

PART II

Chapter 3

**Business Process
and Information Technology
Outsourcing**

1. Summary

Business process and technology outsourcing (BPTO) refers to sharing organisational control of any company process including information and communication technology (ICT), human resources (HR), finance and accounting (F&A), sales, marketing, customer service and supply chain management to reduce costs. The BPTO sector includes firms either specialised in a segment such as call centres or finance or offering a full range of outsourcing services including HR, accounting, payroll, IT etc. Examples of such full service BPTO firms are EDS, Accenture, Capgemini.

1.1. Market dynamics

The global BPTO market has grown at a rate of 25% per year since 2005. This market is expected to reach USD 252 billion by 2010. India leads the sector today, with close to 60% market share. However, it does not have a monopoly. The Western Balkans has emerged as a strong contender in three segments: software development, back office development and call centres.

On the demand side, the rise of the BPTO sector in the Western Balkans has been fuelled by three key customer requirements: i) cost reduction; ii) a strategic focus on core competences; and iii) the need to leverage external expertise. The BPTO sector has responded by providing facilities closer to customers and further adapting to customer requirements. For software development, sector and individual business driven solutions have been devised. This has entailed developing sector specific capabilities. It has also meant offering complete solutions, not just programmes. For back office services and call centres, suppliers have invested in accessing, attracting and training well qualified employees: 70% to 80% of costs are employee related.

1.2. Western Balkans positioning

The Western Balkans can be competitive in the BPTO sector with a growing ICT industry. ICT is 1.2% of regional GDP and expected to grow by 9% between 2007 and 2011 – a similar rate to that in the Asia Pacific region or China. The cost of labour in services is up to five times lower in the Western Balkan economies than in Hungary or Poland. In addition, proximity to the EU and other regional markets makes the Western Balkans a prime location for companies interested in outsourcing some of their operations. Short-term opportunities exist, as several large BPTO players are already present in neighbouring countries including Bulgaria, the Czech Republic and Romania. Both “hard” and “soft” capabilities already exist in the Western Balkans. For back office services and call centres, language capabilities are strong across the region, especially in English, German and Italian. The region shares understanding and social customs with EU countries. For software development, Croatia is one of the economies emerging as a leader.

However, to sustain competitiveness cost is not a long-term source of differentiation. Labour costs in the BPTO sector are increasing, while international companies increasingly

require higher skill levels. Moreover, firms in this sector in the Western Balkans are currently too fragmented to compete effectively, with 13 employees per company on average.

1.3. Operational recommendations for firms

To compete more effectively, the BPTO sector in the Western Balkans should focus on four areas: i) capture segments offering the best growth opportunities, such as software development, back office functions and call centres; ii) leverage proximity to attractive markets, including Western and Eastern Europe; and iii) target large global BPTO providers, such as Accenture, Capgemini and EDS, to develop value-added services, enable knowledge transfer, innovation, and building of capabilities (this does not exclude directly targeting end-customers); and iv) for software companies, focus on providing customised customer solutions.

To respond to these BPTO challenges, companies in the Western Balkans need to specialise. For example, back office services and call centres should focus first on large or high-growth segments such as financial services and mobile telecom; firms offering these services should also have a few niche offerings in high-demand areas such as collection of accounts, sales and marketing support, technical assistance and remote security database administration. Specialisation increases productivity, allows firms to set higher prices and facilitates the creation of an international network of clients.

At the same time, each of the Western Balkan economies should compete by leveraging its strengths and capabilities. For example, Croatia should focus further on software development and knowledge process outsourcing (KPO), including advanced analytics. Other economies, especially Albania, Bosnia and Herzegovina and Kosovo under UNSCR 1244, should focus on low-cost, volume-driven back office work such as data processing and payroll management.

