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**EXPANDING INTERNATIONAL SUPPLY CHAINS:
THE ROLE OF EMERGING ECONOMIES IN PROVIDING IT
AND BUSINESS PROCESS SERVICES**

Case studies of China, the Czech Republic, India and the Philippines

OECD Trade Policy Working Paper No. 52

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ABSTRACT

Offshoring of business process services (BPS) and information technology services (ITS) – whether through international *insourcing* or international *outsourcing* – is transforming the way many companies do business. This paper looks at the expansion of international supply chains and the rise of China, the Czech Republic, India and the Philippines as exporters of BPS and ITS. It also analyses the nature of and factors behind this trade and identifies major business- and trade-related challenges arising. In this context it presents some of the labour market implications resulting from increasing trade between OECD and non-OECD economies.

The analysis shows that the BPS and ITS sectors in the four emerging economies are very differently structured: Chinese and Czech companies are predominantly supplying their domestic markets while Indian and Philippine companies are focused mainly on supplying foreign markets. In terms of exports, they also supply different geographies: China is mainly exporting to Japan; the Czech Republic to the European Union; the Philippines to the United States; and India to the United States and UK. Several of the larger home-grown companies in the four countries are establishing significant presence in foreign markets, in particular in other emerging markets, to build capacity and leverage local comparative advantage. This highlights the fact that different geographies have different strengths and BPS and ITS-related FDI between emerging economies is likely to expand rapidly in the future.

All four countries are facing supply side constraints. The low supply of senior personnel with industry-relevant experience in China, the Czech Republic and the Philippines acts as a break on growth. Many companies are also struggling to manage high levels of staff attrition and salary inflation. Regulatory restrictions are relatively few but still affect some companies. In the ITS sector, temporary movement of personnel can pose a significant challenge for home-grown exporters. The issue is most relevant for the Indian ITS sector that is dependent on sending professionals for longer visits to client premises. Slow and unpredictable procedures for issuing business visas and work permits, and quota limitations for work permits, give rise to operational challenges. In the BPS sector, and to a lesser extent in the ITS sector, data privacy and security legislation can have a negative effect on international outsourcing. But new regulations have also created entirely new business opportunities, including the medical transcription sector.

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The paper has been discussed in the Working Party of the Trade Committee, which has agreed to make its findings more widely available through declassification on its responsibility.

The study is available on the OECD website in English and French: <http://www.oecd.org/tad>

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EXECUTIVE SUMMARY

Business process services (BPS) and information technology services (ITS) are increasingly traded between emerging markets and OECD countries. While trade in these services has recently expanded significantly, this has been from relatively modest absolute levels. China, the Czech Republic, India and the Philippines are leading emerging market exporters in this area. In 2005, their combined export revenue was an estimated US\$ 8.7 billion for BPS and US\$ 14.5 billion for ITS. This represented roughly 2-3 percent of worldwide BPS and ITS spending and OECD countries imported the great majority of these services.

As part of OECD's ongoing work on Globalisation and Structural Adjustment, this paper analyses the expansion of international supply chains and the rise of China, the Czech Republic, India and the Philippines as exporters of BPS and ITS. It aims to provide a clearer picture of the nature of and factors behind new international supply chains in these sectors and identify major business- and trade-related challenges arising. In this context it presents some of the labour market implications resulting from increasing trade between OECD and non-OECD economies.

The BPS and ITS sectors in the four countries enjoy access to stable ICT infrastructure and a highly educated and language proficient workforce, which allow them to serve foreign markets. They also benefit from a set of other enabling factors that facilitate their business. First, the countries have generally established zones with dedicated infrastructure and streamlined administration to overcome local weaknesses in the business environment. While broader liberalisation for input services and more effective business regulations would render such zones unnecessary and benefit the economy as a whole, these zones have removed most of the excessive regulatory burden that hold companies back and ensured access to necessary input services.

Second, governments have ensured liberal rules for foreign direct investment (FDI), which has allowed foreign multinationals to establish captive units, or joint service centres, to provide BPS and ITS services to foreign markets. This has with time generated substantial transfers of technology and management practises. Finally, open markets for cross-border supply and few regulatory restrictions in client countries have made it possible for companies in emerging markets to deliver BPS and ITS to international markets.

The findings in the country studies show that the BPS and ITS sectors in the four countries are very differently structured: while only 10-15 percent of BPS and ITS supply are exported in China and the Czech Republic, almost 80 percent of Indian and Philippine BPS and ITS are aimed for foreign markets. They also supply different geographies: China is mainly exporting to Japan and the East Asia region; the Czech Republic to EU countries; the Philippines to the United States; and India to the United States, UK, and to a lesser extent to other OECD markets. This highlights that language proximity is a decisive factor in the decision making process of where to source BPS and ITS.

Trade in BPS and ITS is dominated by OECD-based multinationals but home-grown companies in non-OECD economies are rising in prominence. Czech and Philippine BPS and ITS exports are mainly provided by foreign multinationals. In China and India, BPS and ITS exports are provided rather more equally between home-grown and foreign-owned companies.

India is leading the way among the emerging markets with a mature and internationally competitive ITS sector. The home-grown Indian ITS sector has managed to create a successful business

model based on a ‘global delivery model’, which makes use of a combination of cross-border supply and temporary labour migration. Several of the larger home-grown companies in the four countries are establishing significant presence in other markets, in particular in other emerging markets, to build capacity and leverage local comparative advantage. This highlights the fact that different geographies have different strengths and BPS and ITS-related FDI between emerging economies is likely to expand rapidly in the future. There are also indications that south-south trade is about to gain in influence in some niche markets.

The market for internationally sourced BPS is young, fast growing and competition is more even between the four countries than for ITS. India is the largest supplier but the Philippines has become a strong contender for services in English, in particular for voice-based services. All four countries are likely to continue to expand their export-oriented BPS sectors in the future. Some trend-setting multinationals already use all four countries to deliver BPS to geographies where languages match.

The four countries face increasing supply side constraints in their quest to provide BPS and ITS to international markets. Strong demand has resulted in high attrition rates and salary inflation that some companies struggle to manage. In the ITS sector, it also takes significant investment in training to make young professionals productive, which makes staff retention key. The availability of senior personnel with industry-relevant experience is low in China, the Czech Republic and the Philippines, which acts as a break on growth.

Regulatory restrictions are relatively few but still affect some companies. In the ITS sector, temporary movement of personnel can pose a significant challenge for home-grown exporters. The issue is most relevant for the Indian ITS sector that is dependent on sending professionals for longer visits to client premises. Slow and unpredictable procedures for issuing business visas and work permits, and quota limitations for work permits, give rise to operational challenges for Indian companies.

In the BPS sector, and to a lesser extent in the ITS sector, data privacy and security legislation can have a negative effect on international outsourcing. But new regulations have also created entirely new business opportunities, including the medical transcription sector. Data privacy and security regulations are not necessarily negative as long as they are non-discriminatory in nature. Technological solutions allow companies in most instances to comply with the rules and clients generally require their suppliers to live up to standards that are higher than existing legislation.

The integration of large countries, like China and India, in the world economy creates huge opportunities for companies in the OECD area to access new markets. It also enables them to access new talent to perform tasks in vertically fragmented value chains, including for BPS and ITS. While most work tasks cannot be performed in remote places with a business model that is economically compelling and delivers adequate service quality, international competition gives rise to job insecurity for some workers that used to be cushioned from such pressures. This indicates that trade liberalisation needs to be accompanied by sound labour market policies that facilitate reallocation of workers to more productive employment and help their citizens reap the gains from trade.

The ITS sector in high-income countries may face less adjustment pressure than some initially feared. The reasons are that international competition is only applied to certain types of services – such as application development and maintenance – and the annual growth in worldwide demand for ITS is expected to exceed new supply capacity from low-income countries for the foreseeable future. While absolute levels of employment is unlikely to drop in the ITS sector, OECD markets may well see a shift in the demand for some job occupations within the ITS sector as it recruits more highly skilled workers for the supply of higher value services.

INTRODUCTION

1. Business process services (BPS) and information technology services (ITS) are increasingly traded between emerging markets and OECD countries. While trade in these services has recently expanded significantly, this has been from relatively modest absolute levels. Worldwide spending on BPS and ITS was approximately US\$ 836 billion in 2005 and the great majority of trade takes place between OECD countries.¹ Exports from the four countries studied in this paper – *China, the Czech Republic, India and the Philippines* – made up around 2-3 percent of worldwide BPS and ITS spending. These countries were all providing the necessary combination of stable ICT infrastructure, liberal rules for foreign direct investment (FDI) and a highly educated and language proficient workforce. Yet only in India and the Philippines have the BPS and ITS sectors become significant sources of export revenue and job creation. India is leading the way with approximately 60 percent of the offshore market for trade in BPS and ITS (Citigroup, 2005).

2. International sourcing of BPS and ITS offers significant labour-cost arbitrage and enables companies to offer their clients new, cheaper, more flexible, and often higher quality services. It may offer reduced time-to-market, facilitate access to foreign markets and create business opportunities to develop new products for niche markets. The use of external providers also allows companies to focus on what they do best, freeing up capital to be re-invested in R&D and more productive activities. Innovations in business practices and low productivity growth have worked as drivers in other instances. But international sourcing of BPS and ITS from distant countries is not a viable option for most companies. It takes considerable investment and effort for a company to manage the complex undertaking and most services remain non-tradable. That said, trade in BPS and ITS will continue to grow in significance as international delivery models mature and more countries – on both the demand and supply side – enter the global markets for BPS and ITS.

3. This paper is one in a series of OECD studies on Globalisation and Structural Adjustment (GSA). The GSA project aims to deepen our understanding of the impact of globalisation in OECD and non-OECD economies. It focuses in particular on the overall economic effects of globalisation, the impact of globalisation and innovation in the business support service sector, and the links between trade and labour market adjustment.² As part of the GSA project, this paper looks at the role of major emerging economies in providing BPS and ITS to OECD markets. It is first and foremost aimed at trade analysts and policy makers but it may just as well be of use for anyone interested in the debate on offshoring – especially since the analysis offers plenty of information that is not easily accessible.

Objectives and scope

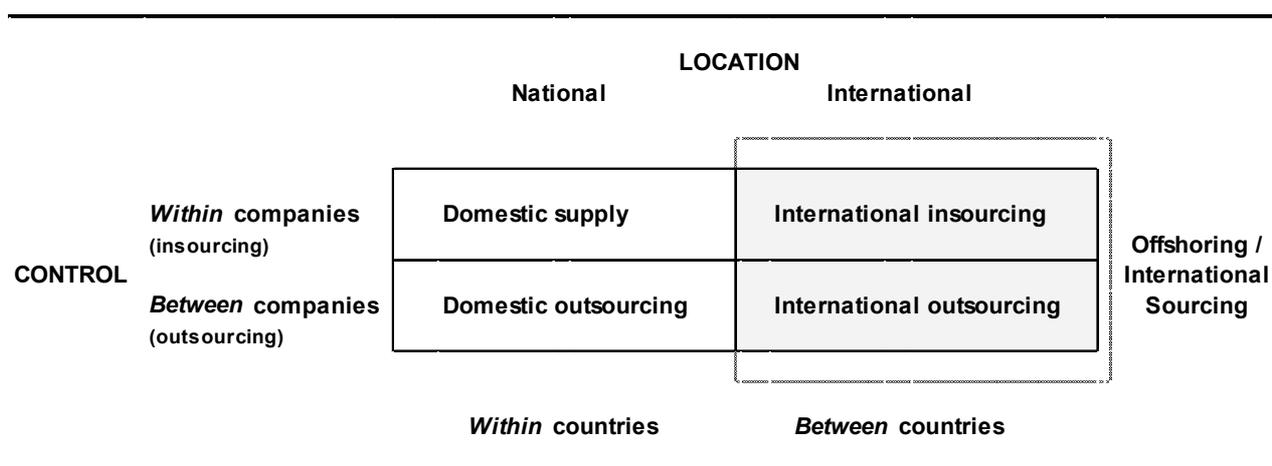
4. The objective of the paper is to examine the expansion of international supply chains involving BPS and ITS. In particular the analysis will focus on how emerging markets are integrated in the supply chains of companies operating in OECD countries. The countries that are studied in the paper have either developed competitive BPS/ITS export sectors or have the potential to do so in the future. The aim is to provide a clearer picture of the nature of and factors behind new international supply chains in these sectors. It also seeks to identify the major business- and trade-related challenges arising. In this context it presents some of the implications for labour markets resulting from increasing trade between OECD and non-OECD economies.

¹ The estimate comes from the International Data Corporation (IDC) and is cited in Nasscom (2006). It is presented as an indication rather than exact value of the global market of BPS and ITS.

² It follows up on OECD (2005a) *Enhancing the Performance of the Service Sector* and OECD (2005b) *Trade and Structural Adjustment: Embracing Globalisation*.

5. The scope of the paper is limited to *international* supply of BPS and ITS, frequently referred to as “offshoring” (see Figure 1). Offshoring covers both international *insourcing* and international *outsourcing* and involves mainly cross-border supply of services (GATS mode 1/2).³ For ITS, service delivery may also be provided through cross-border supply in conjunction with temporary labour migration (GATS mode 4). The scope of the study is further narrowed down to focus on the flow of services *from* emerging markets *to* OECD countries. It should be noted, however, that OECD-based companies are some of the largest suppliers of BPS and ITS to emerging markets through commercial presence (GATS mode 3) and emerging market suppliers are increasingly establishing subsidiaries in OECD countries to supply services locally.⁴

Figure 1. An illustration of sourcing



Source: OECD Secretariat

6. The paper focuses on a fairly broad group of services that is referred to throughout the paper as business process services (BPS) and information technology services (ITS). A ‘business process’ is an “event-driven end-to-end processing path that starts with a customer request and ends with a result for the customer”.⁵ Consequently, a ‘business process service’ is a service that performs a business process activity either in full or in part. Customer interaction services, back office operations, and professional services such as human resource, finance and accounting services are examples of business process services. ‘Information technology services’ include activities such as IT consulting, system integration, custom application development, application maintenance and traditional IT outsourcing and hardware support.⁶ The number of activities that can be classified as BPS and ITS is continuously growing due to technological progress and business innovation. Thus, an exhaustive list using a non-generic methodology would quickly become outdated.⁷

³ There is no agreement among WTO members about whether electronic supply falls under GATS mode 1 or 2, hence the terminology modes 1/2 is used

⁴ See Table 3 and Annex K.

⁵ See Gartner’s glossary: www.gartner.com/6_help/glossary/GlossaryB.jsp

⁶ See more in MGI (2005a).

⁷ This is one of the main reasons why there is no common definition used in the literature that is linked to registers such as the WTO (1991) Services Sectoral Classification list. Annex A presents an indicative list of some of the services that are outsourced.

Data and methodology

7. International trade statistics fail, to a large extent, to capture trade in BPS and ITS. Several reports have concluded that there is a substantial discrepancy between the BPS and ITS trade data captured in the IMF Balance of Payment (BOP) system and the data presented by some governments and industry associations. In the case of India, the discrepancy between data presented by IMF's BOP system and the Indian National Association of Software and Service Companies (Nasscom) exceeds 90 percent for most recent years.⁸

8. Given the challenges related to definitions and availability of comprehensive data, the following analysis will make use of data provided by government officials, industry associations and market intelligence companies. This type of data is normally based on filed income statements and market surveys. Thus it is essential for the reader to keep in mind that some data are best available estimates and may not be perfectly comparable across countries.⁹

9. The analysis is also based on information and data obtained from interviews with some 90 senior managers, government officials, industry experts and representatives of industry associations in China, the Czech Republic, India and the Philippines (Annex B presents a list of the interviewees). The interviews were conducted during 1-2 week long missions to the four countries between September 2005 and September 2006. Information obtained from the interviews has been backed up with data from the existing literature whenever possible.

10. The following paper is centred round country studies of the BPS and ITS sectors in China, the Czech Republic, India and the Philippines. Each country study presents market characteristics of the local BPS and ITS sectors with focus on trade aspects. They present distinguishing features of each country's BPS and ITS sectors to illustrate how the countries' BPS and ITS sectors are being integrated in international supply chains and the extent to which they are successful at targeting export markets. They also seek to identify the main business- and trade-related challenges facing companies and governments. The country studies are then followed by a section with the main findings and concluding remarks. It includes a discussion of some of the implications that workers and governments may face as a result of the increasing trade in BPS and ITS between emerging economies and OECD countries.

⁸ See e.g. GAO (2005) and OECD (2004a).

⁹ To facilitate the analysis of the business process services sector, data references of BPS may cover both ITeS (IT-enabled services) and BPO (business process outsourcing) that are used interchangeably by different sources.

THE CHINESE BPS AND ITS SECTORS

11. The potential attractions of China as a provider of BPS and ITS to OECD-based clients are many. The Chinese economy has grown rapidly for many years and the domestic markets for BPS and ITS are boosted by the large and growing number of Chinese and foreign-owned multinationals that operate in China. There is abundant supply of university graduates, including software engineers, many of which are highly qualified and motivated. Labour costs are particularly low for junior-level professionals and it makes China an economically compelling location for provision of BPS and ITS. Geographic proximity and linguistic capabilities are attributes useful in serving clients in Japan, Korea, Chinese Taipei, Singapore and Hong Kong. In addition, the business environment is conducive in Chinese technology and software parks that provide streamlined administration, quality infrastructure and incentive packages to prospective new exporters. Yet given all these merits, China still remains a small player on the international market for other services than high-end R&D services and lower end BPS services.

12. A.T. Kearney's Global Services Location Index ranks China as the second most attractive geography for providing BPS and ITS (see Annex H). Labour is inexpensive and infrastructure costs low but taxes and regulatory costs are higher in China than in India and the Philippines. While China has a particularly large labour force in absolute terms, people with relevant experience and foreign language skills make it less suited to provide services to markets outside East Asia. And although China is regarded as having a relatively low country risk and decent infrastructure, it scores poorly for cultural adaptability and security of intellectual property. neoIT's ranking of emerging markets places China as the third most attractive offshore location for ITS but only ninth most attractive location for BPS (see Annex F-G). China has a slight advantage compared to India in terms of costs but it significantly lags its neighbour in terms of maturity of local BPS and ITS companies and in the availability of suitable manpower.

Market characteristics

13. The BPS and ITS sectors in China are predominantly serving the domestic market. In 2000, the export share of total supply was 6 percent according to Tschang and Xue (2003). By 2006, this share was estimated to have increased to 10-15 percent.¹⁰ Exports are equally generated by Chinese-owned companies and subsidiaries of foreign multinationals. However, foreign multinationals obtain more of the large private services contracts than their Chinese counterparts (IDC, 2006a)¹¹.

14. While there is a scarcity of reliable BPS/ITS trade data in general, the Chinese market is particularly challenging to analyse due to the relative lack of transparency and availability of disaggregated data. Very few Chinese BPS or ITS companies are publicly listed. The following set of estimates provides an overview of those that are frequently presented:

¹⁰ For example Walter Fang from Neusoft Group estimates that 85 percent of services revenue stems from the domestic market while de Filippo et al. (2005) put the number at 90 percent.

¹¹ The two largest ITS companies in China are the Chinese subsidiaries of IBM and Hewlett-Packard according to Analysys International.

- Analysys International estimates that the Chinese “software outsourcing market” was worth US\$8.7 billion in 2005 (OSW, 2005).
- According to the Chinese Ministry of Information Industry, software exports in 2005 totalled US\$3.59 billion, up from US\$ 2.80 billion in 2004 (MII, 2006).
- Government officials in the Ministry of Commerce put the export value of IT and IT-enabled services at US\$ 3.6 billion in 2005 and US\$ 960 million were related to exports of software programmes and applications.¹²
- According to IDC (2006a), exports of software development services reached US\$ 933 million in 2005, up from US\$ 600 million in 2004 and US\$ 400 million in 2003.¹³
- A.T. Kearney (2004) estimates that US\$ 320 million worth of BPS would be internationally sourced from China in 2005, up from US\$ 260 million in 2004.

