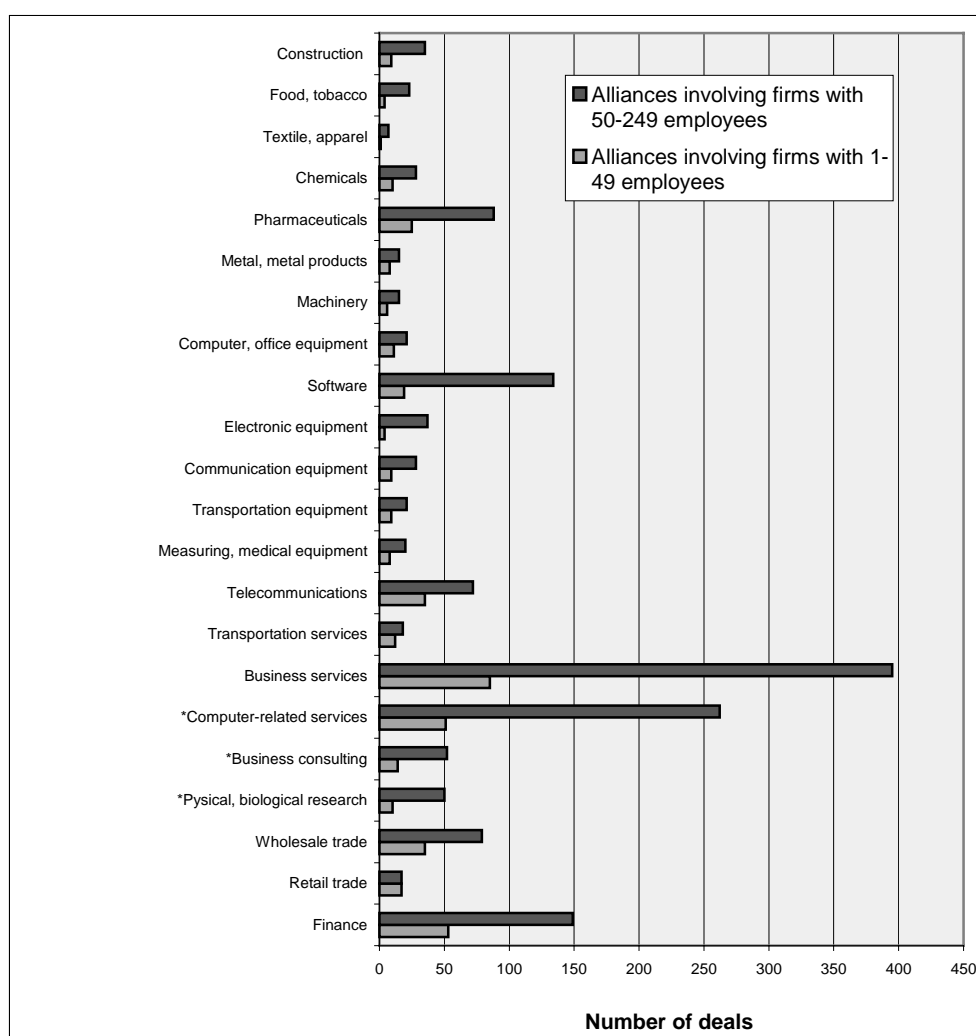
In the software sector, small companies with rich intellectual property have played a major role in niche-product development. As the latest electronic products require more complex combinations of different components including software, large computer and electronics firms have sought alliance partners, including small software developers. With rapidly changing technologies and the shortened life cycles of personal computers, mobile phones and other electronic products using software, small companies which are flexible and responsive to changes in markets have prospered. They have taken on core activities in research and product development. In many cases, small firms licence their advanced software and technologies to large allied firms, while exploiting the allied partner's brand names, sales forces and marketing channels. In fact, some small firms with less than 50 employees have formed alliances with giants in the computer industry, including Fujitsu (Japan) and the US firms, IBM, Microsoft and Texas Instruments.

The number of cross-border alliances in the software sector has steadily increased in the past five years, and two-thirds (150 deals) of the total (240) in the 1990s were formed in the second half of the decade. In 2000 there were about 90 international deals (**Figure 3**). From 1990 to 2000, small firms with 1-49 employees joined one-fifth (60 deals) of the total 330 alliances, and medium-sized firms with 50-249 employees participated in 270 deals. Small firms have tended to seek large companies as alliance partners, while medium-sized firms have co-operated not only with large firms but also with their equivalents or slightly larger firms (250-500 employees) to strengthen their R&D activities. Most participating SMEs are medium-sized firms in North America, where many of the world's leading software developers are located, or are in computer-related services such as computer programming, systems management and data processing. With regard to larger partners, half are US companies while the rest are from Japan, the United Kingdom, Canada and Germany.

Many alliances in the software sector have multiple objectives. A typical alliance agreement covers both joint software development and exclusive or non-exclusive marketing rights of the final product (**Figure 4** and **Table 3**). These arrangements usually include technology-licensing agreements, in which small firms allow larger partners to exploit their particular technologies or software. In cross-

licensing agreements, both large and small firms gain access to the other's complementary knowledge and technologies.