1.4. Policy recommendations for governments

The activities of many firms in the region have been hindered by three main policy barriers:

The Western Balkans suffers from a gap in skills availability. Education and training were cited by 70% of Regional Capability Survey (RCS) respondents as a key policy issue, both in terms of quality and availability. This is a problem, in particular, with respect to those positions that most need to be filled, such as project managers, application developers and multimedia designers and developers. There is also a need to better market and present firms' existing capabilities. Lack of qualified staff is leading to increased running costs, loss of service quality and loss of business. In addition, firms in this new sector are still too small and fragmented to offer long-term career growth and manage employee attrition. The shortage of qualified employees is accentuated by the "brain drain" to the EU and other countries;

ICT infrastructure needs further improvement. While Croatia has reached and even surpassed the level of some EU countries, and Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia and Serbia have fairly well developed infrastructure in major cities, peripheral areas tend to lag behind;

BPTO firms cite high social charges as a key issue for this labour intensive sector. Non-wage labour costs are on average 18% of gross salaries, significantly above the East Asia and Pacific average of 11%.

Among the three barriers the most important to address in the short and medium term is human capital development through private sector involvement and better tailored educational programmes.

In the software development segment, problem solving skills and specific knowledge of software and/or hardware are needed. The software segment requires constant technology upgrades: skills acquired only a few years earlier can cease to be relevant. This is particularly true for sector/technology specific skills like the ability to use computer aided design (CAD), computer aided engineering (CAE), design for manufacturability (DFM), enterprise resource planning (ERP) or vendor managed inventory (VMI). Knowledge of key software programming languages like PHP SQL, Ajax, XML and ActionScript is also needed.

To address skills gaps, policy makers should involve academia and the private sector further at three levels:

- *At pre-employment level:* internships, participation in university courses, and exchange programmes with foreign vendors and universities.
- *During employment:* linkage programmes and company training, including sector/technology specific courses, *e.g.* legal, accounting (IFRS and US GAAP standards), the medical environment and medical technical support, and advanced business and technical languages for remote technical assistance.
- *During unemployment:* use of e-courses, particularly concerning new business activities like knowledge-intensive processes (*e.g.* R&D engineering for product development and legal e-discovery), as well as other analytical business functions (*e.g.* financial analytics for investment managers, patent prior art searches, freedom-to-operate and licensing out of support for patent engineers, etc.).

Medium-term requirements should focus on more structural reforms, including the establishment of a human capital co-ordination team in each country to bring together key decision makers from the ministries of education, labour and economy, as well as from the private sector and civil society. Analytical tools need to be developed to evaluate skills gaps, especially in knowledge-intensive BPTO niches. The ability of the labour market to favour the entry of new people into the market, and the development of skills through co-operation between the public and private sectors, also needs to be enhanced. This should include relief from social charges, with the amount of such relief to be reinvested in training.

2. Sector definition and segmentation

2.1. Sector definition

Clients engage in BPTO by hiring an external firm to handle business activities which were previously carried out in-house. BPTO encompasses a number of functions that are generally considered “non-core” to the primary business strategy of the outsourcing firm, including:

- *Information technology services and support*, including developing and maintaining data, software development¹ and website hosting, *e.g.* SAP Services: Software Maintenance and Support.
- *Finance and accounting*, including managing accounts payable and receivable, conducting financial accounting, and reporting and legal research, *e.g.* Capgemini: Finance and Accounting.

- *Human resources*, including payroll processing and administering the recruitment process, e.g. Accenture: Human Resources Management;
- *Sales, marketing and customer service*, including telesales, processing of orders and provision of customer services, e.g. EDS: Customer Relationship Management (CRM) Services;
- *Operations and logistics*, including tracking orders and supplying translation services, e.g. Accenture: Supply Chain Management.

Regarding the first segment, the OECD Working Group on Information Society Indicators (WPIIS) defines information and communication technology (ICT) as “a combination of manufacturing and services industries whose products capture, transmit or display data and information electronically” (WPIIS, 1998). In addition, “The production (goods and services) of a candidate industry must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display” (OECD, 2007a,b).

For the purpose of this report, and taking into consideration current data availability, the definition of the ICT sector used here is based on the classification provided by the European Information Technology Observatory (EITO, 2008) (Table 3.1).