15. Exports of BPS and ITS are mainly delivered to companies operating in China’s eastern neighbours: the Asia-Pacific region imported more than three-fourths of these services in 2005. Japan captures roughly two-thirds of exports and a significant part of this business is generated by branches of OECD-based companies operating in Japan. European and North American markets represent around one-fifth of Chinese exports. More specifically, Japanese companies are large consumers of software application and maintenance services while European and North American companies are major clients for testing services (IDC, 2006a).

16. Notwithstanding the publicised, forthcoming rivalry between China and India as offshore services suppliers, the former country has yet to develop into a major base for international sourcing of BPS and ITS. There are indications that China is becoming the destination of choice for the supply of certain BPS and ITS to companies operating in Japan and Korea. However, this is not the case for European and North American companies and many analysts believe this is unlikely to happen in the foreseeable future.

17. Nevertheless, China may excel in foreign niche markets, some of which may generate sizeable export revenue. It is currently a capable destination at the two ends of the services value chain: low-level data processing and testing work and high-level R&D. In the R&D area, China is already one of the main centres in the world but there is rather limited R&D investment in the Chinese BPS and ITS sectors. In between the low-end and high-end of the value chain, China has yet to realise its potential as a supplier to foreign markets despite the nascent industry’s ambition and the Chinese government’s explicit goal to develop a competitive domestic software industry.

18. There is great potential for a strengthened Sino-Japanese trade relation in the BPS and ITS area. For example, the five top Chinese BPS and ITS companies presented in Annex K are mainly focusing their activities to serve the Japanese market. The geographic proximity, Japanese language proficiency and demographic and economic forces are compelling and indicate that this relation is likely to develop further if the political and business environments remain stable. Increased investment in Japanese language capabilities would in particular increase business opportunities for Chinese BPS companies.

¹² According to government officials in MOFCOM, total output covering supply for domestic consumption and exports of the Chinese software and IT services industry was US\$ 48.4 billion in 2005. This figure must be used with care given that the world’s top ten software companies had combined revenue of US\$ 84 billion the same year (OECD, 2006b).

¹³ This includes Chinese or non-Chinese companies delivering “software development services” to non-Chinese companies either directly or to their subsidiaries in China.

Fragmentation and ownership

19. While the future potential for China to become an offshore centre of choice is great, the current capabilities of the domestic industry and the market structure leave plenty of room for improvement. The BPS and ITS markets are highly fragmented with more than 13,000 SMEs employing some 900,000 professionals vying for business.¹⁴ No home-grown company has a market share over 3 percent and few companies are export-oriented – the competition is cutthroat. There are many reasons why the BPS and ITS markets are fragmented.

20. First, they are still in their infancy and foreign participation has only started to pick up over the last few years. Second, with low entry barriers, the markets are full of small and immature companies that tend to compete on price rather than quality; act opportunistically without attention to developing domain expertise; and not invest adequately in training and process controls. As a result, operating margins are low by international standards (7 percent according to de Filippo (2005)). China is also mainly exporting fairly low-value services related to data entry, modular software programming and testing and maintenance services.

21. Third, China is a large country with different IT champions in different provinces and regions. Local governments have significant equity holdings in local BPS and ITS companies and tend to favour these to external competitors. Market consolidation is also held back by local governments that are unwilling to lose control of the companies. This has slowed down the development of companies with country-wide presence. Estimates of the share of public ownership of the BPS and ITS sectors vary: Tschang and Xue (2003) have estimated the share of public ownership at about 30 percent, with another 10 percent having mixed public-private owners, and Gartner puts the public ownership share at 70 percent (Ilett, 2006). Saxenian (2003) argues that 30 percent of the software companies in China are state-owned, 27 percent are Sino-foreign joint ventures, 20 percent are collectively owned (university spin-offs), 17 percent are private and 6 percent are foreign-owned.

22. Many ITS companies founded in the 1980s-1990s were established by university faculty and universities were often awarded a share of corporate equity. For other Chinese entrepreneurs, a mixed public-private ownership structure was simply necessary to setup and run a company: official assistance (through *guanxi*¹⁵) is often essential in China to gain access to licenses, permits, financial resources and facilities. Public ownership also brings protection and favourable interpretation of regulations and enforcement of contracts. Another key benefit of a public-sector link is the perceived advantage in the competition for contracts from public institutions and state-owned enterprises. (Saxenian, 2003). The supply of software programming and IT services to sensitive industries such as defence and aerospace is predominantly provided by publicly controlled companies.

23. The fragmented markets for BPS and ITS have several disadvantages: without adequate scale it is difficult to attract multinational clients, which make up much of the market for internationally sourced BPS and ITS. The main reasons are that small service providers are less reliable due to their dependency on key personnel and limited financial resources. Technical capabilities and flexibility are also negatively affected due to their lack of capacity or breadth to absorb large projects and offer domain expertise. In addition, it

¹⁴ According to the Chinese Ministry of Information Industry (MII), there were 13,194 registered software companies by the end of 2005 (AI, 2006a). MOFCOM provided the number of professionals in the industry.

¹⁵ *Guanxi* is a central concept in Chinese society and describes, in part, a personal connection between two people in which one is able to prevail upon another to perform a favor or service, or be prevailed upon. The two people need not be of equal social status. *Guanxi* can also be a network of contacts, which an individual can call upon when something needs to be done, and through which he/she can exert influence on behalf of another (www.wikipedia.org).

negatively affects companies' ability to develop mature and efficient procedures for process and quality controls.

24. Several of the export-oriented Chinese BPS and ITS companies are start-ups by former employees of OECD-based multinationals. Many senior Chinese executives have also been recruited from abroad to the domestic industry. This situation is similar to the one in India, where many of the leading services companies were established by former employees of U.S. and British multinationals. The main difference, however, is that most of the successful Indian services companies were established in the late 1980s and early 1990s while many of China's fast growing services companies were established in the late 1990s and early 2000s. The Indian industry is thus enjoying a significant head start and the Chinese industry is trying to catch up the best it can.¹⁶

25. Some of the fastest growing export-oriented Chinese ITS companies are today privately owned. Given the competitive pressures and low-margin work at the Chinese market, more and more companies are trying to establish business models that are effective in serving foreign markets. Entry barriers to serve OECD markets are significantly higher than for domestic supply but those companies that succeed – and there is a small number of Chinese BPS and ITS companies that have more than US\$ 10 million in export revenue from OECD market (see Annex K) – operate in markets where there are fewer competitors and more profitable business opportunities.

The role of the Chinese government in attracting foreign investment

26. The Chinese government supports the local BPS and ITS sectors and tries to entice foreign companies with tax and tariff incentives, subsidies and administrative convenience in its dedicated high-tech parks. The Chinese government also actively encourages partnerships and joint ventures with foreign companies to assist in the development of Chinese ITS companies. The Chinese government is not only the regulator but also the largest client of BPS and ITS in China and the largest owner of local companies. This makes the Chinese BPS and ITS sectors stand out in a comparison with those in the Czech Republic, India and the Philippines where public ownership is almost non-existent and public procurement as a share of total demand is relatively low.

27. The Chinese government regards the software industry to be essential to economic progress and national security. The key government policy for the software industry was announced in June 2000 and published in State Council Document 18, also known as the "Notice of Certain Policies to Promote the Software and Integrated Circuit Industry Development", and later followed up by State Council Document 47 in 2002. The policy document established preferential policies to promote the development of these two sectors and the policies for software companies include:¹⁷

- Value-added tax refunds for R&D and expanded production;
- Tax preferences for newly established companies;
- Fast-track approval of software companies seeking to raise capital on overseas stock markets;
- Exemption from tariffs and VAT for all imports of technology and equipment;
- Direct export rights for all software firms with more than US\$ 1 million in revenue;
- Right to set salary levels and to grant bonuses to investors

¹⁶ Computerworld argued in 2003 that the Chinese ITS sector was 12 years behind the Indian one. The Economist put it at 5-10 years in 2006.

¹⁷ See www.csia.org.cn/chinese_en/index/No18Document.html for the text and Saxenian (2003).

28. In addition to the above-mentioned incentives, State Council Document 18 also provided for a new layout of the software sector, which included a plan to fund and promote selected companies for the creation of national champions (the Chinese government has subsequently selected around 160 national companies). It also established a Committee covering 15 Ministries to establish an effective legal framework to protect patents, trademarks and copyrights; and to ensure enforcement of this legal framework. Another pillar of the strategic document covers government incentives for the development of human resources (more on this below).

29. Documents 18 and 47 were followed by an initiative by the Torch Centre – a division under the Ministry of Science and Technology (MOST) – in November 2003 and referred to as the China Offshore Software Engineering Project (COSEP). COSEP's goal is to provide services from China to overseas corporate clients. The Torch Center annually selects qualified software companies from regional software parks to participate in COSEP and the companies are trained under supervision of ExperExchange – an American BPS and ITS company – to obtain a quality certification (ChinaTechNews, 2003). This project was launched with the help of ExperExchange and it has provided some of the impetus behind the expansion of outsourcing activities, in particular those targeting Europe and North America (Simon, 2005).

30. Although the central and local governments provide the BPS and ITS industry with significant support, there are two areas where the industry would like to see further improvement to enhance the business environment and its international visibility. First, the Chinese BPS and ITS sectors lack an effective industry association to provide best practise indicators for benchmarking, comprehensive industry data, and promote them abroad to potential investors. This is a disadvantage vis-à-vis other emerging market competitors. As Nasscom in India, BPA/P in the Philippines and the Czech ICT Alliance, such an industry association could also aid the Chinese government in formulating common priorities for the policy environment. The China Software Industry Association (CSIA) is currently the nation-wide industry association but it focuses mainly on the domestic market for software and related services. Its activities are restricted by its limited mandate provided by the Chinese government. CSIA is perceived to be first and foremost accountable to the government rather than to the industry itself.

31. Second, there are currently ten government ministries with different responsibilities to address specific issues and challenges faced by the BPS and ITS sectors. The National Development and Reform Commission (NDRC) defines the overarching policies for ministries, the Ministry of Information industry (MII) focuses on industry policy, the Ministry of Commerce (MOFCOM) promotes trade, the Ministry of Science and Technology (MOST) provide guidelines for R&D strategy, etc. Many local observers argue that the Chinese government could be more effective and facilitate the situation by introducing a more coherent long-term policy without conflicts of interest with regard to the responsibility of different government ministries.

Box 1. Dalian Software Park

The Dalian Software Park (DLSP), established in 1999, is one of the fastest growing software parks in East Asia and a major gateway for Chinese exports of IT and IT-enabled services to Japan and Korea. It is also one of six “national software export bases” approved by the Chinese Government to export services. Due to Dalian’s geographical proximity and historical links to neighbouring Japan and Korea, the region has a substantial Japanese and Korean speaking population, which can be employed to supply voice-based and non-voice-based business process services. It also hosts many universities and research institutes that provide plenty of graduates that form the backbone in the outsourcing sector.

Exports have grown rapidly: after the first establishments of mostly domestic companies, Panasonic setup operations in 2001 as the first Japanese multinational and GE Capital International Services arrived the following year. In September 2006, 340 companies employed approximately 30,000 professionals in the DLSP and roughly 40 percent of the companies were foreign-owned. Half of the companies supply BPS and ITS services to foreign clients mainly in East Asia and Japan captures some 80 percent of exports. Revenue is to a large extent made up of software application development (40 percent) and business process services (30 percent). Engineering services, embedded software and R&D make up much the rest. A joint venture between DLSP and a Singaporean company is currently investing to develop the park by adding 9 km² to the current 3 km², which will make it the largest software park in China. This project is to form an industrial arrangement enclosing a Software Development Zone, a Research & Development Zone, an Information Service Zone, an Education & Training Zone, and a Corporate Campus Zone, plus adjacent public services and housing.

DLSP offers companies a set of preferential policies. Foreign companies that operate in the DLSP can enjoy preferential tax treatment during five years from the year the company starts making a profit: the taxes of the first 2 years are exempted and taxes for the following 3 years are reduced by 50 percent. Moreover, as long as exports make up at least 70 percent of total production value, income tax is reduced from 33 percent to 10 percent and the maximum VAT from 17 percent to 0-3 percent. For software products, VAT and export tax are exempted. For technology exports, the sales tax and income tax are exempted. Companies that export software products for more than US\$ 1 million can conduct trade operations without having to make use of a third party export/import agent. Furthermore, import tax and VAT are exempted for imported equipment used by software companies and for technology, including software, and the parts and spare parts imported together with the equipment (with some exceptions).

Companies that employ graduates with Bachelor degrees or higher qualifications are further allowed to register their employees as permanent residents, who are exempted from paying the city environmental fee. The same goes for overseas Chinese that come and work in the DLSP. They receive long-term temporary residential cards and their children enjoy similar rights as locals for school and kindergarten services. Annual “special funds” are provided from state departments, the province and the city to DLSP-based companies in addition to support from risk capital companies. Companies and employees also enjoy preferential treatment in buying or renting office buildings in the park.

Source: OECD (2006), www.dlsp.com.cn and discussions with representatives from the DLSP.

Challenges to China’s BPS and ITS sectors in supplying international markets

32. Chinese-owned and foreign-owned companies that supply BPS and ITS from China face a number of challenges. Most challenges in the BPS and ITS sectors are related to supply side constraints. The biggest challenge is to recruit and retain talent, in particular middle and senior managers of the calibre needed to serve foreign markets. Another type of challenge relates to maintaining operational efficiency – including systems for formal procedures, processes and quality control – and this paper only touches on some of the China-specific issues that companies face. Regulatory constraints affecting trade are relatively few and the sectors benefit from a rather open business environment. This is partly due to business models based on cross-border supply and openness to foreign direct investment. The following section looks at challenges that are repeatedly highlighted by corporate executives in China:

Supply-side constraints

Recruitment and retention

33. The BPS and ITS sectors are highly labour, not capital, intensive and human capital is each company's key asset. Although China produces a large number of university graduates every year, recruitment is for most Chinese-based service companies the single largest challenge. The sheer size of the talent pool is often presented as a main strength but identifying, hiring, training, retraining and retaining talent are real challenges for companies. Most graduates and engineers are unsuited to work in an export-oriented sector where effective communication and client interaction in many instances are essential. The competition to lure the best software engineers (for the ITS sector) and other university graduates with technical and business training (for the BPS sector) is tough. Foreign multinationals have an advantage since they can afford to pay a wage premium for top talent; they may have an attractive brand name and offer opportunities to work abroad and with new technology in exciting projects. Domestic companies generally pay less but offer a somewhat different value proposition to its employees.

34. At the junior level, recruitment is not yet a major issue in China even if it takes considerable investment in training before new employees become productive. At a more senior level, for project managers and middle managers, the situation is different. The relative infancy of the Chinese BPS and ITS sectors makes it naturally difficult to find management talent with mission critical experience and expertise. The situation is not aided by the structural gap left from the Cultural Revolution, which drastically reduced the education level of a generation of Chinese.

35. The scarcity of middle and top level talent has effectively put a brake on growth and led to rapid salary inflation for these professionals (the salary increases are much more modest for junior level professionals). Some Chinese companies try to tackle the situation by recruiting managers from abroad, in particular from the sizeable Chinese Diaspora. According to DeWoskin (2005), some 60 million Chinese live outside China and make up a large source of capital and technology and provide crucial business networks.

36. Several policy programmes have been implemented by the Chinese government to provide incentives for Chinese scholars based abroad to move to China. For example State Council Document 18 established a fund, managed jointly by the State Bureau of Foreign Experts and Ministry of Education, to send software developers overseas for training. A.T. Kearney (2004) refers to survey results by Hewitt and Associates showing that two-thirds of companies employ numerous Chinese expatriates and roughly half of director-level positions and above are filled by Chinese expatriates. The lack of middle and senior managers also force many companies to nurture their young talent and fast-track them into management positions.

37. Labour attrition is another challenge.¹⁸ With only six export-oriented services centres, competition is especially hard as more and more companies move to the same locations and vie for talent. In the BPS sector, attrition rates are high – especially for voice-based services – but even at 30 percent, levels are lower than in India and the Philippines, and significantly lower than in many OECD countries. The ITS sector also suffers from attrition but it is generally lower than in the BPS field. To tackle this situation companies increasingly focus their attention to enhance core HR policies, e.g. by designing clear career paths, investing in education and training, and creating more pleasant work environments. Many companies also move delivery centres to smaller towns outside traditional technology and software centres where wages are lower and opportunities for staff to jump to neighbouring competitors are fewer. More

¹⁸ High attrition rates coupled with the strong need for investment in training creates a catch 22 situation where the incentives for investment in training are lower the less an employee is likely to stay.

and more companies are also providing performance related bonuses and relaxation of ownership rules will allow more companies to offer equity to key personnel.

Box 2. Chinese vs. Indian labour supply

Leading educational indicators show that China is quite well placed to provide ample talent for its service industry. According to Deloitte Research (2006), there is more than twice as many Chinese 18-23 years-olds (15 percent of total) than Indians (7 percent) enrolled in higher education. Chinese secondary schools host almost half the number of pupils per teacher (18 pupils/teacher) than Indian secondary schools (34 pupils/teacher). China also spends more resources on R&D and has many more computer and internet users (see Annex J).

For the supply of BPS and ITS in English, India has a strong advantage over China. Many Indians are bilingual (or trilingual) with English as a mother tongue while the great majority of Chinese have limited exposure to the English language. However, in a generation's time, this difference will become less pronounced since the Chinese government has decreed that all Chinese children must study English from the age of five.

Language proficiency and international business acumen

38. The supply of BPS and ITS often involves intensive interaction and communication with corporate clients. BPS are also often provided through real-time communication. The ability of service professionals to properly identify the task, solve the problem, and communicate the solution is thus related to his/her communication skills, technical capabilities and business acumen. Chinese professionals have a natural advantage to foreigners when serving their domestic market. However, Chinese professionals face a serious challenge when it comes to serving foreign clients and customers. Most Chinese professionals have limited exposure to foreigners and foreign business environments. BPS and ITS companies seek to address these gaps by investing in soft skills like language proficiency, communication skills and cultural awareness.

39. China has a sizable population of Japanese and Korean speakers in its North-Eastern provinces. A growing number of foreign multinationals are supplying voice-based support services in Japanese and Korean to customers and clients in China's eastern neighbours (see Box 3). The language proficiency and cultural affinity to these countries aid the process of supplying non-voice based business process services and IT services. China is today the main, although nascent, offshore destination for cross-border delivery of BPS and ITS to Japan and Korea.

40. The language barrier is arguably the main reason why China has yet to develop into an offshore location of choice for the supply of BPS and ITS services to companies in Europe and North America. An exception is certain high-level software programming and R&D-related activities for which China's abundance of scientists and knowledge workers are particularly well suited. The situation is different for Indo-European language skills. While China's current generation of pupils learn English at elementary school, students that graduate from university today have, at best, limited knowledge of spoken English. Those that do learn English have few opportunities to practise their skills. Even at international master degree programmes at some of China's best universities, students can read in English but writing and verbal communication skills remain low.

41. But this is starting to change, and will continue to change, as more English-speaking students will graduate in the future and more Chinese students return with degrees and language skills from overseas. To serve foreign markets, companies will not only need to find talent with language skills but also invest heavily in training to enhance workers' understanding of language nuances and the importance of tone in customer interaction. This is particularly important for sales and marketing activities abroad.

Regulatory challenges

42. The regulatory challenges are related both to the domestic business environment and to the regulatory environment in client countries. In the major *client countries* Japan, Korea and the United States, there are currently few regulatory concerns for Chinese-based BPS and ITS companies. The Chinese ITS companies that deliver services with the help of a global delivery model that is partly dependent on temporary movement of professionals between home office and client office face the same type of restrictions that Indian companies face in Europe and North America (see Indian chapter for an extensive discussion).¹⁹ These restrictions relate to the relatively unpredictable and time-consuming administration of business visas and work permits, which increase complexity and business risk.