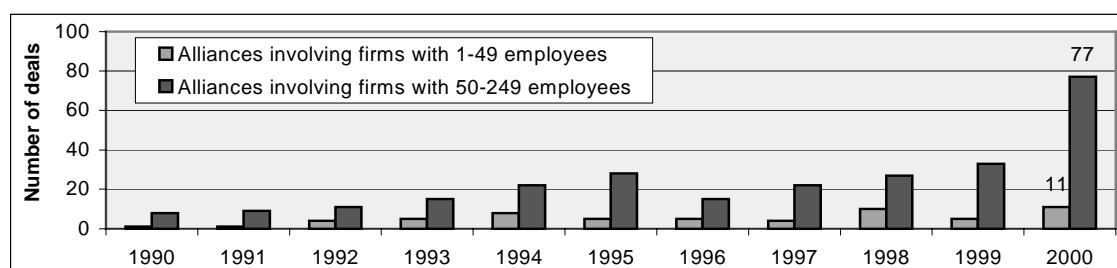
**Figure 2. Cross-border alliances involving SMEs by sector, 1995-2000**



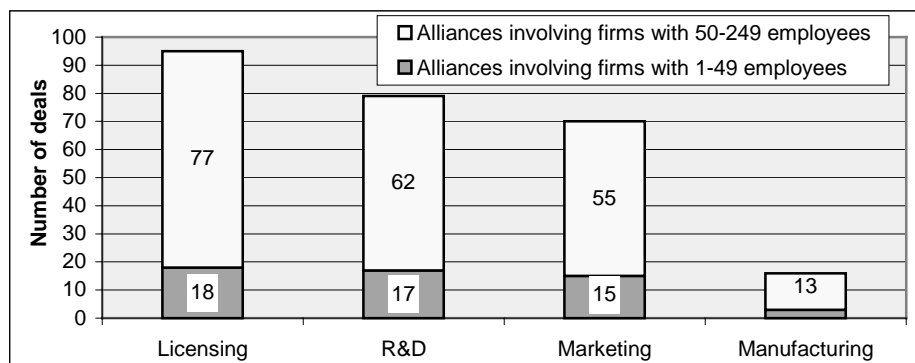
Note: \* Sectors that are part of business services.

Source: OECD, based on Thomson Financial.

**Figure 3. Software: cross-border alliances by firm size, 1990-2000**



Source: OECD, based on Thomson Financial.

**Figure 4. Software: cross-border alliances by purpose, 1990-2000**

*Note:* Since some alliances have multiple purposes, the total of the four categories exceeds the total number of deals during the period.

*Source:* OECD, based on Thomson Financial.

**Table 3. Software: cross-border marketing alliances involving SMEs, 1990-2000**

	Software firm (SMEs)	Country	Employees	Alliance partner	Country	Employees	Year	Deal's highlight
1	Wind River Systems	Japan	208	Sun Microsystems	US	12 500	1991	Joint marketing of Wind River's computer operating system.
2	TA Consultants Ltd.	Hong Kong	80	IBM Corp	US	316 303	1991	IBM and TA established a joint venture to develop and market financial software in Southeast Asia.
3	Alias Research Inc	Canada	160	Silicon Graphics	US	3 624	1991	Silicon Graphics markets Alias Research's 3-D software products.
4	Unicorn Systems Co	US	42	Integris (Bull)	France	10 000	1992	Integris markets Unicorn's software.
5	Verbex Voice Systems	US	30	Mitsubishi Corp	Japan	13 959	1994	Verbex Voice Systems licensed Mitsubishi to manufacture and market Verbex Voice's software in Japan.
6	Syntax Systems Ltd.	Canada	170	Fujitsu Ltd.	Japan	145 000	1994	Syntax Systems Inc granted Fujitsu Ltd. a license to market Syntax's software in the US.
7	VideoLogic PLC	United Kingdom	140	NEC Corp	Japan	154 787	1994	NEC markets software jointly developed by the two companies.
8	FORE Systems Inc	US	10	Northern Telecom Ltd.	Canada	73 000	1995	The two companies co-market seamless end-to-end ATM solutions.
9	Elvis Ltd.	Russia	53	Sun Microsystems	US	12 500	1997	Sun Microsystems Inc markets Elvis Ltd's software worldwide.

*Source:* OECD, based on Thomson Financial.

## Pharmaceuticals

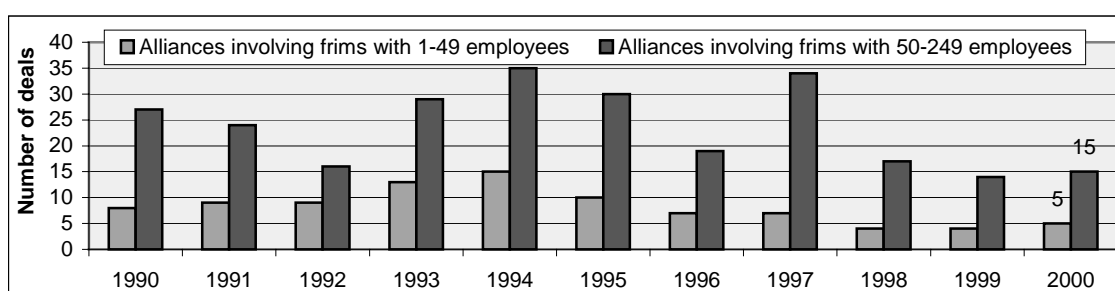
Cross-border strategic alliances for product licensing and marketing as well as R&D have long been a feature of the pharmaceutical industry. Small biochemical firms with leading-edge technologies or a