Table 3.1. Definition of the ICT sector

Carrier services	ICT equipment	IT ² services	IT software products	Digital consumer electronics
Fixed voice telephone services	Data and network equipment	Professional services	Systems infrastructure	TVs, projectors
Fixed data services	End-user communications equipment	Product services	Application development	Audio and video players, hi-fi systems
Mobile telephone services	Office equipment	Knowledge management	Mobile and embedded software	Audio and video recorders, camcorders, cameras
Cable TV services	Computer hardware	Wholesale and business trade	Application solutions	Game consoles, car navigation

Source: EITO (2008).

The OECD Regional Capability Survey (RCS) included further sub-segments (e.g. application development, mobile and embedded software, applications solutions) as well as professional services, product services and knowledge management.

2.2. Segments

The world market for offshore services in 2010 is projected to be around USD 252 billion. USD 58.8 billion will represent service centres for business functions, and USD 93.3 billion will represent information technology outsourcing (Table 3.2).

Growth in offshoring is driven by general growth in the ICT sector, which reached EUR 2 238 billion in 2007 and is increasing by more than 5% annually (EITO, 2008). The size of the EU’s ICT market was EUR 739.3 billion in 2007, making it the largest in the world. Furthermore, the EU market has been growing by 3% on average for the last three years.

Table 3.2. **Global offshore services market, 2005-10**

Segment	Details	Size (USD billion)		CAGR 2005-10	Share of total	
		2005	2010		2005	2010
I/O services	Software maintenance and support; IT management; hardware management and support; development and integration	29.3	93.1	26%	36%	37%
BPO services	Shared service centres (captive or outsourced) for business functions; includes human resources (HR); finance and accounting (F&A); sales, marketing and customer care ³ ; supply chain management	19.3	58.8	25%	24%	23%
KPO services	Knowledge intensive high-end processes, including advanced analytical and technical skills as well as some decision making	3.1	31.0	58%	4%	12%
R&D engineering	R&D, prototyping, development, testing, maintenance, support and development for next generation products	5.8	19.0	27%	7%	8%
Content development and management	Development and management of local content for all ICT-enabled devices: internet, mobile devices, DVDs, multimedia, etc.	9.9	14.5	8%	12%	6%
Engineering/technical support centres	Call centres and other CRM methods requiring technical knowledge to provide support to internal/external customers of companies that deliver technology enabled products and services	4.1	12.4	25%	5%	5%
Call centres	Call centres and customer relationship management through other methods including email newsletters, postal mail catalogues, web site inquiries and chats	5.9	11.4	14%	7%	5%
Localisation and language services	Localisation of user interface (UI), user assistance (UA) printed and on-line documentation, computer-based training (CBT), web applications and desktop publishing	3.2	11.0	28%	4%	4%
IT products	High tech and software products designed as packaged solutions for multiple, off-the-shelf use	0.9	1.2	7%	1%	0%
Total		81	252.4	25%	100%	100%

Source: A.T. Kearney, Gartner, IDC, Neo-IT, OECD analysis.

In 2007 the market size of the four main ICT segments in the EU was as follows:

1. *Carrier services*: EUR 307.2 billion.
2. *Software development and IT services*: EUR 207.2 billion.
3. *IT equipment*: EUR 89.8 billion.
4. *Digital consumer electronics*: EUR 61.2 billion.

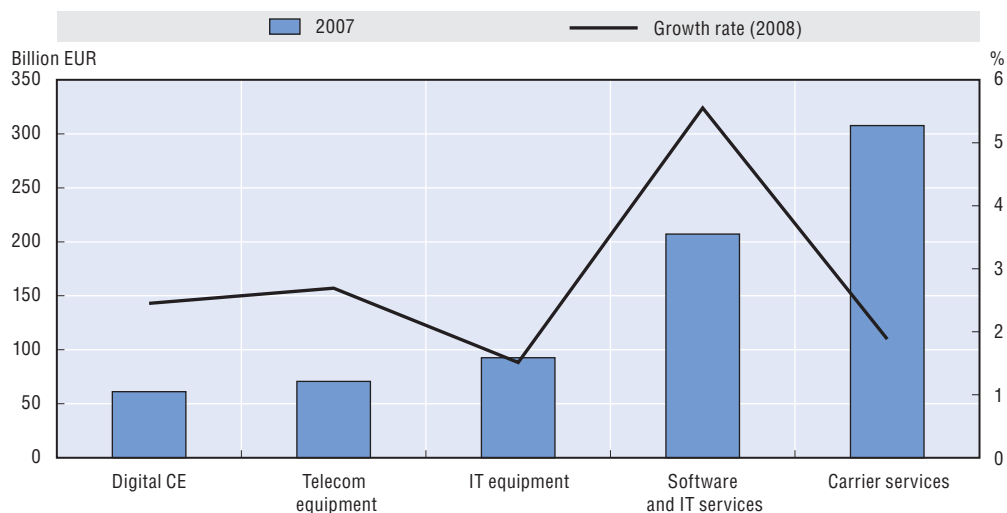
Software development and IT services was the fastest growing segment, at 5.6%.