43. So far, few Chinese companies send professionals to their client countries and the issue, while real, is thus limited to the companies that employ a global delivery model with a significant onsite component. And Chinese professionals do not face this type of challenge in their relation with Japan and Korea, which also capture most of Chinese services exports. Foreign multinationals operating in China can move employees on intra-corporate work permits which are easier to obtain and involve less discretion.

44. The view of OECD-based companies with regard to regulatory challenges in *China* is rather positive too, not least because the software and technology parks that host almost all foreign-owned companies provide a unique trade environment with streamlined administration, high standards of infrastructure and financial incentives. These software and technology parks are a relief since it is a rather time consuming and tedious process to establish a subsidiary in China and there are some other issues as well (see Annex C).

<p>Box 3. Indian companies are increasingly investing in China</p> <p>After much contemplation and evaluation, the Indian BPS and ITS sectors have decided to approach China as a business opportunity rather than a competitive threat. Leading Indian companies Satyam Computer Systems, TCS and Infosys Technologies all established branch offices in China in 2002-03. These companies employed some 400-600 Chinese professionals in their development centres in China during the fall of 2006. However, towards the end of the decade, the companies expect to have increased their Chinese headcount tenfold. Much of the workforce will be used to serve clients in neighbouring Japan and Korea.</p> <p>China can be leveraged by foreign/Indian companies in three main ways. First, some companies are targeting the rapidly growing domestic market with local and foreign-owned multinationals. Some 80 percent of Fortune 500 companies have operations in China. Competition is high but new niche markets such as engineering services are providing new growth opportunities. China's accession to the WTO and the liberalisation of the banking sector will put pressure on domestic banks to increase productivity and this is expected to increase the market for domestically sourced BPS and ITS. Second, China is the natural offshore base, or "nearshore" bridge, to serve clients in Japan, Korea and the Asia Pacific. Third, with time, companies will build up capabilities to use their Chinese branches to serve clients also outside North-East Asia.</p> <p><i>Source:</i> OutsourcingWorld and Vandrevale (2006)</p>

¹⁹ Companies often need to move their employees to the client premises to negotiate, familiarise, transfer information, oversee, implement and maintain solutions and software.

45. The Chinese court system is considered to be unpredictable and recourse to legal means expensive. Most contracts are signed directly in the client country so that potential disagreements can be settled according to the jurisprudence in the client country. Foreign companies normally hire consulting companies to establish their subsidiaries since this process can take considerable time and involve dealings with many public agencies.

46. According to China's Schedule of Specific Commitments related to GATS, for "computer and related services", China has no limitation on market access or national treatment for mode 1-3 supply of "consultancy services related to the installation of computer hardware", "data processing services", "input preparation services", "data processing and tabulation services", "time sharing services" and "management consulting services". Limitations to mode 4 are related to education and work experience levels. For "software implementation services", "systems and software consulting", "systems analysis services", "systems design services", "programming services" and "systems maintenance services", market access is only allowed in the form of joint ventures (with foreign majority ownership permitted) (WTO, 2002). Foreign industry has previously called for these limitations to be removed (USITO, 2003).

47. However, unlike in many other services sectors (e.g. telecommunications) in China, the BPS and ITS companies consulted in this study did not consider ownership regulations to restrict their activities. Ownership plays much more of a crucial role in government procurement: foreign-owned companies find themselves at a disadvantage in the bidding process with government agencies and state-owned enterprises. Yet a similar situation holds for the other countries studied in this paper and Chinese-owned companies find themselves at a disadvantage when bidding for contracts overseas.

48. There are significant concerns about Intellectual Property Right (IPR) violations in China, including patent, trademark and copyright violations. Pirated versions of enterprise and consumer software are readily available at the black market. However, IP violations do not necessarily affect the BPS and ITS sectors and companies dealing with IPR take a fairly pragmatic approach to tackle the issue in China. Most software applications and even software solutions, when tailor-made for corporate clients, are difficult to pirate. IPR is in most instances not relevant to services provision in the sectors studied here. The view of industry experts is that the legal framework in China to a great extent is developed on this issue but enforcement is not necessarily as strong as it could be.

49. Foreign investors are somewhat less concerned following China's accession to the WTO, which protects them under the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS)²⁰. State Council Document 18 also provides stiff penalties for piracy. The Chinese government has increased its effort in cracking down on IP violations in parallel with its own campaign to help foster domestic innovation – which itself is highly dependent on proper enforcement of IPR. Tackling IP concerns to some extent hinges on the business model that a foreign company adopts in China. The captive unit, joint venture and use of external provider have difference merits with regard to control and security (see more in A.T. Kearney, 2004).

50. One type of regulation that is particularly relevant in the BPS sector relates to data privacy and security. Few regulations act as barriers to trade and clients require the highest standards for data security and privacy to outsource fragments – or activities – of their value chains. Companies invest in infrastructure and the business processes required to work according to these standards in order to compete for business. Regulations may raise the entry barriers to suppliers but are generally applied in a non-discriminatory manner (see Indian chapter for more on this issue).

²⁰ WTO accession also opened China's telecommunications services market to foreign investment, cut tariffs under the Information Technology Agreement (ITA), banned technology transfer and local content requirements, and ensured national treatment for internal taxes (Rohlmeier et al., 2003).

THE CZECH BPS AND ITS SECTORS

51. The Czech Republic is regarded as one of the most attractive locations in Central and Eastern Europe for international supply of BPS and ITS. It is also one of the more attractive locations worldwide. The country has several merits as a base for the supply of BPS and ITS within Europe. Among the chief advantages are the country's geographic and cultural proximity to large markets in Western Europe, its well educated, language proficient and cost effective workforce, its traditionally strong domestic engineering industry and well developed infrastructure. Foreign services companies also serve the growing domestic market and foreign expatriates like Prague for its high quality of life. Since May 2004, the Czech Republic is a member of the EU, which facilitates movement of service personnel within the internal market, ensures harmonisation of domestic laws and regulations with those in other EU countries – including for data privacy and security – and provides unlimited access to the European market.

52. A.T. Kearney's Global Services Location Index ranks the Czech Republic as the 7th most attractive geography for providing BPS and ITS (see Annex H). The country scores particularly highly for its business environment, with low country risk, well developed infrastructure and high cultural adaptability. It also does well in international comparisons of quality of education, language proficiency and staff attrition. The main weaknesses relate to the limited size of the young and technically trained workforce and the domestic industry's lack of experience of delivering BPS and ITS services abroad. Additionally, the labour cost structure is significantly higher than in many other emerging markets with comparable capabilities. Czech salaries in the BPS and ITS fields are 100-150 percent higher than in China and India, and 60-100 percent higher than in the Philippines (see Annex D). Labour cost is not the decisive factor for foreign investors in the Czech Republic.

53. EIU (2005) ranks the Czech Republic as Europe's most attractive "offshoring environment" and third among emerging markets after India and China.²¹ The attractiveness stems from its relatively low labour costs, favourable regulatory environment and proximity – both culturally and historically – to Western European markets. The country's well-educated workforce distinguishes it from closely ranked Poland and Slovakia. In neoIT's Offshore Attractiveness Index for ITS, the Czech Republic ranks 6th after countries like India and China that score higher for industry maturity but ahead of the Philippines (see Annexes F-G). For international supply of BPS, the Czech Republic ranks 7th behind India and the Philippines but ahead of China. In both areas, Poland and Ireland rank somewhat higher than the Czech Republic and it highlights the fact that different countries have different comparative advantages within the diverse BPS and ITS sectors.

Market characteristics

54. According to the IDC (2006b), total revenue in the Czech ITS sector was US\$ 1.15 billion in 2005 and the market has grown by roughly ten percent per year. Growth in external services expenditure is triggered by low but increasing domestic outsourcing, public procurement and new establishments of

²¹ The EIU evaluation model also shows that high-income countries like Canada, Singapore and Hong Kong are among the top seven most attractive "offshoring environments" due to their skilled workforces, quality infrastructure and regulatory environments.

shared services centres by foreign multinationals. The domestic market is increasingly attractive for both domestic and foreign suppliers. In 2005, hardware and software support and installation services made up 28 percent of the market, systems integration 22 percent, customisation 23 percent and outsourcing 15 percent. The finance sector (26 percent of the market), combined manufacturing sector (16 percent) and government sector (14 percent) were the major client sectors.

55. The ten largest ITS companies captured 38 percent of the market and seven of those – including the top six – are subsidiaries of foreign multinationals (see Annex K). A few big foreign companies dominate the government procurement market. Domestically-owned companies are strong in certain niche markets for the supply of IT services: e.g. Unicorn is market leader in custom application development; and AutoCont CZ and ČEZData are market leaders in network and desktop outsourcing. However, revenue is to a large extent generated by domestic clients rather than through exports.

56. So far, the home-grown Czech BPS and ITS sectors have neither amassed critical size nor developed significant presence in client countries. McKinsey (2006) argues that this fact is due to increasing business opportunities at home, regulations and inconsistencies in labour laws that complicate foreign expansion, and a relatively slow embrace of international sourcing by Central and Eastern European companies. The international supply of BPS and ITS that stems from the Czech Republic is mainly generated by a limited number of foreign multinationals, predominantly in the IT field, that provide services to their European clients from shared services centres. The Czech Republic is not a traditional offshoring destination where internationally insourced and outsourced services are delivered to clients in far away countries but rather a nearshoring destination where internationally insourced services are delivered to other European countries.

57. McKinsey (2006) estimates that the global market for offshore IT and business process services is worth around US\$ 30 billion and Eastern Europe supplies less than one percent of this value. In 2004, the Czech Republic exported approximately US\$ 60 million of ITS, up from US\$ 26 million²² in 2003 and US\$ 40 million of BPS, up from US\$ 15 million in 2003 (Vashistha et al., 2005; neoIT, 2004). These estimates indicate that the industry is growing from a fairly modest level and is still preoccupied with serving the domestic market. Like in China, the Czech BPS and ITS sectors are still relatively immature and trying to build capacity to serve a more international clientele in the future.

58. According to survey results from 2005, covering 52 out of a total of 150 companies that provide outsourced ITS in the Czech Republic, most companies reside in Prague with second tier cities like Ostrava, Plzen and Brno gaining in significance due to local access to graduates from technical universities and lower labour costs (70-80 percent of Prague salaries) (IT Outsourcing Center, 2005). Major export markets for the surveyed companies were neighbouring Germany, Austria and Slovakia. UK, Germany and Austria were the largest markets for BPS. Other client locations included Canada, USA and the Nordic countries.

Nearshoring

59. Nearshoring is a process where a specific country is chosen to service countries within close geographic proximity due to its favourable combination of labour cost, access to talent, cultural proximity and other enabling factors.²³ The Czech Republic is becoming a nearshoring destination of choice for multinationals wishing to consolidate their back office and IT support in shared service centres serving

²² The estimate includes domestic ITS companies and multinationals with service delivery operations in the Czech Republic.

²³ The Czech workforce is too costly and too limited in size to develop into an “offshore” destination servicing non-European markets.

continental Europe.²⁴ Central and Eastern European countries are rising to the top of the list for multinationals seeking to reduce costs for BPS and ITS supply in Europe but unwilling to bear the risks associated with offshoring to Asia.

60. One of the main investors in the BPS and ITS field in the Czech Republic is DHL, which operates a large shared services centre in Prague to track transactions and handle billing for its European customers (see Box 4). IBM operates a 1,200 strong workforce in its Integrated Delivery Centre in Brno that is part of IBM's global delivery strategy and Accenture has 1,250 services professionals at its shared service centre in Prague providing business solutions in the areas of for example finance and accounting to European clients (IDC, 2006). Other examples of shared – or nearshoring – centres include ExxonMobil (shared financial and accounting service centre), Hewlett-Packard (EMEA regional headquarters), Icon Communication Centers (outsourcing contact centre), Lufthansa (data processing centre), Siemens (shared financial and accounting service centre), Symbol Technologies (shared servicing and financial service centre) and Tesco Stores (shared service centre for IT, finance and accounting).²⁵

61. Leading Indian BPS and ITS companies have also started to invest in development centres in Europe and in particular in Eastern Europe. The global delivery model that was pioneered by the Indian outsourcing industry is not optimal for many foreign clients and it is often easier and more effective to serve European clients from countries like the Czech Republic. Progeon, a subsidiary of Infosys Technologies, was the first Indian IT-related investment in the Czech Republic. The company has 100 professionals providing IT support services from its Prague office and another 100 professionals providing BPS from its office in Brno. The company plans to increase its Czech workforce to 1,000 in the near future.²⁶

Box 4. Serving European clients from the Czech Republic

Following the integration of DHL, Danzas and Deutsche Post Euro Express in April 2003, the new DHL, with headquarter in Bonn, decided to establish three global IT services centres to provide 24/7/365 IT support to its 120,000 clients that send more than one billion parcels annually. Prague was chosen as the European centre, replacing smaller units in Switzerland and the UK, and other global IT services centres were located in Scottsdale and Kuala Lumpur. These Czech, U.S. and Malaysian centres are interconnected via a corporate telecommunications network and support DHL's mail, express and logistics businesses around the world.

The Prague centre was fully operational by January 2005 and DHL plans to invest €500 million over five years in its Prague operations. By 2008, the Prague centre is likely to employ some 2,000 employees. According to DHL's CIO, the Czech Republic was chosen for its "availability of skilled and flexible labour force, well established and reliable telecommunications networks, good air links as well as for the optimum incentives package offered by the Czech government". DHL hopes the project will reduce its US\$ 1 billion IT budget by 60 percent and the consolidation of support centres has already increased productivity by 20 percent.

Source: Czech Focus (2005), EIU (2006) and McCue (2004).

62. The reason why the demand for nearshoring services is growing is that it is easier to service foreign clients from a closer geography. According to DiamondCluster (2005), client satisfaction has dropped recently for offshored services. Management complexity is a significant deterrent. Cultural proximity has a big impact on communication and large time-zone differences are a disadvantage for

²⁴ Other common locations for shared services centres include Ireland, Hungary, Slovakia and Romania.

²⁵ According to the www.czechinvest.org website.

²⁶ According to CzechInvest.

certain types of services. For SMEs, nearshoring is often the only viable alternative to keeping operations at home due to management overhead costs and operational risks associated with offshoring. An added benefit of nearshore locations like the Czech Republic is also that sensitive data remain within a regulatory environment similar to the one of the client's home country.

63. The Czech Republic is vying for the same foreign business as other Eastern European countries like Hungary, Slovakia, Poland and Romania. So far, these countries have all managed to attract a fair share of international investment. The different markets have yet to clearly differentiate their service capabilities. These countries have similar strengths and weaknesses and government officials and companies compete for as large a share of investment as possible in the hope that foreign multinationals will establish service centres which in time will yield technological spillover effects and transfers of management know-how to the domestic industry.

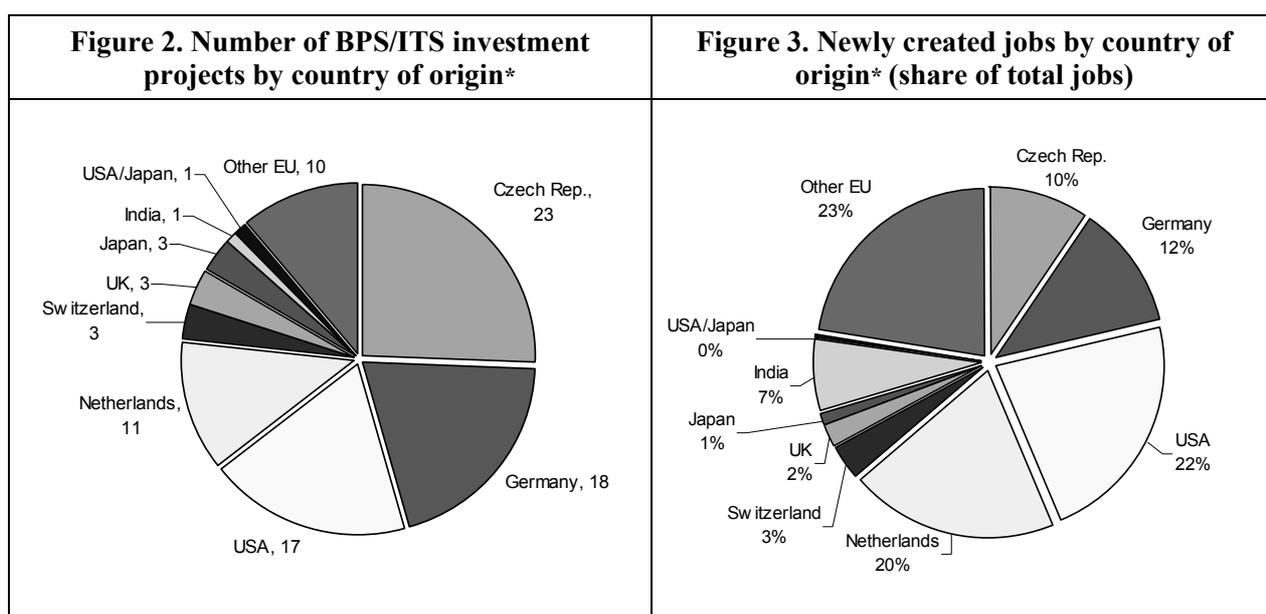
The role of the Czech government in attracting foreign investment

64. The Czech government provides investment incentives through the CzechInvest agency. CzechInvest has identified the BPS sector as one of its top priorities. According to Government Decree 1238 of 10 December 2003, the Framework Programme for Support of Technology Centres and Centres of Business Support Services, foreign investors that establish headquarters, software development centres or expert solution centres and invest a minimum of €0.5 million, create a minimum of 15 new jobs sustained for five years, and export at least 50 percent of supply are eligible for support. For call centres, high-tech repair centres, shared services centres, the minimum investment is €1 million and the number of new jobs 50. Companies are also required to finance a minimum of €0.25-0.5 million from their own equity (CzechInvest, 2006). The incentives consist of subsidy grants for:

- **business activities**, with up to 50 percent of eligible business expenses (wage or capital expenditure on tangible and intangible assets) paid during the a maximum of ten years and up to the ceiling of state aid; and
- **training and re-training**, with up to 35 percent (30 percent in Prague) of special training costs and 60 percent (55 percent in Prague) of general training costs paid during a period of 3-5 years and dependent on the number of jobs created.²⁷ The maximum training subsidy is CZK 100,000-150,000 per employee.

65. The maximum ceilings for state aid during 2007-2013 period were not yet negotiated when this report was prepared. However, the maximum ceilings are likely to be reduced from 20-50 percent to 10-40 percent depending on the region receiving the investment. Between June 2001 and 16 November 2006, 90 companies had been approved by CzechInvest to receive financial support. In return, these companies have pledged to invest €492 million and create 14,872 jobs. A majority of the jobs are for university graduates. Figure 2-3 show the country of origin of the companies that established services centres in the Czech Republic and the jobs created by the various investments. Next to the ten percent of jobs created by Czech companies, the most labour-intensive investments were undertaken by EU-based companies (57 percent), U.S. companies (22 percent) and Indian companies (7 percent).

²⁷ 'Special training' refers to training by which employees gain project-specific knowledge and skills that cannot be easily transferred to other companies. 'General training' refers to training by which employees gain general knowledge and skills that is not project-specific.



* Country of origin: headquarters of majority owner

Source: CzechInvest

66. The industry association *the Czech ICT Alliance* was founded under the auspices of CzechTrade in December 2005. Its role is to help enhance the international profile of the Czech ICT industry. Improving the visibility of the Czech BPS and ITS sectors is needed in an increasingly competitive international business environment and the Czech Republic has yet to differentiate itself from neighbouring countries. The main reason why government incentives are perceived as important in Central and Eastern Europe is that the country profiles are relatively similar. A more generous government funded programme can make the difference when foreign investors decide where to locate shared services centres in the region. The situation is different in China, India or the Philippines where country profiles differ significantly and cost structures are lower.