particular molecular compound, many of which have less than 100 employees, have taken on a major portion of research projects or clinical trials for large pharmaceutical companies, such as Hoechst (Germany, now Aventis), Novartis (Switzerland) and GlaxoSmithKline (United Kingdom). These alliances between large and small firms are driven by the rising costs of bringing new products to market as well as growing consumer expectations for more specific and direct cures for narrowly defined illnesses. The pharmaceutical industry is one of the most R&D-intensive sectors, spending USD 39 billion worldwide on R&D in 1998 (PricewaterhouseCoopers, 1998a), and the average cost of getting a new drug to market is over USD 300 million. All pharmaceutical companies wish to reduce their R&D costs and are under extreme pressure to develop new drugs.

Developing “suites” of products tailored for specific groups of patients requires a more complicated development process and technology. To economise on R&D and reduce lead times for new drug development, many drug companies have sought alliance partners with advanced technologies and expertise in particular fields as a way of outsourcing R&D activities and clinical testing of possible new drugs. They either purchase significant stakes in promising biochemical ventures or contract out a whole R&D project to firms with complementary skills, extensive gene databases and facilities for conducting clinical trials. High-potential, small biochemical ventures have received substantial investment from large drug firms wishing to exploit the formers’ human resources and technologies and secure exclusive (marketing) rights for final products. The nature of government regulation and oversight – particularly the time period, costs and procedures for new drug approval – also influences the size and geographical dimensions of alliances (OECD, 2001a). The announcement in June 2000 of the completion of the sequencing of the human genome has further pushed pharmaceutical companies to invest in biochemical firms with the relevant technologies.

Over the last decade, 330 international alliances in the pharmaceutical sector involved small biochemical and drug firms with 1-249 employees (**Figure 5**). Firms with less than 50 employees participated in one-quarter of these alliances, while medium-sized firms with 50 or more employees joined the rest. There are few alliances among SMEs, and most are for joint development of a new drug with larger firms. These include physical and biological research services firms and laboratories (SIC=8731 in services); such firms with less than 250 employees joined more than 100 cross-border alliances between 1990 and 2000. More than 90% of allied SMEs are from the United States. Their larger partners are from Japan and, in Western Europe, from the United Kingdom, Germany, Switzerland and France, where the world’s leading pharmaceutical companies are located.

**Figure 5. Pharmaceuticals: cross-border alliances by firm size, 1990-2000**



Source: OECD, based on Thomson Financial.

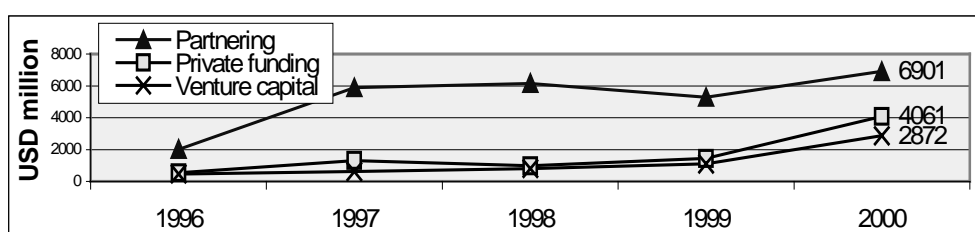
A major motivation for pharmaceutical partnerships is to share risks and R&D costs. A majority of all international alliances from 1990 to 2000 were for R&D (180 deals), and most were not joint ventures. R&D activities under these alliances are concentrated in the main OECD regions where there is a large knowledge and research base. Most marketing alliances target the main OECD markets. One-half of



the R&D alliances between large and small firms from 1995 to 1999 included licensing agreements which allow either company to exploit a compound of the other partner for new drug development or which provide a larger partner with exclusive marketing rights for a jointly developed new drug. For smaller innovative firms, licensing a new technology to large pharmaceutical companies has been a traditional source of revenue and a viable alternative to in-house drug development. Licensing also allows large pharmaceutical companies, as licensee, to expand their product portfolio (OECD, 1996). There are also a few collaborations between universities and small biochemical firms, in which the latter develop and market the fruits of academic research.

In addition to licensing arrangements, partnerships for early-stage R&D are a major source of financing for SMEs (**Figure 6**). In 2000, biochemical firms in the United States raised USD 6.9 billion through strategic partnering, an amount which has more than tripled in the past five years and is the second largest funding source after public offerings through financial markets. In many cases, larger firms finance their allied small firms. An estimated 25% of R&D expenditures of large pharmaceutical firms is now spent on external partnerships (PricewaterhouseCoopers, 1998b). Small biochemical firms, many of which have fewer than 100 employees, raise millions of dollars from each alliance agreement (**Table 4**).

**Figure 6. Pharmaceuticals: US biotech industry's fundraising, 1996-2000**



Note: Partnering figures are based on disclosed transactions' value.

Source: Burrill & Company (1998, 2000a), and PricewaterhouseCoopers (1998c).