The following segments have high growth prospects: enterprise resource planning (ERP) systems for SMEs (including in high growth ERP sectors like banking, telecom and retail), outsourcing of project management for ERP implementation, and compliance with international accounting standards.

Regarding software development, these sub-segments have the highest growth prospects: security, cross-platform business intelligence, service-oriented architecture (SOA) development, and desktop to mobile environment platforms.

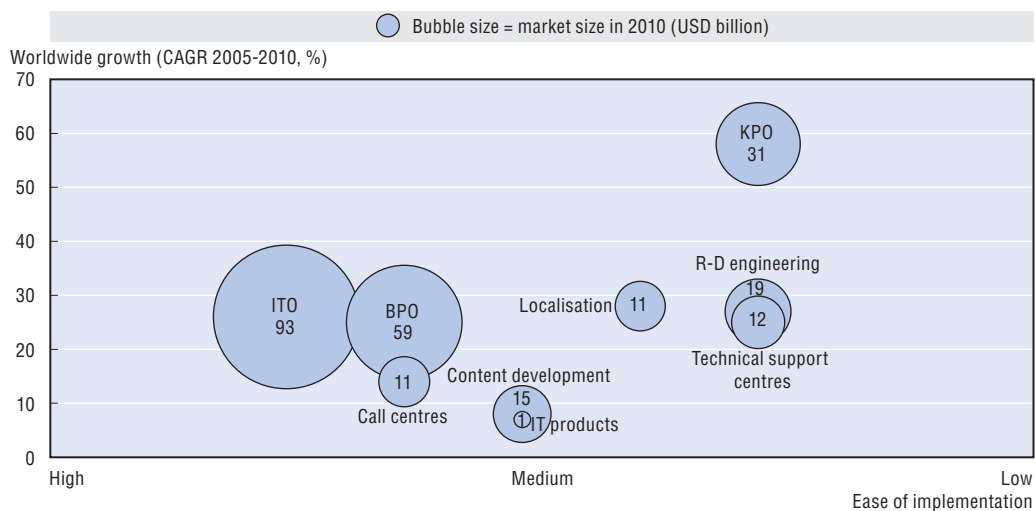
The OECD has created a prioritisation matrix for use as a framework when considering whether to venture into a particular segment. It juxtaposes the ease of implementing a particular segment in a new location against the segment's worldwide growth rate (Figure 3.2).

Figure 3.1. **EU market size (2007) and estimated growth rate by ICT segment (2007-08)**



Source: EITO (2008).

Figure 3.2. **Ease of implementation and growth of the global BPTO industry by segment**



Source: Gartner, IDC, NeoèIT, A.T. Kearney, OECD analysis.

Based on global trends and the prioritisation matrix, the OECD has identified three key segments within the BPO and ICT industries on which to focus:

- Finance and legal support services.
- Software development services.
- Call centres.