67. While the Czech government is supportive of the BPS and ITS sectors, there is much room for improvement in its procurement policy. Government procurement is dominated by a few large companies and several observers argue that the procurement process could be significantly more open and transparent.²⁸ Survey results provided by the World Bank (2006) show that the share of companies describing corruption as a problem for their operations and growth in the Czech Republic has drastically increased. Between 2002 and 2005, the share increased from 28 percent to 49 percent. This situation is a great deal worse than in Slovakia, Poland and Bulgaria where the development was the opposite.

Challenges to the Czech BPS and ITS sectors in supplying international markets

68. The business challenges facing the Czech BPS and ITS sectors in their quest to serve international markets are to a large extent related to the operational issues that face any nascent industry that starts to target foreign markets. On the supply side, these challenges are related to recruiting technically adept professionals and experienced managers that master foreign languages, building domain expertise, boosting productivity and managing complexity in an increasingly international market place. On the demand side, the main challenges are to develop sales and marketing organisations abroad and in

²⁸ Corruption and transparency concerns were raised in several of the interviews and IDC (2006b) refers to it as having a moderately negative impact on the market in the medium term future.

general increase the visibility of the Czech Republic as a location for BPS and ITS supply. While Czech exports of BPS and ITS still are relatively modest, the country has the potential to attract significant amounts of foreign business and the Czech government hopes that the BPS and ITS sectors will help reduce the economy's strong dependency on exports of manufactured goods (see Annex I).

69. A survey by the IT Outsourcing Center in 2005 highlighted two challenges affecting the Czech services sector. First, there is a scarcity of technical personnel: the number of university graduates is relatively low and some of the software engineers migrate abroad. Second, the cost effectiveness of the Czech BPS and ITS sectors is being diminished by salary inflation, taxation and high levels of bureaucracy. According to CzechInvest (2004) and the Czech Ministry of Informatics (2006), Czech BPS and ITS companies suffer from their inability to effectively market themselves abroad and tend to rely heavily on their technical competence. The industry would gain from a more German and English proficient workforce, a more developed service culture and improved IPR protection. The capital market for SMEs is also a concern: e.g. Cermak et al. (2006) argue that access to capital has increased following the privatisation of the Czech banking industry but SMEs still suffer from limited access to capital. These weaknesses put the Czech Republic in a challenging situation where high-value services are provided mainly by Western companies while companies in Eastern Europe are building capacity and increasingly compete on cost in the same foreign markets as the Czech industry.

70. The labour cost arbitrage is not likely to be sustained in the long term and future EU accession countries, Bulgaria and Romania, are expected to increase the competition especially on the lower end of the services value chain. Ukraine is also a potential low-cost location for BPS and ITS work and a future competing geography for the Czech industry. However, companies from China, India and the Philippines, which are studied in this report, are not competing directly for the same business as the Czech industry.

71. During the next decade, it is likely that some of the BPS and ITS work that is done in the Czech Republic will migrate eastwards due to labour cost differences. In the hardening competition with the Czech Republic's eastern neighbours, Hungary, Slovakia, Poland and Romania, and non-EU members Ukraine and Russia, the Czech sector will need to move up the value chain and find niche areas where it can be at the forefront in specific domains or areas of technical expertise. The Czech industry may gain from an increased participation by companies further east if it can develop a business model that leverages the capabilities in those countries. Czech companies may for example outsource or insource some of their work to those countries. To become a more attractive partner to international clients, the Czech industry will need to increasingly focus on process maturity and quality control (e.g. certification such as ISO and SEI CMMi) and develop effective sales and marketing channels abroad.

Supply side constraints

Recruitment and retention

72. The Czech education system – in particular its technological universities – is one of the country's inherent strengths and a decisive factor for potential new ITS establishments. 92 percent of Czechs in their twenties have completed higher secondary education (compared to an EU average of 69 percent) and around 30 percent of tertiary students enrol in science, engineering, manufacturing and construction programmes (see Annex J). This is higher than in many other emerging markets and according to OECD's Pisa study, the Czech Republic has the highest quality of maths and science education in Central and Eastern Europe (CzechInvest, 2005). The Czech Republic produces 14,000 university graduates in technical and scientific subjects each year (neoIT, 2004) and there are currently some 26,700 students in IT-related fields in the Czech Republic (CzechInvest, 2005). Estimates of the annual number of IT graduates vary: 2,000-3,000 graduates result from a narrow definition of an "IT graduate" and the number increases to 4,000 with a broader definition.

73. According to figures by Universitas, 60 percent of 18-29 year-olds speak some English and 52 percent have studied German.²⁹ The proportion of Czechs that can speak English is set to increase since 95 percent of secondary school students study English (neoIT, 2004). Russian is a common language among older generations. What is worrying to the BPS and ITS sectors, however, is that although total spending per pupil has increased by 15 percent in real terms since 1989, spending per university student has fallen by more than 40 percent in real terms and the rate of admission to tertiary education among university-age students is the third lowest in the OECD (EIU, 2006). The domestic workforce is also set to shrink in the future due to the extremely low birth rates experienced in the 1990s. As a result of this demographic shock, Czech universities will either need to reduce entrance requirements or enrol fewer students in the future. New policies to attract foreign labour may be necessary to help smooth expected labour shortages.

74. In 2006, the Czech BPS and ITS companies could still recruit manpower without too much of a problem – at least outside Prague. Most foreign establishments are located in Prague and tend to pay a significant wage premium compared to domestically-owned companies. Staff attrition is less of a problem in the Czech Republic than in the Asian countries studied in this report, in particular India. It does happen, however, that multinationals enter the Czech market and pledge to recruit hundreds of workers within a short period of time and this tends to create short-term fluctuations with regard to staff attrition and put upward pressure on salaries.

75. As in China, the Czech BPS and ITS sectors suffer from a shortage of experienced managers that are both customer focused and quality conscious (Economist, 2005). Managers with strong backgrounds in both domestic and foreign markets, at ease with the business acumen and communication standards expected by foreign clients, are equally in short supply. This situation is not helped by the general unwillingness of Czechs to move and work in new cities. It is also challenging for the ITS sector to find senior programmers with 5-7 years of work experience since such professionals tend to have management positions.

Regulatory challenges

76. The Czech business environment has in many regards improved over the last years and corporate taxation is being trimmed in line with competition from other newly acceded EU members. Annex C shows that Czech regulatory and institutional efficiency affecting the business community is broadly on parity with the OECD average in the areas of investor protection, access to credit, paying taxes and employing workers. There is still a lot of room for improvement when it comes to the ease with which entrepreneurs can start a business, close a business and enforce contracts. The judicial system is particularly slow compared to the OECD average and also slower than in China and the Philippines.

77. Czech ITS companies do seldom employ a service delivery model based on the temporary movement of service personnel. The economics behind the global delivery model, which is based on service personnel migrating temporarily from the supplier to the client, is not feasible in the Czech business environment. Yet some key personnel need to be transferred abroad at times and this is made more difficult by the decision of some EU countries to phase in the freedom of movement in the European internal market over a number of years. However, this is a temporary restriction that only affects a limited number of ITS projects involving foreign clients. Most Czech professionals are working to serve the domestic market and those serving foreign markets are predominantly working for foreign companies that can move skilled personnel without problems. With regard to movement between the Czech Republic and non-EU countries in Eastern Europe, movement of high-skilled workers is less difficult than movement of low skilled workers.

²⁹ Cited by CzechInvest (2006).

THE INDIAN BPS AND ITS SECTORS

78. India is the leading emerging market exporter of BPS and ITS to the OECD area. India's export-oriented *ITS sector* started to gain momentum already in the middle of the 1990s and has grown rapidly since then. The success of the ITS sector is demonstrated by the fact that three Indian ITS companies ranked among the world's six most valuable ITS companies in 2006.³⁰ Each one of these Indian companies exported more services than the combined ITS sectors of China, the Czech Republic and the Philippines (see Table 3 and Annex K).

79. The Indian *BPS sector* is less mature than the ITS sector and started to reach scale only some 3-4 years ago. It faces strong competition from other emerging markets such as the Philippines for services in English. Indian companies are increasingly investing in emerging markets with complementary language capabilities, including in China to serve East Asian markets, the Czech Republic, Slovakia and Hungary to serve EU countries, and in the Philippines to serve American clients. In addition, some of the leading Indian companies are increasingly investing in supply capacity in other OECD markets.

80. India's strength lies in its large English proficient talent pool and its large sophisticated BPS and ITS companies. The BPS and ITS sectors are labour-intensive rather than capital-intensive and a highly skilled workforce with language and communication capabilities is paramount in serving foreign markets. Compared to other emerging markets that export BPS and ITS, India stands out with its more mature and experienced home-grown industry and the combination of size and quality of the relevant workforce. Inexpensive labour helps attract foreign business but Indian labour costs are not discernibly different from some other leading emerging markets such as China (see Annexes D and H).

81. The Indian business environment is the industry's main weakness. The over-burdened infrastructure lacks adequate investment and the country risk is perceived to be higher than in countries like China and the Czech Republic (neoIT, 2006). Fierce competition for the country's top talent has led to rapid salary inflation and high attrition rates. Indian culture also lends itself less well to serve far off markets than for example the Czech Republic and the Philippines with cultural proximity to the main export markets in Europe and the United States respectively.

Market characteristics

82. During the 1990s, India's compound annual growth rate (CAGR) for services exports was 17 percent – the highest growth rate among the world's top 15 services exporters (World Bank, 2004). According to Nasscom (2006), in the financial year ending March 2006, India exported BPS for US\$ 6.3 billion and ITS for US\$ 13.2 billion. Custom application development and application management were the two dominant service categories (see Table 1). MGI (2005a) estimates that India accounts for 72 percent of ITS originating from low-wage regions and as much as 88 percent of such imports in the UK.

³⁰ Based on equity value, TCS, Infosys Technologies and Wipro Technologies were ranked on fourth, fifth and sixth place among global ITS companies (JP Morgan, 2006).

The industry is strongly dependent on foreign markets: the domestic market for BPS and ITS was worth around US\$ 5.2 billion, or 21 percent of the total supply.³¹

83. In terms of export markets, the United States is the single largest destination for Indian BPS and ITS: it captures two-thirds of exports and this share has remained stable over time. The UK is the second largest client country and absorbs 14 percent of Indian BPS and ITS exports (see Figure 4). The private sector in the UK sources marginally more BPS and ITS from India than the private sector in the United States if account is taken of the relative sizes of their economies. Indian companies have targeted other overseas markets for many years but these investments have generated limited returns. Japan and Germany are the third and fourth biggest export markets but none of them business exceeding US\$ 500 million. In total, 84.3 percent of Indian BPS and ITS exports were captured by English-speaking countries in the year ending March 2005.³² This figure would most likely be higher if American and British companies operating from other non-Anglophone countries were included.

Table 1. Indian ITS exports (US\$ bn)		Figure 4. Indian BPS & ITS exports by country of destination,³¹ year ending March 2005	
SERVICE CATEGORIES	FY 2006E	<p>Source: NASSCOM (2006)</p>	
Project-oriented engagements	7.39		
Custom application development	6.60		
IT consulting	0.33		
Systems integration	0.26		
Network consulting & integration	0.20		
Outsourcing engagements	4.36		
Application management	3.56		
IS outsourcing	0.79		
Support and training	1.45		
TOTAL	13.20		

84. The four largest Indian ITS companies – *TCS*, *Infosys*, *Wipro* and *Satyam* – had export revenues exceeding US\$ 1 billion in the year ending March 2006. The top five companies generated 46 percent of Indian ITS exports and 4-5 percent of BPS exports.³³ Another ten home-grown companies supply one-fourth of ITS exports and 4-5 percent of BPS. The thirty largest captive units of foreign multinationals supply 15 percent of ITS exports and the 150 largest captive units make up 50 percent of the Indian BPS market. This implies that India works predominantly as a centre for international outsourcing for ITS and both as a centre for international insourcing and international outsourcing in the BPS sector.

85. The Indian-owned BPS and ITS companies are increasingly establishing supply capacity in locations outside India, for e.g. through cross-border acquisitions, acquisitions of IT departments of clients and through greenfield investments. While Indian companies are going global, moving into both emerging

³¹ In addition to BPS and ITS, Indian companies exported an estimated US\$ 3.9 billion worth of engineering services, R&D services and software products.

³² That is Australia, Canada, Singapore, UK and the United States.

³³ www.nasscom.in/upload/5216/Indian_IT_Industry_Factsheet_2006.pdf.

markets and OECD markets, more and more OECD-based ICT multinationals are growing their presence in India. Annex L presents estimates of the workforces of leading ITS multinationals. In 2005, approximately 11 percent of the combined workforce of foreign multinationals presented in the annex was based in India. According to Nasscom (2006), this share is growing and expected to reach 14 percent by 2007. Some companies, like Accenture and IBM Services, have roughly one fifth of their workforces in India. Other companies like Cap Gemini and EDS have relatively few Indian employees.

86. Total employment in the export-oriented Indian BPS and ITS sectors was estimated at 0.8 million in the fiscal year ending March 2006. The workforce was split equally between the BPS sector and the ITS sector. A total of 1.3 million workers were employed in the Indian BPS and ITS sectors (for both domestic and foreign supply) and the sectors serving foreign markets with software products, R&D and engineering services. These combined sectors sustain an estimated 3 million jobs through indirect and induced employment (Nasscom, 2006). The former kind of employment is projected from expenditure on telecommunications, power, construction, facility management, IT, transportation, catering and other services. The latter kind of employment is driven by consumption of employees on food, clothing, utilities, recreation, health and other services.

Box 5. The global delivery model for IT services

The global delivery model (GDM) for IT services makes use of a combination of cross-border supply and temporary labour migration and was pioneered by Indian companies in the 1980s and 1990s. During the early years, before international fibre networks and the Internet were common place, documents and audiotapes were flown to India for digitisation and transcription. Basic programming work was also conducted for foreign multinationals. With time, Indian companies started sending IT specialists to their clients' premises for software programming work. This practice reached a peak in the lead up to year 2000 when demand for IT professionals exceeded supply in many OECD countries.

The rapid growth in ICT networks, reductions in communication costs, and technological progress made it possible to keep an increasing number of IT professionals back in India (offshore) working with the Indian team at the client site (onsite). The Indian professionals at the client site defined the project requirements, coordinated work, installed software, trained client staff and provided rapid-reaction maintenance services while team members in India provided technology tasks such as technical and database design, programming, testing, documentation and long-term maintenance services. This business model was economically compelling due to the labour cost arbitrage between IT professionals in the client country and those working in India. It was also a highly challenging process to manage that only the Indians came to fully master among the emerging markets players.

Over time, the need to keep a sizeable Indian team at the client site has been reduced. Between 2000 and 2005, the industry-wide average proportion of onsite work dropped from 67 percent to 42 percent. The size of the ratio of offshore/onsite work component is directly proportionate to savings of labour costs but the same also holds for the complexity of managing the project. Hence the optimal offshore/onsite ratio varies from project to project.

The GDM has grown increasingly complex and sophisticated with time. Today large Indian companies break pieces of work into logical components and distribute them to locations where they can be most cost-effectively performed. For example, a client engaging an Indian company in London may interact with the Indian company's sales team, which is permanently based in London, and during the project life cycle host a team of senior Indian IT specialists that coordinate and implement different IT components provided from Bangalore, Jaipur and Budapest. The Indian company may then provide maintenance services from its development centres in Belfast and Budapest and technical telephone support from Bangalore.

Source: OECD (2006), Kumra and Sinha (2003), Nasscom (2006) and www.infosys.com.

Challenges to India's BPS and ITS sectors in supplying international markets

87. The Indian BPS and ITS sectors benefit from a strong industry association in Nasscom. It has helped enhance transparency in the industry; promote industry standards, best practises and foreign direct investment; and it has been particularly successful at selling the industry abroad. Nasscom (2006) has identified three pillars where the industry faces significant challenges: cyber security (piracy, privacy, data protection and IPR), human resources, and infrastructure (in particular airports, mass transport systems, roads and electricity).

88. In general, companies operating in India are also subject to excessive bureaucracy and regulations. The country scores poorly in several of the indicators provided by the World Bank's benchmarking exercise *Doing Business* (see Annex C). These include in particular indicators for starting a business (lengthy and tedious), closing a business (lengthy and with low recovery rates), taxation (highest tax rate) and labour market rigidity. Enforcing a contract is a nightmare: it takes on average some 1,420 days, one of the world's worst records. As a result, legal contracts are signed in client countries and covered by the client country's jurisprudence.

89. To the benefit of the BPS and ITS sectors, the business environment is significantly improved in the Indian Software Technology Parks (STP) that were introduced in the early 1990s, and which is where export-oriented companies operate. The STPs have the same function as export processing zones. They provide tax exemptions, bridge gaps related to infrastructure, and offer a more conducive business environment. For foreign multinationals, most of the administrative burden is drastically cut in the STPs and many of the remaining issues can be solved by hiring external consulting companies.

90. The World Bank (2004) argues that India must address two critical challenges in order to sustain the dynamism of its service sector: externally, the problem of actual and potential protectionism; and domestically, the persistence of restrictions on trade and investment as well as weaknesses in its regulatory framework. To address the former problem, India will need to secure access to foreign markets. However, the most pressing challenges facing the BPS and ITS sectors companies today relate to supply side constraints. The following section reviews the concerns addressed by Indian companies and foreign multinationals with substantial operations in India.

Supply side constraints

Recruitment and retention

91. Most BPS and ITS companies in India struggle with recruitment and retention of professionals. The problem is not the number of graduates produced every year but rather their quality. While the share of graduates that are adequately trained for work in the export-oriented BPS and ITS sectors is higher than in a country like China, the relative size of the combined BPS and ITS workforces (around 0.8 million in March 2006) and the high growth of the industry have increased HR activities. Although there is no shortage of young professionals looking for employment, investment in screening and training is substantial and keeps rising in line with the high number of graduates that are recruited. Foreign multinationals tend to tackle these issues by paying a significant wage premium compared to Indian companies.

92. Retention is another challenge since most ITS talent is concentrated in centres such as Bangalore, Chennai, Delhi, Hyderabad and Mumbai. Staff attrition rates in the BPS sector may be lower than in most OECD countries, especially for voice-based services, but frequent job hopping reduces BPS companies' productivity and tends to fuel salary inflation. Dange et al (2005) estimates that every 5 percent of employee attrition reduces gross margins by up to 1.5 percent. However, India has an advantage compared

to the other countries studies in this paper since its BPS and ITS sectors pioneered the offshoring business and have the broadest and deepest pool of project managers and senior managers.

*Restrictions on temporary movement of ITS personnel*³⁴

93. The global delivery model (GDM), used by most Indian companies to export ITS, is dependent on international transfers of senior personnel between home and foreign client offices (see Box 5). On average, approximately one-third of operational manpower in a typical Indian ITS company is situated at the client site throughout a project life cycle. But the allocation of personnel varies from company to company, project to project, and throughout the project life cycle. Many medium and large Indian companies have permanent staff employed in client country subsidiaries. These professionals typically manage client interaction, in particular related to sales and marketing activities, but some of the largest companies, like Infosys Technologies and TCS, maintain a growing number of operational staff as well. However, most operations such as software development are still carried out by professionals based in India or other emerging markets, including China, Eastern Europe and the Philippines.

94. The manpower located at client site has gradually dropped from more than two-thirds in the mid-1990s to one-third today. This ratio of work at client site is likely to continue to edge downwards due to technological improvements and maturing GDMs. Yet there is a limit to the amount of work that can be carried out offshore: the economics of international outsourcing lies in maximising the amount of work carried out in cost-effective locations; and face-to-face client interaction is still paramount to achieve operational efficiency. The GDM employed by Indian companies will continue to be dependent on international transfers of managers and IT professionals in the foreseeable future.