**Table 4. Pharmaceuticals: pharma-biotech alliances**  
Latter half of 2000

	Pharmaceutical company	Country	Employees	Partner (Biotech Company)	Country	Employees	Value
1	Purdue Pharma	US	4 000	Genzyme Molecular Oncology	US	3800	321
2	Schering-Plough	US	28 100	Texas Biotechnology	US	86	87
3	Novartis	Switzerland	67 653	Geneva Proteomics	Switzerland	N.A.	84
4	Watson Pharmaceuticals	US	1 950	GeneLabs Technologies	US	93	71
5	Bayer	Germany	120 400	Avigen	US	82	60
6	Bayer	Germany	120 400	PPL Therapeutics	United Kingdom	160	55
7	Baxter International	US	43 000	Acambis PLC	United Kingdom	N.A.	39
8	Bristol-Myers Squibb	US	54 500	3-Dimensional Pharmaceuticals	US	93	38
9	Fujisawa Healthcare	Japan	7 700	CV Therapeutics	US	83	34
10	Taisho Pharmaceuticals	Japan	4 659	Insmid Inc.	US	28	32
11	Aventis S.A.	France	107 300	Karo Bio AB	Sweden	120	32
12	GlaxoSmithKline	United Kingdom	100 000	MedImmune	US	790	30
13	American Home Products	US	47 000	Targeted Genetics	US	92	30
14	American Home Products	US	47 000	Zonagen	US	31	23
15	Serono	Switzerland	2 300	Axonyx	US	10	23

Note: Examples of alliances during the period. Value: USD million.

Source: Burrill & Company (2000a, 2000b) and each company's corporate profiles available on the Web.

## Telecommunications

The telecommunications sector is the best example of how rapid technological developments, in combination with regulatory reform, both enable and force companies to seek new partners across national and technical borders (Kang and Johansson, 2000). The need for telecommunications operators to adapt to new means and patterns of communication (*e.g.* Internet and mobile telephony) and to supply a widening range of services has led companies wishing to gain in size and market presence to engage in more cross-border alliances. These alliances are largely a consequence of the globalisation of service industries and the need to provide multinationals with end-to-end communication services. As deregulation has opened national telecommunications markets to foreign competitors and as technological advances have made possible wider regional and even global communication services, large operators have become global by acquiring and forming alliances with local telecommunications companies, including small service firms. While large operators have preferred intra-regional mergers as a way of entering a neighbouring country's markets, they have tended to prefer inter-regional alliances, including minority share holdings, when entering more distant markets about which they are less knowledgeable (OECD, 2001*a*).

Between 1990 and 2000, there were 206 cross-border alliances involving SMEs and the number of deals has rapidly increased in recent years (**Figure 7**). During this period, small firms with 1-49 employees joined 55 alliances, half of which are joint ventures, while medium-sized firms with 50-249 employees participated in 156 alliances, including 66 joint ventures. Most alliances between small and large firms aim to provide fixed or mobile telecommunications and/or Internet services through joint ventures established in the target market. Large telecommunications service operators, such as MCI Communications (United States, now WorldCom), British Telecommunications (United Kingdom) and Hutchison Telecommunications (Hong Kong, China), have expanded their geographic reach and the number of business and individual subscribers through alliances with small local firms. While many of the SMEs in partnership with large firms are from the United States and the United Kingdom, others are in growing telecommunications markets, such as Spain, Italy and Korea. Many of the allied large firms are from the United States, Japan, the United Kingdom, Germany and France, where global telecommunications service operators are located. There are some alliances among SMEs, most of which aim to provide telecommunications services either in North America, Western Europe or South-East and East Asia (*e.g.* Hong Kong, Singapore).

**Figure 7. Telecommunications: cross-border alliances by firm size, 1990-2000**



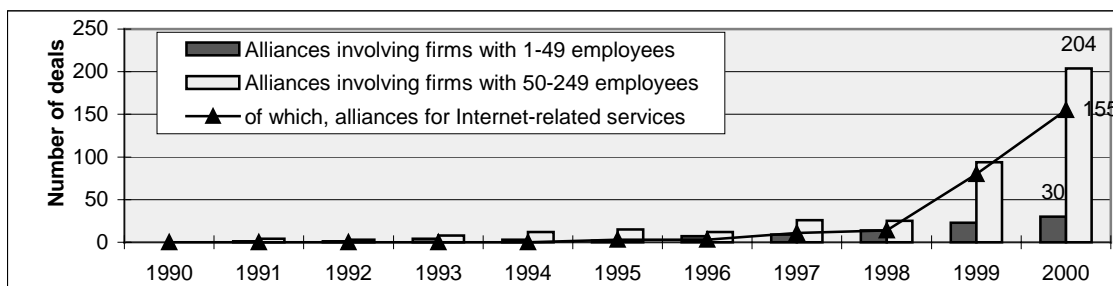
Source: OECD, based on Thomson Financial.

## Computer-related services

The number of cross-border alliances in computer-related services involving SMEs has rapidly increased in recent years (**Figure 8**). They account for two-thirds of the overall growth in international alliances involving SMEs in business services during the latter half of the 1990s. Many successful firms in the sector began as very small firms, and they have provided their technological expertise and support

services through international co-operation. As the Internet has allowed firms to reach customers beyond their national borders, many firms have created a homepage, including online shops, through alliances with small ICT/Internet companies, partly because of the technological complexities of online businesses (OECD, 2001a). As a result, in addition to the traditional services in the sector, such as customised computer (security) system development, more SMEs have been involved in alliances for Internet-related services, including Web page design and development, online advertising and marketing, and technical support for business-to-business (B2B) and business-to-consumer (B2C) electronic commerce.