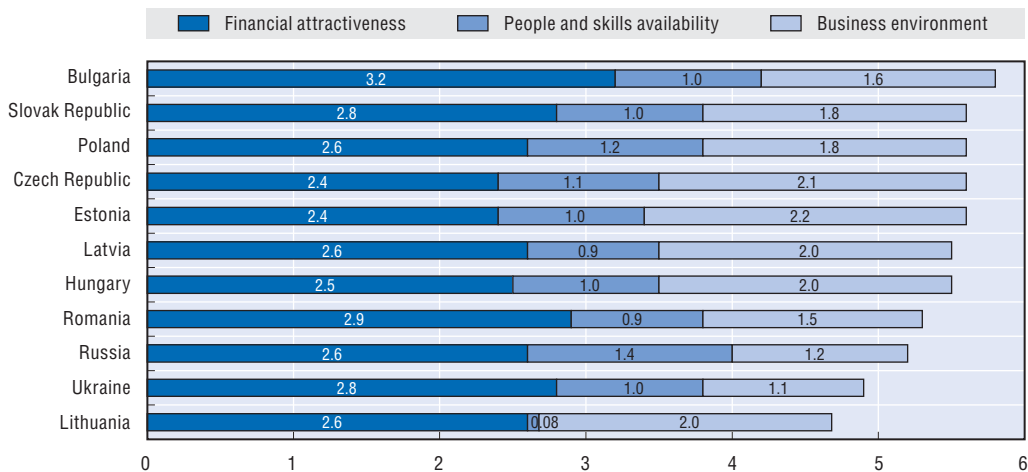
3. Sector trends

The global BPTO phenomenon started in India and other countries in the mid-1980s with the arrival of several western companies (including General Electric, Motorola,

Hewlett-Packard and Citigroup) that set up captive investments.⁴ In India this trend was largely propelled by better government regulations, a reduction of import duties on hardware, the creation of special software technology parks and incentives for investors, and the general improvement in information technology worldwide.

India continues to lead the sector today in terms of offshore and/or outsourced services, with close to a 60% market share in 2005 (Engman, 2005), but it does not have a monopoly on the international BPTO market. Other contenders are emerging. Firms in several Central and Eastern European countries have entered the arena as shown by the A.T. Kearney Global Services Location Index which combines data on 50 locations worldwide to determine their competitiveness for attracting BPTO services (Figure 3.3). These and other emerging BPTO locations, including the Western Balkans, are taking advantage of three key trends that have been defining the BPTO sector: i) improved infrastructure; ii) growing demand for BPTO; and iii) the move towards global service providers.

Figure 3.3. 2007 A.T. Kearney Global Services Location Index

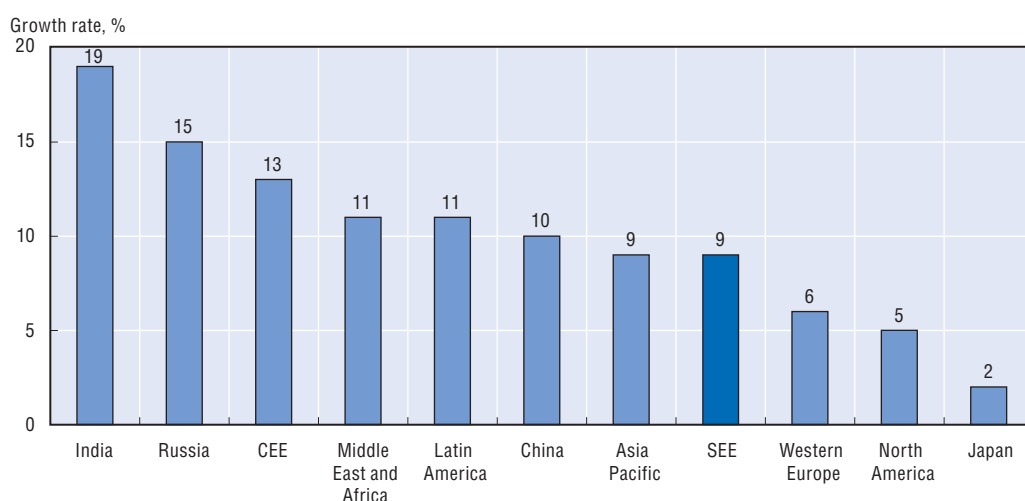


Source: A.T. Kearney (2007).