95. The administrative process related to documentation for business visits to client countries can be a challenge for Indian ITS companies. Some of the issues related to administration and documentation are removed with time as trust is built in new client countries and authorities realise the value that visiting professionals provide. American and British authorities have long experience of handling Indian visa and work permit applications but this does not hold for many other OECD countries. There has been some improvement in the visa and work permit administration and there is scope for further improvement.

96. Rules concerning business visas and work permits are issues of national sovereignty. Each country designs the requirements and administrative procedure deemed necessary to provide business visas and work permits to foreign citizens consistent with national objectives. The following section presents some frequently raised concerns in this area in the Indian ITS sector. In general, while there are direct costs associated with the documentation and application process for movement of personnel, the concerns raised relate more often to the time and uncertainty involved. The direct costs are regarded as an additional overhead while time and uncertainty cause large indirect costs or even break deals.

Business visas and work permit requirements

97. The process of obtaining a **business visa** is relatively straightforward in most of India's export markets. However, the discrepancy between countries can be significant: the process of obtaining a business visa can take anything from one to ten working days in India. Some companies report that they frequently obtain business visas with shorter valid times than they apply for. This adds complexity and uncertainty since companies may have to pay cancelling and rebooking fees for air tickets and hotels, and reschedule project plans and client meetings, etc. The visa holder may also need to return to India only to go through the application process again before finalising the business with the client.

³⁴ OECD has published a number of studies on temporary movement of service providers. See e.g. OECD (2003a; 2003b; 2004b).

98. The administrative process for *work permits* is more stringent than for business visas. Some countries make use of quota systems to control and manage the number of work permits that can be issued each year. Work permits are usually issued for visitors that do billable work or stay for more than three months. An advantage of the application process for work permits compared to the process for business visas is that there is less discretion in the administrative process and there are seldom issues concerning the duration of stay.

99. The current application procedure for work permits leaves the decision to the discretion of the official handling the application. In many countries, applicants need to submit documents in original copies, schedule an interview for which there may be 45-120 days of waiting time, and then convince the official during the interview that he/she has no intention to migrate on a permanent basis or overstay the approved duration of stay. This recurring issue is due to the fact that many countries do not differentiate the handling of applications for permanent migration and temporary movement of natural persons. The applicant who presents the requested documentation may also be asked to provide additional documentation at a later stage to verify the obligatory documentation. This process may involve rounds of translation and legalisation of documents.

100. For example, some records such as birth certificates and educational diplomas first need to be legalised by the local state government. The legalised documents are then translated to the language of the country for which the application is due before the translated version of the legalised document in turn may need to be legalised. For certain documents, the procedure can involve up to three levels of legalisation and visits to the applicant's hometown, the local state authority and government ministry in New Delhi. In some countries, Indian ITS professionals go through a process that can take more than six months in order to obtain a work permit. In some cases the waiting time can be 8-10 months. The processing time makes it impossible to undertake certain projects and may not only result in lost business opportunities but also damage client relations.

101. The administrative process for issuing work permits is less of a concern for Indian professionals working for foreign subsidiaries than for home-grown companies. Many foreign subsidiaries are product development centres and the employees of these centres seldom need to interact directly with clients or work abroad. Employees who still need a work permit can normally move as intra-corporate transferees. The administrative process for such movement is relatively efficient and subject to few restrictions. The situation is different for employees of Indian-owned companies. Some of the largest Indian companies have subsidiaries with local employees in their main client countries and this generally facilitates the work permit process since employees can move as intra-corporate transferees. However, the great majority of Indian companies do not have the financial strength or the business model to establish operational units in client countries and they depend on the effectiveness of client country embassies and consulates.

102. Work permits may come with regulations concerning minimum wage levels or wage parity requirements. While these occasionally inflate the final client bill, wage regulations seldom have any real effect since most professionals sent to work abroad have reached a seniority and wage level that exceed these requirements. More burdensome is the additional layer of administrative work needed to prove that the company comply with all the rules. A fair, predictable, transparent and streamlined process for business visa and work permit applications would benefit both the client and the supplier.

103. Indian IT companies have developed sophisticated mechanisms to minimise potential disturbances to their operations: large companies have dedicated departments which handle travel logistics and applications for business visas and work permits. Each project leader may be in charge of the visa planning for the professionals in his/her project. Most companies also employ professional consulting companies to help with translation, legalisation and temporary migration issues. Long-term client relations facilitate this planning process and increase predictability.

104. There are three principal ways which Indian companies can reduce their dependence on work permits in the future. One way is to establish development centres in client countries (see OECD (2006b)). This approach reduces the need for international movement of employees and those that move can apply for intra-corporate work permits. The second way is to maximise the amount of work that is carried out in India, e.g. by partnering with client country companies or by bringing the client over to India for knowledge transfers.

105. Another increasingly common approach among the larger Indian ITS companies is to establish development centres in countries within close proximity (near-shore) to client countries. These countries offer higher cost environments than in India but lower cost environments than in client countries. Central Europe, and in particular Hungary and the Czech Republic, are developing into service centres for Continental Europe; Mexican and Canadian companies service the U.S. market, francophone African countries are used as bases to service the French market; and development centres in China provide services to Japan. The near-shoring centres help to overcome language and cultural barriers as well as some of the restrictions to international movement of professionals, in particular in Europe. Data privacy and security regulations can also be easier managed within the EU.

106. While “near-shoring” may facilitate the movement of professionals to client countries, there are often serious restrictions to movement between India and the proximate markets that the companies invest in. Indian IT companies are generally well received and supported in the new emerging markets in which they invest but it takes time to remove long-standing south-south restrictions which in many cases are more stringent than those for north-south trade. These are often more challenging to overcome than those between India and OECD markets.

*Restrictions on movement of information*³⁵

107. Data privacy and security concerns are related to the risk of: a) data being lost, and; b) data being accessed by external parties or misused by the company processing the information. While IT security can be guaranteed to some extent with technology, data privacy is people-driven and corporate procedures and ethics are of uttermost importance. Indian companies invest in data security systems and back-up equipment to reduce the former type of risk.

108. Data privacy is mainly a concern for BPS companies that transfer and/or process large quantities of personal information about other companies’ clients or employees. These transfers may include sensitive data such as financial, medical, social security and purchasing histories. Regulations on data privacy are imposed on companies located within the OECD area and these companies in turn require companies to whom they outsource to fulfil criteria which normally go beyond legal requirements. Improper handling of information has in the past resulted in public relations scandals for companies whose customers or employees have been affected. Both clients that outsource work and the companies providing the services have much to lose if there is a breach in data confidentiality.

109. Restrictions to the movement of information are an area where many companies fear future legislation could erect barriers to mode 1/2 trade.³⁶ To counteract data handling misuse, Nasscom is working together with the Indian government to draft an Information Technology Act which will set minimum industry requirements for data privacy and establish a penal code for companies or individuals

³⁵ See OECD (2006b) for a more extensive overview of data security and privacy issues.

³⁶ As a precaution against potential protectionism, more than 300 Indian BPS and ITS companies have established subsidiaries in Singapore where they would be able to route data in case India were to be targeted with trade-restricting legislation (Aron, 2005).

breaching the rules. So far there have been few known incidents of data theft in India and by establishing and enforcing strict data privacy standards, the industry hopes future issues will be kept to a minimum.

110. Indian BPS and ITS companies sign non-disclosure agreements with their clients and a number of mechanisms are established to protect data. These include dedicated offshore centres where e.g.:

- only project staff is allowed;
- the client's infrastructure and IT system are replicated;
- all types of data transfers are encrypted;
- project staff are prohibited from carrying any devices that can store information;
- project staff are prohibited from interacting with project staff working for competing clients;
- project staff are kept under video surveillance

111. There is also a multitude of technical solutions which eliminate the need to physically transfer data. This includes IT systems which allow offshore project staff direct online access to the data in the client country. Operations may also be carried out on dummy data and then applied on the original data at client site. As long as data privacy regulations hold for companies irrespective of the country in which they are headquartered, data privacy and security regulations are not considered an issue.

112. Indian companies have established processes to handle data privacy and security because they were often a requirement to attract foreign clients in the first place. However, the issue of data privacy and security is still a concern for clients. Booz Allen Hamilton (2006) recently published a survey which showed that information security is one of the three most important factors for U.S. companies when they select an outsourcing partner. The survey also indicated that information security concerns were related to the lack of trust in legal and regulatory environments in developing countries.

113. Several U.S. laws require companies to maintain reasonable technical, physical and administrative safeguards but do not address the issue of international data transfers directly.³⁷ They rather *"impose obligations to maintain reasonable security, access controls and the like, which must be considered in any vendor relationship, domestic or off-shore..."* thus *"...assuming the vendor provides appropriate security and confidentiality, U.S. laws do not now limit a company's ability to select vendors in any other geography"* (Eisenhauer, 2005). The obligation for a U.S. company to comply with U.S. data privacy and security regulation exists no matter where the engaged service provider is located.

114. EU Directive 95/46/EC 'On the protection of individuals with regard to the processing of personal data and on the free movement of such data' took effect in 1998 and is a comprehensive data protection and privacy law. It covers most sectors and allows transfers of data if a set of conditions are fulfilled. In addition, in the banking sector in some European countries for example, there are regulations stating that neither is the international transfer of data nor the international online access to data allowed. In such cases, the global delivery model employed by Indian BPS companies is not workable unless they establish operational units in the country.

115. In conjunction with legislation, there are several types of standards and guidelines such as ISO 17799 (for best practices in information security), ISO 27001 (for information security management systems) and COBIT (Control Objectives for Business & Related Technology). Compliance with data

³⁷ These include e.g. the Gramm-Leach-Bliley Privacy and Safeguards Rules Act, the Health Insurance Portability and Accountability Act (HIPAA) and California Senate Bill 1386.

privacy, security legislation and guidelines is necessary but comes at a cost: Pai and Basu (2005) cite a TowerGroup study which estimates that the costs of “effective international outsourcing” increase by 3-5 percent in BPS and 7-9 percent in ITS for due diligence. Risk management increase the costs by another 3-5 percent in ITS and 8-10 percent in BPS.

THE PHILIPPINE BPS AND ITS SECTORS

116. The Philippines has several merits for international supply of services and is the second largest exporter of BPS and ITS among the countries studied in this paper. The labour cost arbitrage is significant, the infrastructure in Metro Manila where most companies locate is well developed and the telecommunications infrastructure is reliable and cost-effective. The voice-based and non-voice based BPS sectors attract graduates that are more highly qualified than their peers in most high-income countries. The country has historically been a protectorate of the United States and this has led to close cultural ties and a sizeable Philippine Diaspora in the United States. Communication skills, English proficiency and the neutral American-influenced Philippine accent are key attributes for serving U.S. clients. In addition, staff attrition rates in the service offshoring industry are low and certain cultural factors lend themselves particularly well to voice-based services, e.g. Philippine service workers are generally perceived to be customer-oriented with a natural ability to convey empathy.

117. International benchmarking exercises find the Philippines to be one of the most attractive locations for services offshoring (see Annexes F-H). A.T. Kearney’s Global Services Location Index for 2005 ranks the Philippines as the fourth most attractive country, with inexpensive labour and infrastructure, high cultural adaptability and low staff attrition. The country does less well in terms of maturity of the home-grown services industry, quality of education, protection of IPR and the country risk is higher than in many comparable emerging markets. High levels of corruption, security issues in the south of the country and political instability have a negative effect on the overall business environment. However, neoIT ranks the Philippines second only to India in terms of “offshore attractiveness” in the BPS sector and the country scores particularly well for the maturity of the local BPS sector and the availability and quality of talent (see Annex G). In the ITS sector, the country ranks lower (11th out of 40 countries) and the relative weaknesses in the ITS field are the same factors that make the country strong in the BPS field: industry maturity and the availability of talent are not as favourable as in many other comparable countries.

Market characteristics

118. The Philippine BPS industry has grown rapidly over the last five years and established itself as one of the premier emerging market providers of BPS. In 2005, the Philippine customer contact industry, which hardly existed only five years earlier, employed 112,000 workers and generated revenue of US\$ 1.6 billion (see Table 2). Revenue in the contact centre sector doubled every year between 2000 and 2004 (Locsin, 2006). In addition to customer contact services, the Philippines exports back-office services, software services and medical transcription services. In 2005, some 150,000 workers provided US\$ 2 billion worth of BPS mainly to foreign markets. An additional 12,000 workers provided US\$ 0.2 billion

worth of ITS exports. In total, four-fifths of BPS and ITS services were exported in 2004 and the great majority of these services were supplied by subsidiaries of foreign multinationals.³⁸

Table 2. Revenue and workforce data in the BPS and ITS sectors, 2004-2006E

	Revenue (US\$ mn)			Workforce		
	2004	2005	2006E	2004	2005	2006E
Customer contact	920	1,610	2,580	64,000	112,000	179,200
Back office	120	180	320	15,000	22,500	40,500
Software development (exports)	170	204	265	10,000	12,000	15,600
Medical transcription	42	70	150	4,000	5,500	13,800
Animation	39	54	71	3,000	4,500	6,800
Engineering design	17	26	39	2,000	2,800	4,200
Other data transcription	20	31	43	2,000	3,000	4,200
Digital content	2	6	11	200	500	1000
Legal transcription	2	3	5	300	450	700
Total	1,332	2,184	3,484	100,500	163,250	266,000

Source: Mapa (2006)

119. U.S. clients captured approximately 90 percent of Philippine BPS exports. Foreign client markets for ITS are more geographically dispersed with EU, Japan and United States as main export markets.³⁹ For call centres services, 87 percent of export revenue was derived from U.S. clients in Q3 2005 (Aquino, 2006). The Philippine customer contact industry is to a large extent made up of U.S.-based multinationals that provide call centre services from captive units. But a growing number of Philippine, Asian and European companies also use the Philippines as a base for call centre services. The country is heavily dependent on the Metro Manila area which supplies some 80 percent of exports. The Philippine government is working together with domestic industry associations to develop strategies to geographically diversify the supply capacity (more on this below).

120. Labour arbitrage aside, a main reason why a country like the Philippines is so successful at attracting contact centre work is that the BPS sector can attract highly qualified graduates for work that in the OECD-area is provided by low-skilled workers and characterised by low wages, low productivity and high staff attrition. For example in the United States, the average call centre agent stay with the employer for less than six months while in the Philippines, the average call centre agent stays for two years or more. Companies such as eTelecare Global Solutions continuously invest in training and retention and keep their Philippine call centre agents for much longer. Low staff attrition and high quality manpower are compelling factors that have led the world's multinational call centre companies to invest heavily in the country.⁴⁰

³⁸ This estimate is based on calculation by the OED Secretariat using data from Mapa (2006) and Aquino (2006).

³⁹ The information was obtained at meetings with industry associations.

⁴⁰ The Philippine BPS sector has penetrated as far as to the WTO in Geneva: WTO's online training modules are checked by Philippine teachers and assistants (Mapa, 2006).

121. The Philippines is also becoming an offshore centre for finance and accounting tasks associated with high levels of standardisation.⁴¹ Philippine national standards and practice adhered to the U.S.-based Generally Accepted Accounting Principles (GAAP) until January 1 2005, and since then to International Accounting Standards (IAS) (Locsin, 2006). About 100,000 students graduate every year in accounting, finance, management and other related subjects and the country produces 2,500-3,000 new certified accountants annually.

Box 6. International outsourcing offers new business opportunities

International outsourcing offers a growing number of feasible business opportunities due to labour cost arbitrage. These new business opportunities are seldom acknowledged and difficult to quantify but still part of the offshoring equation. For example, a large car manufacturer recently started to provide a GPS star positioning system for a monthly subscription fee. A Philippine call centre was hired to initiate an outbound calling campaign to contact new car owners with offers of the GPS deal. Old customers were also contacted and offered new services packages and information if they did not make use of the GPS service during the first three months of their subscription. Many companies consider outbound calling campaigns to be efficient tools to increase the life-time value of a customer. But they are often economically unviable to initiate from high-income countries. International outsourcing opens up a whole set of new innovative business models due to significant cost advantages.

The Role of the Philippine government in attracting foreign investment

122. The Philippine government and the Philippine Board of Investment (BOI) agency are generally perceived as supportive of the country's BPS and ITS sectors. The government has in the past initiated a number of projects to reduce barriers to investment and it is currently cooperating with the industry associations, including the Business Processing Association Philippines (BPA/P) and the Philippine Software Industry Association (PSIA), to improve education in areas that are key to the industry and increase industry standards in terms of data privacy and security.

123. Some early initiatives were aimed at attracting foreign direct investment. Chief among these was legislation allowing 100 percent ownership of BPS and ITS entities established by foreign companies in the Philippines. Another initiative was to lower the minimum office-space requirement imposed by the Philippine Economic Zone Authority (PEZA). PEZA was established in 1995 and initially required 25 hectares of dedicated space to create a special economic zone (SEZ)/industrial park. In 1999, the minimum space requirement for IT parks was reduced from 25 hectares to 15 hectares. In 2000, IT buildings benefiting from PEZA's policy were allowed if the available office area covered a minimum of 20,000 m². According to Locsin (2006), the minimum space requirement by PEZA is now 5,000 m².

124. Companies that locate in PEZA buildings benefit from a number of financial incentives and administrative support. The benefit packages include streamlined registration for incorporation, which has been reduced to three working days (the average numbers of days to setup a company in the Philippines was 48 days in 2005 – see Annex C). Companies can also enjoy 4 to 8 years of income tax holiday, unrestricted use of consigned equipment, deductions for labour expenses and training expenses (both up to 50 percent) and exemptions from wharfage dues. IT park developers also enjoy tax and duty exemptions on imported capital equipment and exemption from the 10-percent input VAT on allowable local purchase of goods and services (Locsin, 2006).

⁴¹ These services include general accounting and bookkeeping services, accounts maintenance, accounts receivable collection, invoice and accounts payable administration, claims processing, expense and revenue reporting, sales auditing, payroll services, asset management/accounting, financial analysis and auditing, inventory control and purchasing, and tax reporting.

125. The main priority is now to improve the quality of education. The current administration of President Gloria Macapagal-Arroyo reversed a decision by its predecessor to only promote the use of Filipino in schools. This decision was impairing the export-oriented BPS and ITS industry for which English proficiency is the strongest comparative advantage. The new initiatives include programmes to enhance teachers' English proficiency and communication skills and they are developing elective courses that may cater to students interested in a career in the BPS or ITS fields. The aim is also to improve the analytical skills of students and there are several industry-academic joint programmes to enhance the quality of IT professionals.

126. The BOI has commissioned two councils that in conjunction with the private sector are developing guidelines on the protection of data privacy and security. The objectives of these projects are to ensure minimum standards on data protection, to pre-empt accidents and counteract protectionism. The councils are cooperating with the Information Technology Association of America (ITAA) to address potential issues. The first council is developing voluntary guidelines for the industry to follow until the second council has produced and passed a legal bill on data protection (expected in 2007) (see Lipana and Cooper, 2005).

127. Another large-scale initiative is the investment in a 600 km long telecommunications corridor. Towns can be connected to this ICT backbone if they fulfil a number of criteria aimed at establishing a sustainable and business-friendly environment. The project has set a target of generating one million jobs by 2010. To achieve this goal the government estimates that it will need investment of US\$ 6-7 billion to upgrade the infrastructure. There are several objectives related to this geographic diversification. First, more regions in the Philippines will get access to the business opportunities of international sourcing and this should result in more even economic development. Second, it will limit future salary inflation and poaching of staff frequent in the Metro Manila area; and third, the ICT backbone will increase access to the labour pool in the country.

128. Some critics argue that the Philippine government should refrain from favouring one industry over another and rather focus its resources on improving the overall business climate in the Philippines. The BPS and ITS sectors are already some of the least affected by the regulatory and institutional inefficiencies prevalent in the country – see Annex C – and the high levels of corruption that is plaguing domestic business is not a big issue to export-oriented BPS and ITS companies. While some observers argue that the current incentive packages fail to benefit the many small domestic companies that can ill afford to locate in PEZA buildings, where rents are high, others (e.g. Beshouri and Farrell, 2005) argue that the Philippines would do best by investing its resources in improving infrastructure and education rather than offering tax breaks to multinationals. The same argument would hold for China and India.