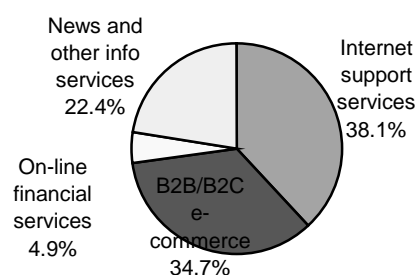
**Figure 8. Computer-related services: cross-border alliances by firm size, 1990-2000**



Source: OECD, based on Thomson Financial.

There were 260 international alliances in computer-related services involving SMEs in the last decade. Alliance formation has accelerated in recent years and the number of deals in 2000 (233) surpassed the total during the period 1995-99 (225). Firms with less than 50 employees joined one-fifth (85) of the total 460 alliances from 1995 to 2000, and medium-sized firms with 50-249 employees participated in the rest (there were a few alliances involving both small and medium firms). Some are among SMEs, but most are alliances with larger partners in other sectors, such as banks and other financial institutions and airlines seeking partners to develop their computer networks, e.g. automated-teller-machines (ATM) and online air ticket reservation systems. Small US firms predominate in many computer-related alliances, while their large allied companies are mainly from Japan, the United Kingdom and Germany.

Most alliances are those for Internet-related services; half of the deals from 1995-99, and 70% in 2000, targeted Internet-related activities. From 1995 to 2000, firms with 1-49 employees joined 50 such alliances, while medium-sized firms with 50-249 employees participated in 220. Again, there were only a handful of alliances among SMEs, and most are between large firms and small computer services firms for general Internet support services, including Internet connection, portal development and Web site creation in local languages (Figure 9). Development of B2B and B2C e-commerce sites and systems for electronic transactions is also a major motive for alliances, and various online news and information (search) services follow. Small firms with less than 50 employees joined relatively more alliances for news and information services, while medium-sized firms were involved more in Internet support services. In B2C e-commerce services, an online automobile retailer, *Autobytel.com* (United States), which has remained small in size, with 255 employees, has entered the Japanese market by partnering with Itochu (Japan), a large trading company. In news and information services, the *Financial Times* (United Kingdom) has launched *FTMarketWatch.com*, a joint venture with *MarketWatch.com* (United States), a small financial media company with 200 employees, providing financial news on the Web site.

**Figure 9. Internet-related alliances by purpose, 1995-2000**

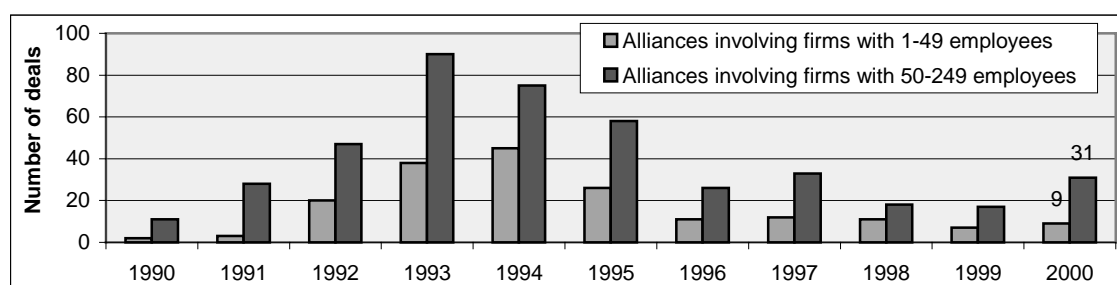
1. Cross-border alliances involving firms with 1-249 employees.
2. Online financial services = Internet banking, trading and other online transaction services, excluding financial news and information services, which are included in "News and other information services" in the above figure.

Source: OECD, based on Thomson Financial.

## Wholesale trade

Most international alliances in the wholesale sector concern marketing agreements between large and small firms. Many of the latter have a leading-edge technology or new product but lack a sufficient sales forces and hence rely on the larger firm's distribution and sales networks. There were 580 cross-border deals in the 1990s, although the number diminished in the second half of the decade (**Figure 10**). One reason for the recent decrease is that, in general, alliances have become more complex arrangements with multiple objectives. As alliances are formed for early-stage product development through distribution and marketing of the final product, the number of collaborations restricted to marketing alone have decreased. For example, some wholesalers and retailers, such as large supermarket chains, have become exclusive distributors for particular manufacturers which develop lower-priced products under their brand name through alliances (OECD, 2001a).