129. In general, the environment in which the industry operates is generally perceived as conducive to do business and the action taken by the Philippine government to reduce investment barriers and administrative red tape has helped the industry flourish.

Box 7. SPi – a home-grown success story

Founded in the Philippines in 1980 and the first publicly listed Philippine IT company, SPi (previously SPI Technologies) is arguably the Philippines' most successful home-grown BPS company. Its 11,000 employees – 4,500 in voice-based BPS and 6,500 in non-voice based BPS – in Asia, United States and Europe provide a broad portfolio of business process solutions related to content and data requirements in the publishing, legal, healthcare, content management, and transaction processing industries. SPi's main services offerings cover digital content conversion (transferring data from paper to electronic databases), litigation support, journal and book production (typesetting, copy-editing, illustration scanning and page formatting services), medical transcription, call centre (including inbound, outbound, sales and customer care applications) and software maintenance and development.

SPi has established a 1,000 strong workforce in Coimbatore, Pondicherry, Kolkata, New Delhi and Chennai in India and plans to continue to expand its Indian presence: e.g. it recently acquired Indian KGISTL's medical transcription unit serving the U.S. healthcare industry. The company also has services centres in Vietnam and China and in April 2005, the company announced plans to invest US\$ 50 million to extend its services capabilities in the Philippines and the United States. Geographic differentiation is a significant advantage since work can be located to where it makes most financial sense. For example in the past SPi had a 1,500 strong workforce in the Philippines doing basic data entry work. Today virtually all those functions have migrated to places like Vietnam and China.

Most Philippine BPS companies are sub-contractors to U.S.-based companies and lack sales and marketing organisations in client countries. SPi has established its own sales and marketing channels in the United States and it has been particularly successful at building in-house capabilities which has made the company less sensitive to external price pressure. Compared to many other Philippine third party BPS providers, SPi has gotten the business model right and developed a mature, quality conscious organisation with high visibility abroad.

Source: Huang (2005) and www.spitech.com.

Challenges to the Philippine BPS and ITS sectors in supplying international markets

130. The Philippine BPS and ITS sectors are dominated by captive units, or cost-covering subsidiaries, of foreign multinationals. The BPS sector is young but has already developed into a US\$ 2 billion industry and a destination of choice for voice-based BPS to English-speaking markets. Some home-grown companies – like SPi and eTelecare Global Solutions – have grown into internationally recognised multinationals in the BPS field. The ITS sector was founded in the 1980s and has yet to develop any significant export capabilities. As in the Czech Republic, the Philippine ITS sector could potentially develop expertise in certain niche markets but is not likely to become a sizeable provider to foreign markets in the foreseeable future.

131. Arguably the main reason why the BPS sector has thrived – next to the comparative advantages mentioned above – is the relative ease with which Philippine companies can supply services to the United States. The Philippine government has provided incentives and facilitated market entry but refrained from interfering in the industry. Most home-grown BPS and ITS companies belong to the SME category and face challenges unrelated to domestic or foreign regulations. The challenges are rather related to recruitment and retention of staff, developing mature and sustainable business models, and convincing foreign clients that the risks of political instability is unlikely to affect business. Country risk has a negative impact on business and political stability and sustained order are paramount to the BPS sector, which provides real-time services all year round.

132. It is only during the last few years that the BPS and ITS sectors have orchestrated an effort to market themselves abroad. The foreign multinationals that make up much of the sector have no incentives to sell the Philippines as a location for outsourced BPS and ITS. However, the establishment of the umbrella organisation BPA/P, which covers six other industry-specific associations, and its cooperation

with the BOI under the Department of Trade and Industry (DTI) is already raising the industry's visibility. This is necessary since few Philippine companies have sales and marketing channels abroad: most companies work with foreign partners working on commission, which is seldom a viable business model.

Supply-side constraints

Recruitment and retention

133. The BPS and ITS sectors are people-driven. As such, the hunt for the best available talent is constantly top priority for companies and the main challenge in daily work. According to BPA/P, a shortage of suitable labour is the single most pressing issue facing the Philippine BPS and ITS sectors. The country produces some 70,000 graduates annually with computer-related degrees but only 12,000 professionals in total worked in the export-oriented ITS sector in 2005 (Locsin, 2006). One reason why the ITS industry has failed to take off is the relatively modest quality of Philippine students in mathematics and science (Rodolfo, 2005). Several IT companies believe the Philippine government needs to set minimum quality standards in higher technical education. There is otherwise a risk that students who invest in IT-related education will face unemployment or be underemployed in adjacent low-value sectors.

134. Another reason why the ITS sector has struggled is that many software professionals with 4-5 years of work experience leave the Philippines to work abroad and few tend to return. This limits the domestic supply of professionals with high-level technical expertise and managerial competence. The relative youth of the industry has also led to a scarcity of experienced managers with sector-specific expertise. The captive units of foreign multinationals are best situated to capture the domain expertise and middle management talent that stay in the Philippines. While barriers to enter the ITS market are relatively low, the actual costs and expertise required to serve foreign markets are high.

135. The quality certifications (e.g. ISO, SEI CMM and SEI CMMi) that ITS companies can obtain to improve the quality and maturity of their work and use to market their quality services work both for and against the Philippine ITS sector. Today, large clients normally demand these types of certification to evaluate a company's process maturity. However, these quality certificates are costly and time-consuming to obtain and most Philippine companies have ignored this important marketing tool. The situation is similar to the one in the Czech industry. Some executives note that as the market for internationally outsourced ITS matures, entry barriers pile up in the form of more stringent data privacy and security requirements, and higher demand for process quality certification, scalability and investment in training, etc. But these entry barriers are industry-imposed and a result of increasing international competition.

136. The supply-side constraints in the expanding BPS sector have led to strong salary inflation for call centre workers. Philippine customer contact centres target a thin slice of available talent since most graduates are unsuited for customer interaction requiring a high-level of language proficiency and communication skills. As a result, the starting salary for a call centre worker is higher than the starting salary for a medical doctor, accountant or software programmer. In 2005, the base salary for English speaking call centre workers was 14-16,000 pesos/month with additional supplements for night-shift and performance-based bonuses. Contact centre workers with a second language like Japanese or Spanish can obtain twice the base salary of an English-speaking call centre worker. One industry executive provided the following estimates for young professionals' monthly starting salaries:

- Software developer in domestic industry: 12,000 pesos;
- Software developer in foreign multinational: 18,000 pesos;
- English-speaking call centre agent: 14-16,000 pesos + performance-based bonus;
- Japanese or Spanish-speaking call centre agent: 20-25,000 pesos + performance-based bonus

137. The salary inflation has made contact centre work an attractive first job for many graduates: or, to cite an executive with many years of experience in both the Indian and Philippine call centre sector: “...*the call centre job is today a low-level yuppie kind of thing in Asia. It’s a good job to take home 20,000 pesos/month, it is impressive.*” A base salary of 15,000 pesos is just below US\$ 300 and with added incentive programmes, rights allowance and a 13th month of salary in December, the total pay is high compared to other professions. But the rapid growth of the industry is creating recruitment problems. Five years ago, to recruit one qualified BPS worker, a Philippine company needed to screen around 25-30 people. To recruit a person today, the same company may need to interview 60-80 applicants. A common worry is that limited English proficiency will restrict the industry’s growth potential and increase investments in screening and training. In a survey conducted by O2P and BPA/P (2006), enhancing English proficiency is the area, after improving the political situation and the country’s external image, where the Philippine government can aid the industry most.⁴²

138. SMEs face the toughest challenges. Many of the small BPS companies suffer from irregular revenue flows and rely on workers with short-term project-based contracts. This approach may be one of the few viable ways to tackle a volatile business environment and Philippine labour laws become stringent when a worker has been employed for more than six months. But short-term employment does not only raise job uncertainty and staff attrition, it also reduces the incentives for companies to invest in their employees and develop in-house expertise. The issue is aggravated since it takes considerable time to reach adequate productivity levels that are needed to cultivate long-term business relations.

139. The export-oriented software sector is small and relatively immature but growth may pick up if the government manages to improve teaching and upgrade the technical curriculum in schools. The private sector has started to assist in enhancing the skills of IT graduates by providing teaching material and training teachers. BPA/P is also lobbying the government to increase the communication and language proficiency of students and teachers.

Regulatory challenges

140. While there is much room to improve the domestic business environment, the BPS and ITS sectors are better off than most other industries in the Philippines. The World Bank’s doing business indicators (see Annex C) show the inefficient process of starting and closing businesses, the slow process of enforcing contracts and the weak protection of investors. However, the special policy that covers companies operating in PEZA-certified buildings help companies circumvent most challenges related to domestic regulations. The BPS and ITS sectors also face few challenges related to foreign regulations. In the past, new U.S. regulations have even given rise to entire new services industries (see Box 8). The few regulatory challenges that still exist are related to restrictions to movement of service workers and security of information.

⁴² While electricity provision is more stable than in for example India, Beshouri and Farell (2005) note that Philippine electricity prices are 43 percent higher than in India and 65 percent higher than in China.

Box 8. The Philippine medical transcription sector

The medical transcription sector in the Philippines is young, relatively small and the fastest growing business line in the Philippine BPS sector. It employed some 5,500 people in 2005 and many are working from home in family businesses. The sector was created following the enactment in the U.S. Congress in 1996 of the Health Insurance Portability and Accountability Act (HIPAA). This Act requires medical institutions to keep digital records of patients. It also requires the establishment of national standards for electronic health care transactions and its provisions address the security and privacy of health data. The hospitals and health clinics that outsource some of their business processes to a third party must ensure that the service provider has a framework in place to comply with HIPAA requirements.

The establishment of the medical transcription industry in the Philippine can be dated to year 2000 when an American company established a captive unit to provide transcription services. At its peak, the company employed 700 people but it was soon acquired by another U.S. company which decided to move all its activities to India. Facing unemployment, some of the workers started their own businesses to serve the U.S. market and these companies now make up most of the Philippine medical transcription sector.

Approximately 90 percent of the U.S. market for transcription services is captured by domestic companies but the U.S. labour pool has shrunk annually by a few percent. The job is low-paid and few consider it a real career in the United States. International sourcing has proven an attractive solution to American health clinics and India has captured approximately 10 percent of the U.S. market. The Philippine medical transcription industry currently has less than 1 percent of the U.S. market.

Medical transcription companies operate 24/7 whereas call centres operate mostly during night. Typically a company receives an audio record with dictation and a short note about a patient. It then transcribes and puts together a report including analysis within hours before sending it back to the client. Hospitals get the reports within 6-12 hours. There are two main concerns: labour supply and compliance with HIPAA data privacy and security requirements. The Medical Transcription Industry Association of the Philippines is currently working on establishing HIPAA compliance certification for the local industry to enhance transparency and standards.

Source: Bel Reyes of the Medical Transcription Industry Association of the Philippines (MTIAPI).

Restrictions on temporary movement of service professionals

141. The Philippine BPS and ITS sectors are mainly made up of foreign multinationals and these companies circulate few professionals between the Philippines and their home or client countries. Those professionals that are employed by foreign multinationals have few restrictions to movement since employees can obtain intra-corporate work permits. In addition, most service workers are employed in the contact centre sector, which seldom circulates its employees. However, the challenges related to the movement of natural persons are more prevalent among some of the home-grown, export-oriented ITS companies. While these are few at present, those who face restrictions are subject to the same challenges as the Indian software professionals: quota limitations, documentation burden, and time and unpredictability issues related to the application process of business visas and work permits.

142. Most Philippine ITS companies have adopted a business model that is different from most Indian companies. Philippine companies usually partner with companies in client countries that do sales and marketing and take care of the onsite work component. Other companies choose to bring their clients to the Philippines to minimise costs and reduce some of the hassle with visas and work permits. While some companies report that they do turn down occasional business opportunities because of the lead time to obtain visas and work permits, concerns related to the limited size of Philippine companies are more frequently raised.

143. Several Indian BPS and ITS companies have negotiated with the Philippine authorities about establishing development centres in the Philippines and some of the larger players have established subsidiaries in Manila. There is a constraint, however, to Indian FDI because Indian citizens are categorised as a “restricted nationality” by Philippine law. This regulation provides a very small quota for the number of Indians allowed to visit the Philippines each year. Restrictions to South-South trade are often significant but tend to receive scant attention. Several nationalities are restricted from entering the Philippines under this policy.

Restrictions on movement of information

144. The regulations related to data privacy and security that affect the Philippine BPS and ITS sectors are the same as those affecting their Indian colleagues (and presented above). But the Philippine companies are more dependent on the U.S. market. Regulations do not only result in overhead costs but can also provide significant business opportunities: e.g. the HIPAA law in the United States requires medical institutions to keep digital records of patients and this regulation initiated the medical transcription industry which is quickly expanding in India and the Philippines.

145. The Philippine companies interviewed for this study report that data privacy and security legislation has produced some useful industry standards: they may be costly to comply with but that is not an issue since they affect companies equally. Clients demand information security assurances that exceed those of national legislations and service providers comply in order to be in business.

MAIN FINDINGS AND CONCLUDING REMARKS

Market characteristics and trade

146. The country case studies of the BPS and ITS sectors in China, the Czech Republic, India and the Philippines illustrated how emerging markets are being integrated in the global services supply chains in OECD economies. In 2005, the combined export revenue of the four countries came to an estimated US\$ 8.7 billion for BPS and US\$ 14.5 billion for ITS. OECD economies captured most of these exports.⁴³ The amounts may seem modest compared to the four countries combined exports of merchandise trade (US\$ 948 billion) but the economic contribution of the BPS and ITS sectors in India and the Philippines has increased significantly.

147. India is leading the way among the emerging markets with its mature and internationally competitive ITS sector. The Indian ITS sector has managed to create a highly successful industry based on the global delivery model that has been continuously enhanced over the last decade. It has substantial exports to both North America and Europe but depends heavily on Anglophone markets. There are signs that China is becoming the offshore destination of choice for Japanese companies. However, it remains to be seen whether any emerging economy can come close to rival India in size in the future.

148. The market for internationally sourced BPS is young, fast growing and competition is more even between the four countries. India is the largest supplier but the Philippines has become a strong contender for services in English, in particular for voice-based services. All four countries are likely to continue to expand their export-oriented BPS sectors in the near future. Some trend-setting multinationals already use all four countries to deliver BPS to different geographies where they have a comparative advantage.

149. The following conclusions can be drawn from the country case studies:

- The BPS and ITS sectors in the four countries have different client focus: while only 10-15 percent of BPS and ITS supply is exported in China and the Czech Republic, almost 80 percent of Indian and Philippine BPS and ITS are delivered to clients abroad.
- Language and cultural proximity are decisive factors in international supply of BPS and ITS. From a trade perspective, the Chinese and Czech BPS and ITS sectors are mainly used as *nearshore* supply centres for companies in East Asia and Europe respectively. The Indian and Philippine BPS and ITS sectors are both *offshore* supply centres for more distant markets.
 - Czech export markets are based in the EU, including the UK and neighbouring Austria, Germany and Slovakia;
 - Chinese exports are to a large extent captured by Japan (around two-thirds of total). Other export markets include Korea, the United States and the Asia-Pacific region;

⁴³ The Indian financial year covers 1 April 2005 to 31 March 2006.

- Indian export markets are predominantly the United States (66 percent) and UK (14 percent). Other export markets include Japan, Singapore and Germany;
- Philippine exports are captured by the United States (90 percent). Other English-speaking countries make up much of the rest;
- Trade in BPS and ITS is dominated by OECD-based multinationals but home-grown companies in non-OECD economies are rising in prominence:
 - Czech BPS and ITS exports are mostly provided by foreign multinationals;
 - Philippine BPS and ITS exports are mainly provided by foreign multinationals. Home-grown companies are increasingly providing BPS and ITS services to foreign markets;
 - Chinese BPS and ITS exports are provided by both home-grown and foreign companies;
 - Indian BPS exports are provided equally by home-grown and foreign companies while home-grown companies provide two-thirds of Indian ITS exports;
- The four countries have developed different export-related capabilities in the BPS and ITS field:
 - The Czech Republic is mainly used as a centre for BPS and software application development;
 - China has developed capabilities at the opposite ends of the value chain: it is strong at low-end BPS and ITS work, such as data entry and testing services, while foreign multinationals increasingly use it as a base for high-end R&D services;
 - India is dominating the BPS field and pushing the boundaries for the type of services that can be traded through cross-border supply. From an offshoring point of view, it is a full service provider. In the ITS field, India is strong at software application development and application maintenance services. It is in the nascent stages of developing strengths in system integration and IT consulting;
 - The Philippines is presently strong in BPS supply and in particular voice-based services.

Trade-related and business-related challenges

150. The most pressing challenges in the export-oriented BPS and ITS sectors relate to preoccupations such as developing efficient operations, managing complexity in international client relationships, establishing marketing and sales channels abroad, etc. The industry is facing relatively few barriers related to regulations at home and in client countries. However, recruiting, training and retaining professionals are major challenges in the industry. BPS and ITS companies can generally overcome the administrative hurdles in local business environments thanks to special export-oriented zones where excessive red tape is removed and gaps in infrastructure are bridged. Yet heavy investment in such zones would be unnecessary if governments took action to improve the overall business environment and liberalised markets for key input services. Additional challenges relate to temporary movement of service workers in the ITS sector and data regulations in the BPS sector.

Recruitment and retention

- The four countries face considerable supply side constraints in their quest to provide BPS and ITS to international markets. The supply side constraints are most challenging in the ITS sector. The issue is less severe for foreign multinationals that pay a wage premium to recruit top talent. Work in the four countries' BPS and ITS sectors attract highly skilled workers. This is in sharp contrast

to some of the BPS work in OECD countries, in particular in the voice-based field, where work is poorly paid and attrition high.

- Recruitment and retention of *junior* personnel: although China, India and the Philippines produce large numbers of university graduates, few are suited to work in the industry and serve foreign clients. Most graduates have inadequate language skills, communication skills and business acumen for client interaction, and lack the necessary level of technical training. Yet the levels of remuneration entice many university students and graduates to look for opportunities in the industry. It takes significant investment in the recruitment process to identify the right workers. In the ITS sector, it also takes significant investment in training. Hence, staff retention is crucial given that new professionals become productive with experience. Staff attrition is high in the BPS sector and for many companies in the ITS sector as well.
- Recruitment and retention of *senior* personnel: the export-oriented BPS and ITS sectors have existed only for a few years in China, the Czech Republic and the Philippines. The industry has had little time to nurture project managers and senior managers with industry-specific experience. Those that are available work to a large extent for foreign multinationals. As a result, many companies recruit senior personnel from abroad and this practise comes at a high cost. The situation is extra challenging in China where the industry to a large extent relies on the returning Chinese Diaspora. The situation is less of a problem in India where the industry has had more time to build capacity. Strong demand has resulted in rapid salary inflation for experienced professionals.

Regulatory challenges

- Regulatory and administrative challenges in the domestic business environments of the studied countries are considerable except in the Czech Republic. The challenges affect both home-grown and foreign companies that operate in China, India and the Philippines. While domestic service markets are highly protected in the three Asian countries, the development of a strong domestic export-oriented industry is high on the agenda of governments. The negative effect of the local business environment on export-oriented BPS and ITS companies is greatly reduced in the environments that they operate: the software and technology parks/buildings that host the companies generally offer ready-to-use infrastructure in terms of office space, utility services and ICT services; streamlined business administration and financial incentives. Policies that target the investment climate in specific industries may be unfair to other industries in the economy. But their impact on the local BPS and ITS sectors studied in this paper has been positive.
- In the ITS sector, temporary movement of personnel between home country and client country can pose significant challenges in the business of international outsourcing. The issue is most pertinent for the Indian ITS sector which to a large extent is dependent on a global delivery model that sends professionals for longer visits to client premises. Unpredictable, slow and costly administrative procedures for business visas and work permits, and quota limitations for work permits have become serious issues for some companies.
- In the BPS sector, and to a lesser extent in the ITS sector, certain data privacy and security legislation can have a negative effect on international outsourcing. New regulations have also created entirely new business opportunities, as seen in the medical transcription sector. Data privacy and security regulations are not necessarily regarded as negative as long as they are non-discriminatory in nature. Technological solutions allow companies in most instances to comply with the rules and clients generally require their suppliers to live up to standards that are higher than existing legislation.

Table 3. Summary: Selected market indicators and trade profiles, 2005⁴⁴

	China	Czech Republic	India	The Philippines
Exports of ITS (US\$ bn)	1.0	0.06*	13.2	0.2
Exports of BPS (US\$ bn)	0.3	0.04*	6.3	2.0
Exports as share of total supply (%)	10-15	10	79	79*
Sourcing activities	International insourcing; small but growing share of international outsourcing	International insourcing	International insourcing & international outsourcing	International insourcing; small but growing share of international outsourcing
Focus of BPS and ITS sectors	Domestic and nearshore	Domestic and nearshore	Offshore	Offshore
Main export markets (% of total exports)	Japan: 60-70 Other Asia Pacific: 15	EU	USA: 66 UK: 14	USA: 90
Employment in BPS and ITS export sectors (mn)	0.1-0.2 ⁴⁵	..	0.38 in ITS ⁴⁶ 0.41 in BPS	0.01 in ITS 0.16 in BPS
Tier 1 cities (examples)	Beijing, Shanghai, Shenzhen	Prague	Bangalore, Hyderabad, Chennai, Mumbai, New Delhi	Metro Manila
Tier 2 cities (examples)	Dalian, Guangzhou Nanjing, Xian	Brno, Plzen	Gurgaon, Kolkata, Mangalore, NOIDA, Pune	Cebu, Clark, Davao
Dependency on temporary movement of service professionals (onsite work)	Low	Low	High	Low

* 2004.

⁴⁴ Some of the data presented in this table are best available estimates and are presented due to the lack of other comprehensive and authoritative data sources. The sources of the data are presented in the country chapters. For India, "2005" refers to the period 1 April 2005 – 31 March 2006.

⁴⁵ The combined domestic and export-oriented industry employed around 900,000 workers. Some US\$ 960 million of the country's US\$ 8.7 billion software development services market was exported. US\$ 320 million of BPS was exported. A rough estimate is that 0.1-0.2 million workers are employed in the sector.

⁴⁶ The figure is estimated from data presented by Nasscom (2006). The combined workforce in the export-oriented sectors of ITS, engineering and R&D, and software products was an estimated 0.51 million in March 2006. Revenue generated in the ITS sector made up 75 percent of total revenue in the combined sectors. 75 percent of 0.51 million is 0.38 million.

Additional thoughts

In the future, more and more BPS and ITS multinationals will do business where they do it best and where it makes most financial sense. This is likely to imply, among other things, that:

- The very great majority of service workers in the BPS and ITS sectors will continue to be based within close proximity of their clients;
- The supply of BPS and ITS will have a more international footprint:
 - OECD-based multinationals will boost their presence in emerging markets, which will allow them to tap into rapidly growing domestic markets for outsourced services and gain access to a global talent pool. International outsourcing will with time give rise to entire new service sectors due to the multitude of business models that become economically viable;
 - Leading BPS and ITS companies in emerging markets will move into OECD markets to establish local supply capacity when the limited markets for more easily “offshoreable” services get saturated. As a result, more and more workers in OECD countries will work for companies originating in non-OECD countries;
- Intensified competition for traded services will allow more companies to increase productivity through the procurement of better and cheaper services - which in turn will help stimulate growth in IT-intensive industries;
- The increasing integration of emerging markets in international supply chains will stimulate economic growth in these countries and endow them with home-grown IT expertise necessary to help bridge some of the productivity gaps with OECD markets;
- South-south trade is just starting to take off in the BPS and ITS sectors and will expand rapidly in the future.

International sourcing of ITS and some potential implications for labour markets

151. OECD (2005a) has previously identified the main adjustment challenges that OECD economies may face due to the integration of non-OECD economies in international supply chains. In particular it examined the prospective effect on EU and U.S. labour markets and concluded that the practice of international sourcing can be mutually beneficial for low-income and high-income countries alike but open markets are essential to reap the gains and to manage adjustment. Of equal importance is a well functioning labour market that facilitates labour adjustment resulting from trade liberalisation and rapid technology diffusion.

152. While trade in BPS and ITS is predominantly conducted between OECD countries, these services are increasingly traded between OECD and non-OECD countries.⁴⁷ Depending on overall growth in the service sectors in question, international sourcing could potentially result in a net job loss for some occupations or a slower pace of job expansion than would otherwise occur. OECD (2005a) concluded that adjustment pressure while real is likely to remain modest in OECD labour markets. There are several reasons for this:

⁴⁷ See OECD (2004a) for an extensive discussion.

1. Most BPS and ITS services will remain non-tradable since their provision requires face-to-face interaction, frequent communication or proximity to clients.
2. The various predictions of job losses resulting from international sourcing are minor in relation to the overall destruction and creation of jobs in labour markets.
3. International sourcing is a positive sum situation: many jobs are kept and created during the international sourcing process while efficiency gains are transferred to consumers in terms of lower prices or re-invested in new business opportunities.
4. The labour-cost arbitrage incentive is becoming less pronounced as low-income country service providers export increasingly sophisticated services at higher prices.

153. Much analytical work has been presented on the impact of offshoring in the BPS and ITS sectors in OECD economies. Some studies have tried to estimate the outer limits of total service jobs that could potentially face international competition.⁴⁸ These estimates indicate that the great majority of service jobs will remain unaffected by international competition. Depending on the assumptions on which the assessments rely, estimates have varied between 5 percent and 19 percent. However, what can possibly be supplied from a remote location is very different from what can be supplied with adequate service quality and with an economically compelling business model. Some services (or fragments of services) that can easily be identified, digitised and standardised may be traded in the future. But most work tasks do not match such a profile and it makes remote cross-border supply more complex, and hence more costly, to manage.

154. Some studies have tried to predict the number of jobs that is likely to be provided through cross-border supply in the future.⁴⁹ Other studies have tried to quantify the economic impact of international sourcing on a country level.⁵⁰ These quantification exercises have generally concluded that the initial worries that offshoring of services will have serious consequences for OECD labour markets are largely unfounded.⁵¹ Emerging markets will increase their share of world trade in BPS and ITS and the economic gains, on balance, can be significant in both importing and exporting countries. Many developing countries have realised the new business opportunities that this type of trade give rise to and some are pursuing a more active agenda of liberalising service markets. However, while international trade in BPS and ITS can bring significant gains to both sides of the transaction, it is likely to reduce the demand for certain job categories in OECD economies.

*The scope for labour market adjustment in the ITS sector*⁵²

155. Some of the most pressing issues for BPS and ITS companies that operate in emerging markets are related to supply-side constraints. The McKinsey Global Institute has presented a series of comprehensive studies that examine the supply and demand for labour in a number of service sectors (MGI, 2005a-b). They forecast that the annual growth rate for ITS spending in the 2003-2008 period will

⁴⁸ See e.g. Blinder (2005), van Welsum and Vickery (2005), Bardhan and Kroll (2003), ILO (2001) and World Bank (1995). See also the discussion presented by Bhagwati et al. (2004).

⁴⁹ See Engman (2005) for an overview. MGI (2005c)

⁵⁰ See e.g. Blanco et al. (2005), Mann (2003), MGI (2003, 2004), Evalueserve (2003, 2004), Deloitte Research (2003).

⁵¹ See e.g. WTO (2005), OECD (2005a), Bhagwati et al. (2004), Drezner (2004).

⁵² In 2005, ITS exports in China, the Czech Republic, India and the Philippines made up 60 percent of combined BPS and ITS exports.

be 4 percent in Western Europe, 5 percent in the United States, and 9 percent in the Asia Pacific region.⁵³ The figures imply that the combined demand for ITS in the main markets for these services will grow by some US\$ 20 billion annually. This is significantly more than the combined value of all ITS exports from China, the Czech Republic, India and the Philippines.

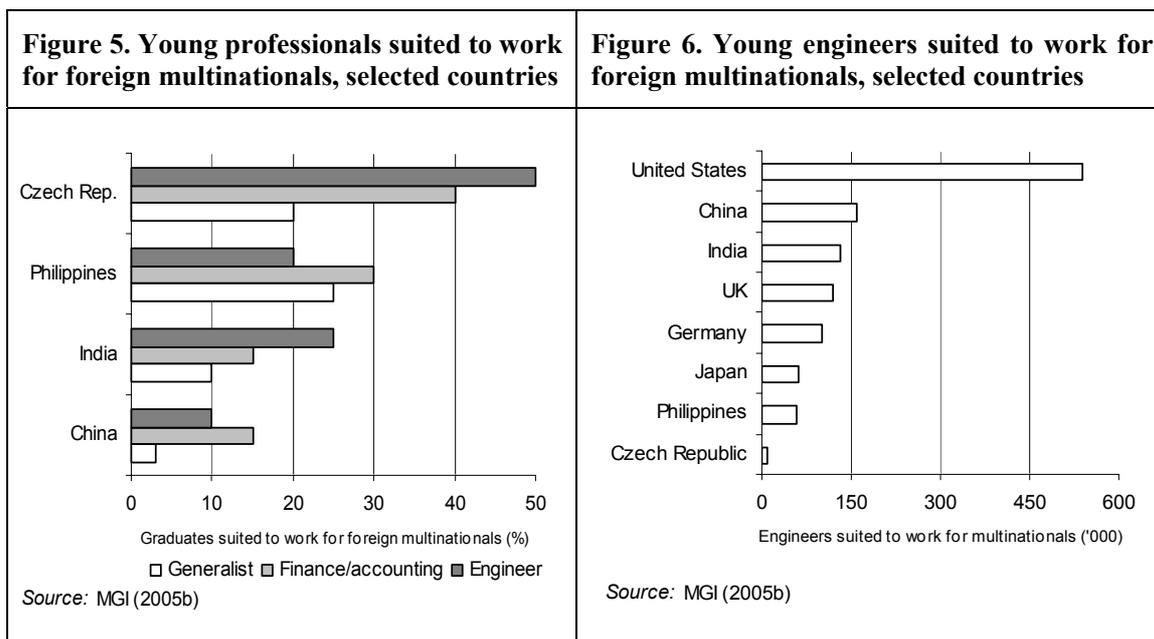
156. Competition from emerging markets is almost exclusively concentrated in the field of custom application development and application maintenance, and to a lesser extent in system integration. In 2006, an estimated 10 percent of demand for ITS employment in high-income countries was covered by low-cost countries. This share is expected to increase in the future but due to the expected rise in demand for ITS, annual ITS employment in high-income countries is expected to grow by 1 percent per year between 2003 and 2008.

157. While the pressure on overall ITS employment is likely to be modest, there may well be cost pressure for certain types of services, and shifts in demand for ITS job occupations, as OECD-based companies refocus their operations on higher value services.⁵⁴ In the United States, which is the largest importer of BPS and ITS from emerging markets, the share of high-value ITS occupations (system analysts, software engineers) have expanded while mid-value (software programmers, database/network administrators) and low-value ITS occupations (computer support specialists, programmer aides) have contracted (MGI, 2005a-b). This trend is in line with the growth in offshoring of low-value work to cost-effective countries in Asia.

158. The recruitment challenges in China, India and the Philippines stem from the fact that relatively few graduates have the set of skills to work for foreign multinationals or serve international markets. Figure 5, which is based on interviews with 83 human resource managers of multinationals, reveals that only one in ten Chinese engineers have the necessary profile for employment. A somewhat higher share of engineers is suitable for work in multinationals in India and the Philippines and more so in the Czech Republic. Both the Czech Republic and the Philippines have rather strong competence in finance and accounting. Figure 6 illustrates that the limited profiles of young professionals in China and India drastically reduce the available talent pools. Hence the large populations of countries like China and India do not commensurate with the number of service professionals that they can provide. Quantity is not the problem in these countries – quality is.

⁵³ According to their findings, the United States accounted for roughly 41 percent of worldwide demand of ITS, followed by 13 percent in Japan and 7 percent in Germany. Employment in the ITS sector accounted for 1.2 percent of non-agricultural employment in Western Europe, 1.3 percent in the United States, and 0.9 percent in Japan.

⁵⁴ Many OECD countries do not import BPS and ITS from the countries studied in this paper.



159. Forthcoming OECD (2006c) work will provide a comprehensive analysis of trade and labour market adjustment in the business services sector. It will analyse the interaction between trade, trade policy and technology in shaping employment patterns, labour turnover and relative wages. It will also analyse how trade and labour market policies can facilitate structural adjustment while reducing trade- and FDI-related adjustment costs.

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ANNEX A: INDICATIVE LIST OF INTERNATIONALLY SOURCED SERVICES

1. ITS: Information Technology Services (Computer and related services)	
Software development and implementation services, data processing and database services, IT support services, application development, testing & maintenance, business intelligence & data warehousing, content management, e-procurement and B2B marketplaces, enterprise security, package implementation, system integration, SCM, enterprise application integration, total infrastructure outsourcing, web services (Internet content preparation, etc.), web-hosting and application service providers (ASPs), requirements engineering.	
2. BPS: Business Process Services	
Customer interaction services	Sales support, membership management, claims, reservations for airlines and hotels, subscription renewal, order processing, warranty administration, customer services helpline, handling credit and billing problems, etc. telemarketing and marketing research services.
Back-office operations	Data entry and handling, data processing and database services, medical transcription, payment services, financial processing (financial information and data processing / handling), check credit/debit card processing, human resource processing services, payroll services, healthcare administration, warehousing, logistics & dispatch, inventory, supply chain services, direct & indirect procurement, ticketing, insurance claims adjudication, mortgage processing.
More independent professional or business services	Human resource services (hiring, benefit planning and payroll, etc.), finance & accounting services (including auditing & compliance, bookkeeping, taxation services, etc.), data analytics & mining, data/knowledge management, marketing services, product design and development.

Source: Adapted from Mattoo and Wunsch (2004). The list of activities is neither exhaustive nor are the categories mutually exclusive.

ANNEX B. LIST OF INTERVIEWS:

For the Chinese chapter (Sept. 2006):

Michael Chen from Dalian Software Park; Qian Chen, Leo Curtis, Cory M. Grenier, Annie Jiang, Jerome Ma and Jun Tang from Lenovo; Sheng Chen from Hewlett-Packard; John Chiang from DragonBridge; Chen Chong, Gu Changjiang, Han Shengzhi and Penny Peng from China Software Industry Association; Matthew Cule from M&Y Data Solutions; Walter Fang from Neusoft Group; Fu Jianqi and Xu Chaofeng from the Chinese Ministry of Information Industry; Ramalingam Hariharan from Nokia China Investment; Hong Gang from Gartner; Jacob Hsu from Symbio Group; Hui Zhang from Huawei Technologies; Jackson Lam from TCS China; Jingmei Li from Beyondsoft; Leon Liu and Xu Xing Feng from the Chinese Ministry of Commerce; T.W. Liu and John Peng from iSoftStone Information Service; Ralph Lofdahl from Ericsson China Communications; Jim Mai from Kingdee Software Technology; Jean-Marc Serayssol from Dell; Raghvendra Tripathi from Satyam Computer Systems; Chen Yue from BT Global Services; Max von Zedtwitz from Tsinghua University.

For the Czech chapter (July 2006):

Jiří Čermák from Baker & McKenzie; Chris Garlick from Garlick s.r.o.; Jana Herzová from Czech Trade Promotion Agency; Petr Kučera from Komix; Petr Mýtina from Ness Technologies; Petr Niedoba from CN Resources International; Ota Novotný from Prague University of Economics; Jan Pavelka from DCIT; Robert Pinkas from Grisoft; Jan Rancak from Czech Invest; Jaroslav Zahradnik from Centrum pro Outsourcing IT; Michal Zálešák from the Czech ICT Alliance;

For the Philippine chapter (Jan. 2006):

Manolo E. Aquino and Joel A. Layson from Summersault; Jeanette S. Carrillo from the Philippine Board of Investments; Arnel Galo S. Esquerra from ADEC Solutions; Harry Fozzard from Epixtar Corp.; Michael Alan Hamlin from Outsource2Philippines; Benedict C. Hernandez from eTelecare Global Solutions; Chang Huh from Asian Development Bank; Mitch L. Locsin from Business Processing Association Philippines; Damian Domingo O. Mapa from the Commission of Information and Communications Technology; Charina Quizon from Ambergris Solutions; Renato B. Quizon from Pointwest Technologies; Beau Rudd from Global Sky; Evelyn Suaco-Abat from eData Services Phils; Fermin Taruc from Philippine Software Industry Association; Lito T. Tayag from Accenture; Leland B. Verceles from Virtual Assistants Philippines; Lauro Vives, Gio Pojida and Cesar Tolentino from XMG

For the Indian chapter (Sept. 2005):

Balasubrahmanyam Juturi and Badree Komandur from Wipro; Rupa Chanda from Indian Institute of Management; Akash Chander from LogicaCMG; Avinash Chandrakar, Sanjay Jalona, Rajesh Khandelwal, Nitin Kulkarni, Deependra Moitra and Alok Ranjan Tripathy from Infosys; Mikael Gislén from Gislén Software; Praveen Kanipakam from Sharp; Niranjana Kalyandurg from Honeywell; Krishna Kumar from Hexaware; Rajesh Rao from Nature Soft; N R K Raman and Peter Yorke from I-flex Solutions; S Ranganathan and Swaminathan Krishnan from from Sasken; Dravida Seetharam from IBM; Gaurav Singh from National Association of Software and Service Companies; Brijesh Pazhayathodi from Reserve Bank of India; Sampath Kumar, Capt. Girish, Deepti Vijaya from TCS; Nikhil Tikekar from Ericsson; Navendu Yajnik from Patni Computer Systems

ANNEX C. REGULATORY AND INSTITUTIONAL EFFICIENCY

	China	Czech Republic	India	The Philippines	OECD
Starting a business					
Procedures (number)	13	10	11	11	6
Time (days)	35	24	35	48	17
Cost (% of income/capita)	9	9	74	19	5
Min. capital (% of income/ capita)	213	37	0	2	36
Employing workers					
Difficulty of hiring index	11	33	33	56	27
Rigidity of hours index	20	20	20	40	45
Difficulty of firing index	40	30	70	20	27
Rigidity of employment index	24	28	41	39	33
Hiring costs (% of salary)	44	35	17	9	21
Firing costs (weeks of wages)	91	22	56	91	31
Getting credit					
Legal rights index	2	6	5	3	6
Credit information index	4	5	3	3	5
Credit registry coverage (% adults)	10	4	0	0	8
Private bureau coverage (% adults)	0	51	6	5	61
Protecting investors					
Disclosure liability	10	2	7	1	6
Director liability index	1	5	4	2	5
Shareholder suits index	4	8	7	7	7
Investor protection index	5	5	6	3	6
Paying Taxes					
Payments (number)	44	14	59	59	15
Time (hours)	872	930	264	94	203
Total tax rate (% profit)	77	49	81	53	48
Enforcing contracts					
Procedures (number)	31	21	56	25	22
Time (days)	292	820	1,420	600	351
Cost (% of debt)	27	14	36	16	11
Closing a business					
Time (days)	2.4	9.2	10.0	5.7	1.4
Cost (% of estate)	22	15	9	38	7
Recovery rate (cents on the dollar)	32	19	13	4	74