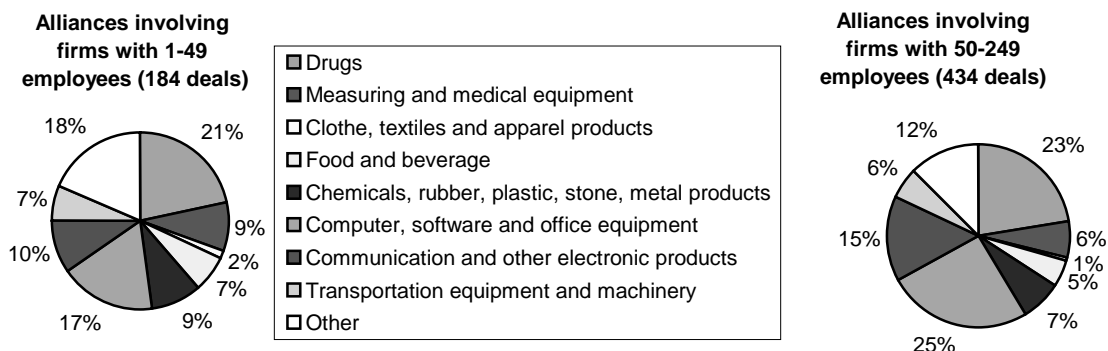
Small firms with 1-49 employees joined one-third (175) of these alliances in the 1990s, while medium-sized firms with 50-249 employees participated in the about 400 unions for wholesale trade. There are few alliances among SMEs. In addition to SMEs and their larger partners from the United States and Western Europe, Japanese trading companies, such as Marubeni and Itochu, are also involved in many sales agreements as large distributors in Japan and other foreign markets. More than half of all marketing alliances involving SMEs aim at the US market; other target markets include Japan, Canada and the United Kingdom as well as some developing countries in Asia, such as China and India.

**Figure 10. Wholesale trade: cross-border alliances by firm size, 1990-2000**

Source: OECD, based on Thomson Financial.

Major sales items of alliances include drugs, medical and other professional equipment, food and beverages, and electronic products, such as computers, software and communication devices (**Figure 11**). As for drugs, small biochemical firms that have invented a new drug may give large pharmaceutical companies exclusive marketing rights for the drug in the main OECD regions. Medium-sized firms with 50-249 employees have been more active than smaller firms in promoting their wireless communication equipment, such as cellular phones, software and other peripheral computer devices such as printers. Food and beverage products have long been the subject of a complex web of exclusive distribution agreements.

**Figure 11. Wholesale trade: sales items of cross-border alliances, 1990-2000**

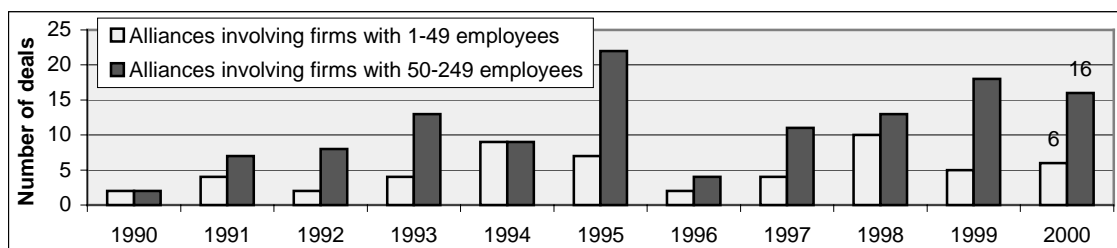


Source: OECD, based on Thomson Financial.

## Finance

Large banks, security firms and insurance companies in the United States, the United Kingdom, France, Germany and Switzerland have entered foreign markets by partnering with local small financial institutions. Many alliances are joint ventures, which provide various financial services including security brokerage, life and non-life insurance, investment fund and real estate property management. In the 1990s, there were 150 international alliances; small firms with 1-49 employees joined 50 and medium-sized firms participated in 100 alliances (**Figure 12**). There are few deals among SMEs. Major target markets in insurance, security brokerage and investment services are North America, Western Europe with large numbers of potential customers, and in some cases emerging markets in Asia, such as Chinese Taipei, Thailand, Malaysia, Singapore and Brazil. SMEs in these growing markets are joining international deals as local partners, while other small firms are from the United States, the United Kingdom and Germany.

**Figure 12. Finance: cross-border alliances by firm size, 1990-2000**

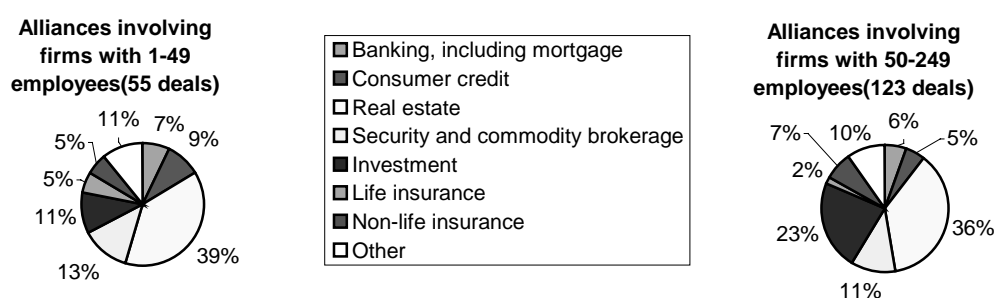


Note: Finance sector: banking including bank holding companies, credit services, real estate including mortgage bankers and brokers, investment, security and commodity dealers and exchanges and insurance.

Source: OECD, based on Thomson Financial.

Among various financial services, real estate management and property development are a major objective of international alliances (**Figure 13**). Small real estate companies in South-East and East Asia, such as Singapore, Malaysia and Hong Kong (China), have actively established joint ventures with investment and real estate firms in neighbouring countries to develop and operate new property or commercial districts in that country as well as in third countries, including China, Thailand and Vietnam. Some of these small firms have also co-operated with large European developers and investment firms from the United Kingdom and Netherlands, and with Japanese companies. Small real estate firms in Europe, UK firms in particular, have joined several joint ventures with partners from the United States and Western Europe.