Source: World Bank (2006) www.doingbusiness.org

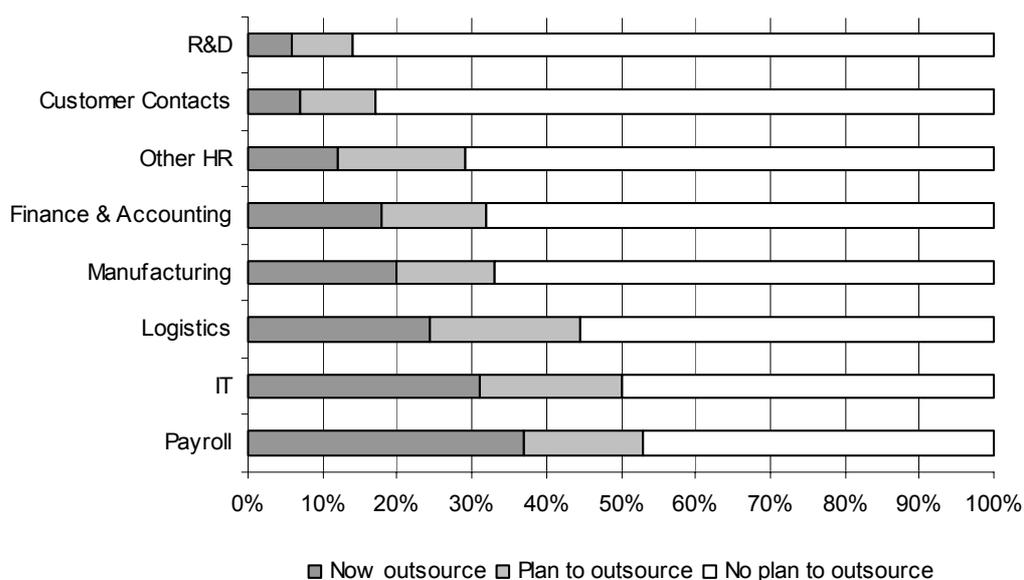
ANNEX D. WAGE INDICATORS FOR KNOWLEDGE WORKERS, 2005

	China	Czech Republic	India	The Philippines
Average annual ITO salaries (US\$)				
Entry level	5,700	12,000	5,700	7,300
Team Lead	9,600	19,500	9,400	11,900
Project manager	15,000	36,100	14,600	18,400
Average annual non-voice BPO salaries (US\$)				
Entry level	4,300	9,600	4,500	5,700
Team Lead	7,500	15,600	7,600	9,600
Project manager	11,700	28,800	11,800	14,900
Average annual voice BPO salaries (US\$)				
Entry level	4,100	9,100	4,300	5,500
Team Lead	7,100	14,600	7,200	9,200
Project manager	11,100	27,100	11,200	14,200

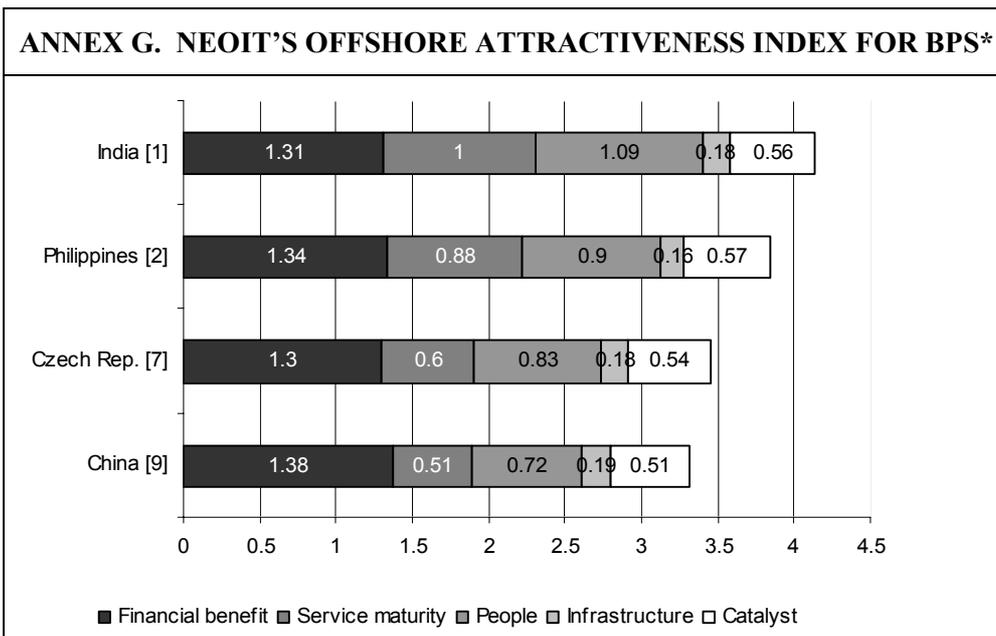
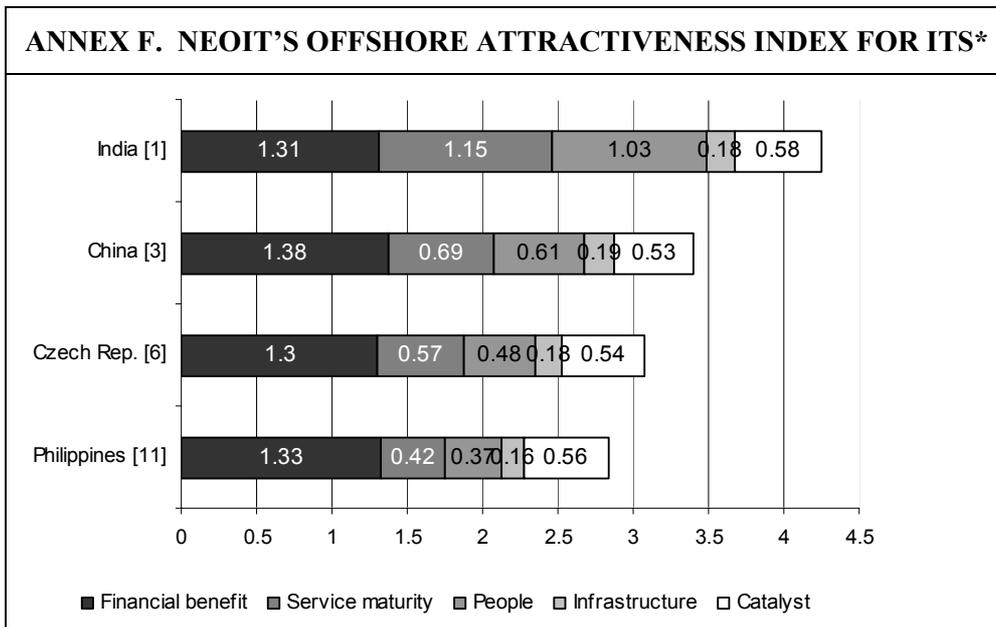
Source: neoIT (2006).

ANNEX E. SURVEY RESULTS

Which functions, if any, does your company outsource now and which do you plan to outsource within the next three years? (% respondents)



Source: EIU (2005)

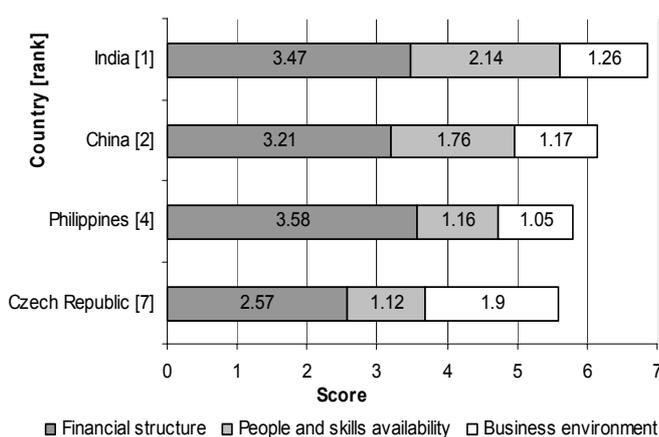


* Financial benefit (labour cost, operating and capital expenditures): weight 30%; service maturity (process maturity and competency of suppliers, industry size and growth, security/IP protection): 25% weight; people (labour pool and skill level, language proficiency, HR, educational system): 25% weight; infrastructure (ICT and physical infrastructure): 5% weight; catalyst (government support, geopolitical environment, physical and time zone displacement, cultural compatibility): 15% weight.

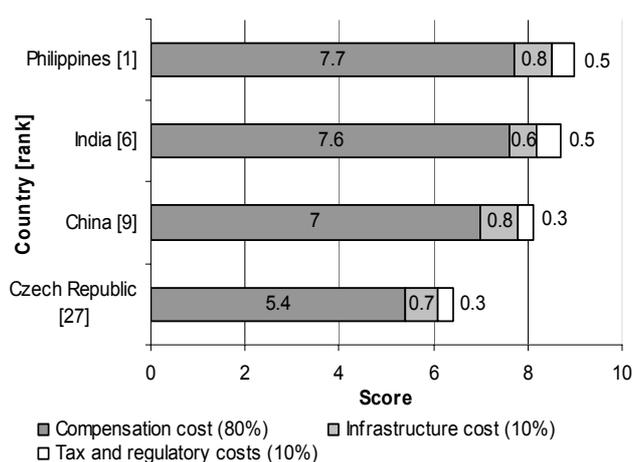
Source: neoIT (2005)

ANNEX H. A.T. KEARNEY'S GLOBAL SERVICES LOCATION INDEX 2005

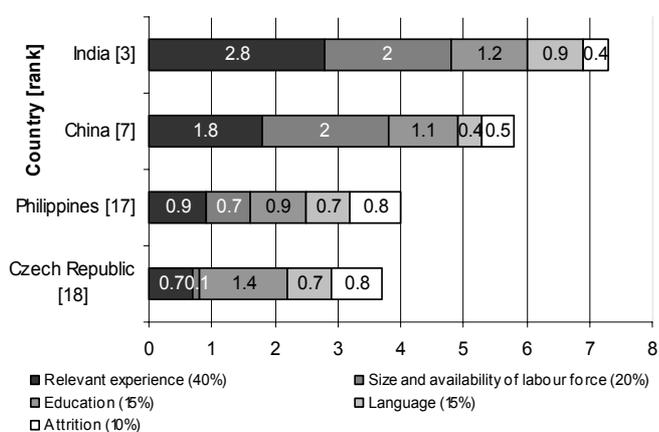
I) Aggregate Global Services Location Index*



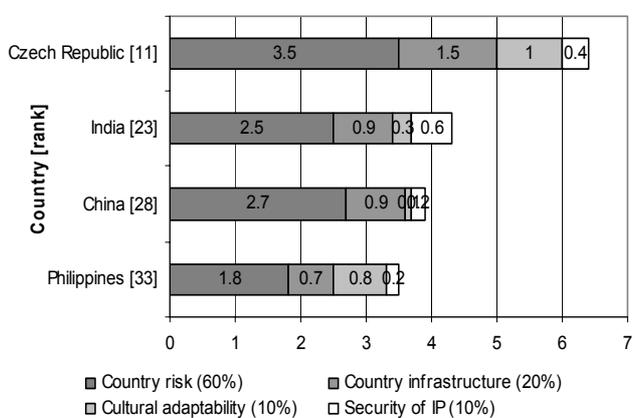
II) Financial structure



III) People and skills availability



IV) Business environment



* The numbers in the bars are index numbers and the weight distribution for the three categories is 40:30:30. Financial structure is hence rated on a scale of 1 to 4 while the business environment and people skills and availability are rated on a scale of 1 to 3.

Source: A.T. Kearney (2005, 2006)

ANNEX I. COMPARATIVE ECONOMIC AND TRADE INDICATORS, 2005

	China	Czech Republic	India	The Philippines
Population (mn)	1,307 ^a	10.2	1,095 ^a	87.9 ^a
GDP (US\$ bn)	1,914	124	798 ^a	98
GDP per head (US\$)	1,460	12,086	728 ^a	1,120 ^a
GDP per head (US\$ at PPP)	6,200	18,005	3,492 ^a	4,734 ^a
Inflow: direct investment (US\$ bn)	54.94 ^b	4.45 ^b	4.32 ^c	1.13
Outflow: direct investment (US\$ bn)	1.81 ^b	0.57 ^b	1.88 ^c	0.15
Exports of goods & services (% of GDP)	38.5 ^c	71.2 ^b	19.0	47.3
Imports of goods & services (% of GDP)	40.4 ^c	71.7 ^b	21.0	52.0
Trade balance, goods (US\$ bn)	59.0 ^b	-0.88 ^b	-14.6 ^c	-7.55
Trade balance, services (US\$ bn)	-9.7 ^b	0.48 ^b	6.5 ^c	-1.40
Major exports (% of total)	Office machines & data processing equipment: 14.5 Telecom products: 12.4 Electrical machinery: 9.9 Apparel & clothing: 9.7	Machinery & transport equipment: 51.1 Intermediate manufactured goods: 21.7 Chemicals: 6.3 Raw materials & fuels: 5.6	Engineering goods: 21.0 Textiles & textile products: 15.6 Gems & jewellery: 15.1 Petroleum products: 11.2	^d Electronic components: 52.4 Apparel & clothing: 8.6 Coconut oil: 1.5 Petroleum products: 1.4
Major imports (% of total)	Electrical machinery: 19.7 Crude oils and fuels: 7.9 Office machines & data processing equipment: 5.3 Iron and steel: 4.0	Machinery & transport equipment: 40.5 Intermediate manufactured goods: 20.3 Chemicals: 12.0 Raw materials & fuels: 11.1	Petroleum products: 30.9 Electronic goods incl computer software: 9.9 Gold & silver: 7.9 Machinery (excl electrical & electronic goods): 6.9	^d Electronic components: 24.4 Office and EDP machines: 10.3 Mineral fuels: 9.0 Telecom equipment: 7.6
Main trading partners, exports fob (% of total)	United States: 21.4 Hong Kong: 16.3 Japan: 11.0 South Korea: 4.6	Germany: 33.6 Slovakia: 8.7 Austria: 5.5 France: 5.3	United States: 19.2 China: 9.5 UAE: 8.4 UK: 4.9	United States: 20.7 Japan: 17.4 Hong Kong: 10.4 China: 9.9
Main trading partners, imports fob (% of total)	Japan: 15.2 South Korea: 11.6 Taiwan: 11.3 United States: 7.4	Germany: 33.0 Russia: 6.3 Slovakia: 6.0 China: 5.7	China: 7.4 United States: 6.6 Belgium: 5.2 Singapore: 4.9	Japan: 19.6 United States: 15.6 Singapore: 9.2 China: 6.3

Source: The Economist Intelligence Unit (2006a, 2006b, 2006c, 2006d)

^a Economist Intelligence Unit estimates, ^b 2004, ^c 2003, ^d Government of Philippines, 2002, www.dti.gov.ph/contentment/9/60/64/67.jsp

ANNEX J. SELECTED LABOUR SUPPLY INDICATORS

	China	Czech Republic	India	The Philippines
Public expenditure on education, 2002-04 (% of GDP) ^f	3.4 ^e	4.6	3.3	3.2
Adult literacy rate, 2004 (% ages 15 and older) ^f	90.9	99 ⁱ	61.0	92.6
Adult literacy rate, 2004 (% ages 15-24) ^f	98.9	..	76.4	95.1
Universities (number) ^e	1,731 ⁱ	26 universities and 36 private higher education institutions ^a	225 universities 6,800 affiliated colleges 1,128 polytechnics	..
Enrolled students at university (mn) ^e	13.3 ⁱ	0.26	9.3 ^k	2.76 ^c
Tertiary students in science, engineering, manufacturing and construction (% of tertiary students) ^f , 1999-2004	..	30	22	25
Internet penetration (% population) ^h	9.4	49.9	3.6	9.1
Total remittances received, 2002 (US\$ mn) ^g (World ranking, total remittances received)	14,383 (2)	1,343 (26)	14,842 (1)	7,660 (4)
Corruption Perceptions Index, 2006 (Ranking out of 163 countries)	70	46	70	121

^a 2005, ^b 2004, ^c 2003, ^d 2002, ^e EIU (2006), ^f UNDP (2006).

^g OECD (2005), "Total remittances" refer to the sum of the "compensation of employees", "worker's remittances" and "other current transfers in other sectors".

^h Internet World Statistics, figures were the latest available on 29 November 2006, www.internetworldstats.com.

ⁱ Universities and institutions of higher education in 2004. ^j CIA Factbook, 2003 estimate. ^k According to www.nasscom.com, 9.3 million students were enrolled in institutes of higher education and colleges in March 2005.

ANNEX K. TOP BPS AND ITS PROVIDERS IN 2005

Rank	China ⁵⁵	Revenue ⁵⁶ (US\$ mn)	Czech Republic	Revenue ⁵⁷ (US\$ mn)	India ⁵⁸	Revenue (US\$ mn)	The Philippines ⁵⁹
1	Neusoft	54	IBM	104	TCS	1,644	Accenture
2	Dalian Hi-Think Computer Tech	37	Hewlett-Packard	96	Infosys Technologies	1,502	AIG BPSI
3	SinoCom	32	ČEZData	70	Wipro Technologies	1,198	American Data Exchange
4	Chuwa Software	22	LogicaCMG	50	Satyam Computer Services	745	Caltex Shared Service Center
5	HiSoft	16	Accenture	40	HCL Technologies	588	Crescent Services
6	CS&S	16	SAP	40	Patni Computer Systems	342	Fluor Daniel
7	Venus Software	15	Siemens Business Services	39	I-flex Solutions	245	Maersk Administrative Center
8	Worksoft	12	T-Systems	31	Mahindra British Telecom	202	Navitaire
9	Beyondsoft	11	PVT	28	Polaris Software Lab	154	Procter & Gamble
10	iSoftStone	8	Unicorn	27	Perot Systems TSI	145	SPI Transact

Source: For China: AI (2006a); for the Czech Republic: IDC (2006); for India: Nasscom (2006); and for the Philippines: Optel (2005).

⁵⁵ The list does not cover foreign companies. According to AI (2006b), during Q2 2006, China's ITS market was dominated by IBM (5.8%), HP (5.3%), Digital China (2.5%), Neusoft (2.2%), CS&S (1.9%), Accenture (1.4%), Bearing Point (1.1%), Unisys (0.8%), SE (0.7%) and AsiaInfo (0.6%).

⁵⁶ According to IDC's classification, the data include Chinese or non-Chinese companies delivering "software development services" to non-Chinese companies either directly or to their subsidiaries in China.

⁵⁷ Revenue generated by offshore centres is not reported in the table.

⁵⁸ The Indian data cover the year ending 31 March 2005. IBM is not included in the list.

⁵⁹ The Philippine data are for 2004. Revenue data were not available and contact centres are not included in the list. The ten largest Philippine contact centres in terms of number of seats were Sykes Asia, E-Telecare, PeopleSupport, Client Logic, Advanced Contact Solutions, Ambergris Solutions, Convergys, Cyber City Teleservices, ICT Group Philippines and C3 in ascending order.

ANNEX L. HEADCOUNT OF SELECTED LEADING IT SERVICES PROVIDERS**Foreign companies**

	Total (MNE only)	Accenture	ACS	Atos	Bearing Point	Cap Gemini	CSC
Total employees at end of CY05E	743,593	125,000	51,000	48,000	16,990	61,244	80,000
India-based employees for CY05E	81,828	19,500	2,000	1,200	600	2,600	5,250
As % of total employees	11%	16%	4%	3%	4%	4%	7%

Foreign companies, cont.

	EDS	Keane	IBM Services	Sapient	Unisys	Xansa
Total employees at end of CY05E	116,000	10,000	190,500	3,259	36,000	5,600
India-based employees for CY05E	4,500	2,400	38,100	1,878	1,000	2,800
As % of total employees	4%	24%	20%	58%	3%	50%

Indian companies

	Cognizant	Infosys	Patni	Satyam	TCS	Wipro
Total employees at end of CY05E	23,200	45,206	11,930	23,214	53,177	49,300
India-based employees for CY05E	16,939	36,240	9,553	17,317	38,445	41,511
As % of total employees	73%	80%	80%	75%	72%	84%

Source: NASSCOM (2006).