**Figure 13. Finance: cross-border alliances by purpose, 1990-2000**



Source: OECD, based on Thomson Financial.

## POLICY IMPLICATIONS

Cross-border business restructuring can provide private (firm-level) as well as social (economy-wide and consumer) benefits through resource reallocation and raising overall efficiency, while it may also entail anti-competitive effects through market concentration and short-term adjustment costs during industrial transitions (OECD, 2001a). Greater mobility of resources and increases in competition can free up unproductive resources for more effective use elsewhere. Cross-border networking can generate jobs and wealth by integrating firms into global value-added chains and knowledge networks. It can help revitalise ailing firms and local economies through technology exchange, economies of scale and related productivity growth.

In order to realise the benefits of global industrial restructuring for smaller firms, it is essential that governments maintain an open policy towards international trade, investment, alliances and other channels for new business opportunities. Government policies should also aim to improve the business environment for SMEs through regulatory reform and the removal of administrative burdens. On the other hand, they can strengthen social safety nets to allow smooth industrial restructuring and minimise adjustment and transaction costs. As business networking can allow SMEs to overcome their size constraints and obtain complementary assets which they may not be able to develop internally, governments should be a facilitator of business networks involving SMEs.

Enhancing the global competitiveness of SMEs is a key to making them attractive business partners for foreign firms (*e.g.* large MNEs), leading to more cross-border business collaboration. SMEs do not necessarily have to establish foreign facilities for production or services to become more international. Small firms can export their products and provide services through exploiting the international distribution networks and sales forces maintained by their foreign partners. Governments can help small firms to compete globally by ensuring an easy access to strategic business information (*e.g.* regulations and other business environment in foreign markets and potential foreign partners), upgrading SMEs employees and management skills, and through practical consulting services. Successful development of local networks of SMEs, such as regional clusters, can also attract foreign investment and new entrants into national markets.

A major challenge for governments is the evaluation of SME policies. In some cases, policies do not effectively address the key problems confronting small firms, and measures taken in different areas can be inconsistent. Assessing the real impact of each policy measure is not easy and has been attempted in a rather haphazard manner in some countries. Nonetheless, all governments can benefit from sharing their experiences on both successful and unsuccessful practices, with insights of the private sector to inspire more mutually beneficial policy frameworks for globalising small firms. Effective benchmarking is one way to highlight weaknesses and help build momentum for shaping policies that can allow for greater benefits from cross-border business networking. It can also help governments to address the costs and challenges which arise from global industrial restructuring.

### **Ensuring favourable framework conditions**

Growing cross-border business linkages have raised similar regulatory concerns in several countries and require greater co-operation among countries so that industry and business-related policies

take into account the increasingly international nature of firms. Better framework conditions and infrastructure benefit the host country as well as other countries by creating a better business environment for cross-border business activities of firms of all countries, leading to economic growth and job creation.

To maximise the positive spillovers of global industrial restructuring for SMEs, framework conditions are needed which favour foreign direct investment and new foreign entrants. Governments should encourage both MNEs and globalised SMEs to enter national markets and contribute to economic growth by promoting interlinkages between local and foreign firms. Adequate protection and enforcement of intellectual property rights are particularly important to ensure a favourable business environment for knowledge-based small firms, both national and foreign, encouraging them to carry out research activity in the host country. National technology programmes should be open to foreign participants.

Governments should minimise the negative impacts of cross-border co-operation among firms, such as anti-competitive effects, although international alliances do not necessarily mean less competition (OECD, 2001a). Co-operation in one alliance may be paralleled by intense competition in other product or technology areas. However, the risk of anti-competitive conduct arises when the international alliance supplies a critical input, such as the application of a broadly accepted standard (*e.g.* computer operating system software), distorts the price of such an input and/or stifles innovation. Alliances for marketing and sales-co-ordination, in which many small firms are participating, may bring together actual and potential competitors. The anti-competitive effects of international business networks are less likely where barriers to entry and expansion are low, since in such markets one alliance may lead to another competing alliance composed of different firms. To the extent that SMEs participate in international business networks in order to remain competitive and innovative, co-operative agreements can preserve the number of competitors and levels of competition.

### **Fostering business networking**

Governments should be a facilitator of business networks among SMEs and between small and large firms. They can act as an information hub for both local small firms and foreign firms (*i.e.* potential business partners) by connecting support organisations and services for small firms. The dissemination of best practices, *i.e.* information on successful business linkages and networking, can improve small-firm awareness of the potential for cross-border business partnerships. Most OECD countries have Internet homepages for SMEs and other means to improve access to information on business opportunities in foreign markets. More countries are now establishing one-stop shops for small businesses as a part of their efforts to disseminate information more efficiently and with less administrative burden. Other types of government support – including helping SMEs participate in foreign exhibitions and trade fairs, prepare marketing materials in foreign languages and circulate advertisements abroad – are also effective and should be further developed.

Online business-matching services have been initiated by government agencies and business organisations, such as chambers of commerce and trade associations (**Table 5**), although their effectiveness varies. For example, DG Enterprise maintained the BC-Net and BRE projects to promote cross-border co-operation involving SMEs by helping them to identify potential business partners. Small firms accessed the two networks via intermediaries such as business organisations and private consultants. Many small firms sought not only information on possible business partners, but also guidance and support services for business decisions on co-operation, which some intermediaries could not provide satisfactorily. Overall, only 2% of participating firms reached a formal business linkage using the networks (Technopolis, 2000).



**Table 5. Examples of online business matching services**

	<b>WTCA Trade Opportunities</b> (The United States)	<b>BC-Net/BRE</b> (discontinued in 2000) (The European Union)	<b>TradeUK</b> (The United Kingdom)	<b>Business Matching Database</b> (Japan)
Responsible organisation	World Trade Centers Association	European Commission (DG Enterprise)	British Trade International (BTI)	Japan Small and Medium Enterprise Corporation
Number of registered firms	Thousands	1) BC-Net: 6 100 2) BRE: 20 000	50 000	N.A.
Direct online partner search function for firms	Yes (Free)	No	Yes (Free)	Yes (Free)
Uploading firm's profile into the database	Subscriber or WTC member only (Fee below applied)	Free (Intermediaries input firm's profile)	Free	Free (English translation service available for free of charge)
Language used in the service (i.e. firms database)	English	English, French	9 languages (English, French, German, Italian, Portuguese, Spanish, Russian, Chinese, Japanese)	English, Japanese
Country coverage	More than 100 countries	77 countries	200 countries	Worldwide
Consulting services	Various data and information available (Not free)	Euro Info Centres (EICs) provides business environment information in EU	Links to various service bodies from the "Tradepartners UK" site	Free 400 experts, including lawyers, accountants, banks and traders, are standing
Fees	USD 19.95/month	BC-Net cost 1000 euro (flat rate)	Free	Free
Address	<a href="http://iserve.wtca.org/tradeops/index.html">http://iserve.wtca.org/tradeops/index.html</a>	<a href="http://bre.cec.eu.int">Http://bre.cec.eu.int</a>	<a href="http://www.tradeuk.com">http://www.tradeuk.com</a>	<a href="http://www.jasmec.go.jp">http://www.jasmec.go.jp</a>

Note: BC-Net/BRE's number of registered firms is the total number of firm profiles created from 1997-99.

Source: Service profiles available at each Web site and Technopolis (2000).

The BC-Net/BRE case suggests that effective business-matching services are not easy to establish. Intermediaries may be needed even for online services since not all small firms have access to the Internet. Flexibility is required in such services, so that capable SMEs with Internet access can seek business opportunities on their own (e.g. direct access to the database of business partners) while others can seek support services as necessary. Since many business organisations and private consulting firms have introduced business-matching and related support services, governments should foster the private services market to complement public networks.

The successful development of business networks involving SMEs will rely on the strengthening of public-private partnerships and political and social dialogue (OECD, 2001b). While fostering business networking initiatives by private actors, NGOs and various business organisations, the public sector can play a catalytic role in stimulating successful networking of SMEs by promoting the benefits and potential of international networking. Some SME networks and clusters collectively pursue improvements in production processes, design, quality and international marketing to make their products more competitive in global markets. Governments can directly or indirectly support such small firm initiatives for export promotion.

### **Enhancing SME capabilities**

Another policy priority is to enhance the globalisation of SMEs by preparing them for competition in foreign markets. Although cost is still a key factor in selecting suppliers, production and supply agreements with MNEs are increasingly becoming quality-driven. Consequently, small specialised

firms with high quality standards are realising new global opportunities. Those with leading-edge technologies and expertise are participating in international R&D projects as a major technology partner.

Small firms going global need management skills and well-trained human resources, prepared to deal with foreign markets and business partners. Management needs to be experienced and communicative both within firms and outside. Successful firms are flexible and therefore able to change to meet customer needs and seek out new business opportunities and partners on an international scale. Training and support programmes may be needed to improve the quality and skills of both employees and management. Moreover, some SMEs may need practical assistance, such as legal consulting services, to negotiate better terms in international business arrangements. Some countries have set up public legal services for small firms, designed to familiarise small-business managers with contracts, essential elements of alliance or acquisition agreements, legal language and negotiation strategies. Some business organisations provide professional consulting services for small firms, partly supported by government.

Access to strategic information, *e.g.* on potential foreign business partners, regulations and business environment issues in foreign markets, is another challenge for SMEs. These barriers need to be addressed as they can prevent SMEs from participating in international alliances and other global business linkages. In fact, the intensity of strategic partnering tends to rise with the size of companies, indicating that larger firms actively seek and find external opportunities through strategic linkages. Government Internet homepages for SMEs and other private services (*e.g.* market research) can improve small-firm access to business-related information in foreign markets.

Lack of finance for ICT investments may also impede SME globalisation. Although ICT, including the Internet, has great potential for allowing SMEs to expand their customer base, enter new product markets, rationalise their businesses, and search globally for potential business partners, many small firms have not fully exploited these opportunities due to a lack of awareness and skills and the necessary resources to make initial investments (OECD, 2000*d*). Costs of installation, access and use of ICT, which vary widely across OECD countries, present barriers for small firms. Governments have made special efforts to enhance small-firm awareness and skills for use of ICT and electronic commerce. Moreover, it is essential that countries continue to liberalise telecommunications markets and ensure competitive ICT infrastructure, prices and services.

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