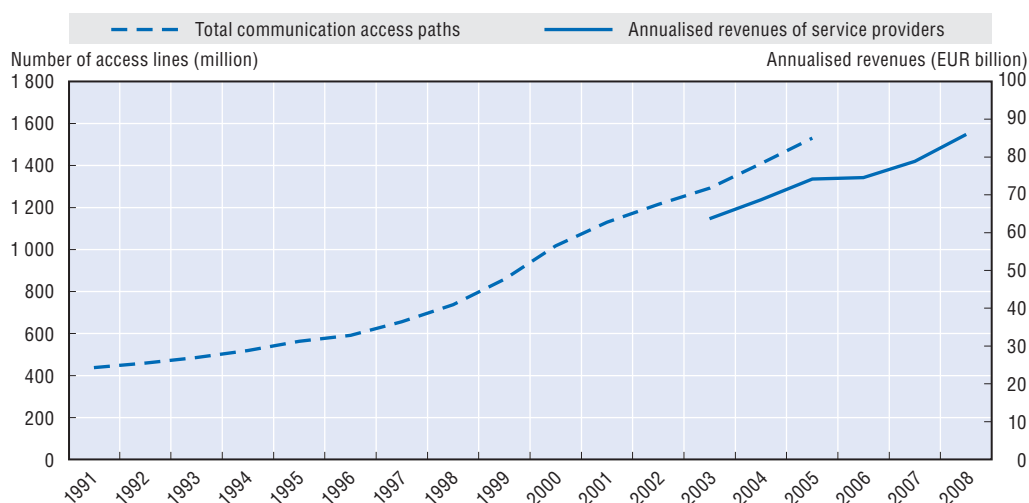
3.1. The basis for growth: improved ICT infrastructure

The most important trend shaping the BPTO sector is probably the rapid rate at which information and communication technology (ICT) is improving. Governments and private enterprise have reacted to the potential economic impact of ICT, in particular improved productivity levels, by investing heavily in ICT. Growth rates in ICT spending throughout the world are soaring (Figure 3.4). In 2006, 166 countries had broadband connections; it was estimated that as many as 177 countries would have them by the first half of 2008 (International Telecommunication Union, 2007).

Improved ICT infrastructure has an important impact on the BPTO sector. It makes product competition feasible in the services industry; ICT, especially broadband access, enables customers and producers of services to be located in different cities or countries, or even on different continents. This has opened up global competition in the BPTO sector, increasing both supply and demand of BPTO services and allowing customers to outsource/offshore what were previously in-house operations. Total communications access paths⁵ have increased greatly since the early 1990s, largely through investments in broadband

Figure 3.4. **Growth rates in ICT spending, 2005 (%)**

Source: Zitnik (2005).

Figure 3.5. **Number of access paths and service provider revenues**

Source: OECD (2008), TPI (2008).

and mobile communication infrastructure. The revenues of providers of outsourced services have generally risen in line with improved ICT infrastructure (Figure 3.5).

The impact of ICT developments on the BPTO sector is continuing. Fibre capacity for long distance communication has increased more rapidly than demand, offering scope for further productivity increases as this oversupply is consumed. In addition, the boom in ICT innovation continues. New technologies have been developed, including WiMAX, which provides fast internet connections wirelessly to large geographical areas (Box 3.1), and IEEE 802.11n, a set of standards for wireless local area network computer communication with the potential to supply speeds up to 100 times faster than those currently available.

Other recently emerging trends that have gained increasingly broad acceptance are the evolution of the internet towards Web 2.0 and the “open source” phenomenon.⁶ Most ICT companies largely rely on components from other vendors that are increasingly

Box 3.1. WiMAX

Worldwide Interoperability for Microwave Access (WiMAX) is a telecommunications technology that provides long distance wireless broadband connectivity based on the IEEE 802.16 standard. It can supply thousands of households with speeds rivalling traditional DSL connections. It is also capable of supplying hundreds of businesses with T1 speed connectivity.¹

The potential for WiMAX is especially important in the case of “last mile” connectivity, i.e. the provision of internet connections in remote locations where infrastructure investments in wired broadband like cable and DSL have not been made due to high costs.

1. T1 lines provide very high speed data connection, operating at about 1.5 million bits per second. This is typically used by businesses. DSL connections, which are slower than T1 connections, are generally used by homes due to their lower cost.

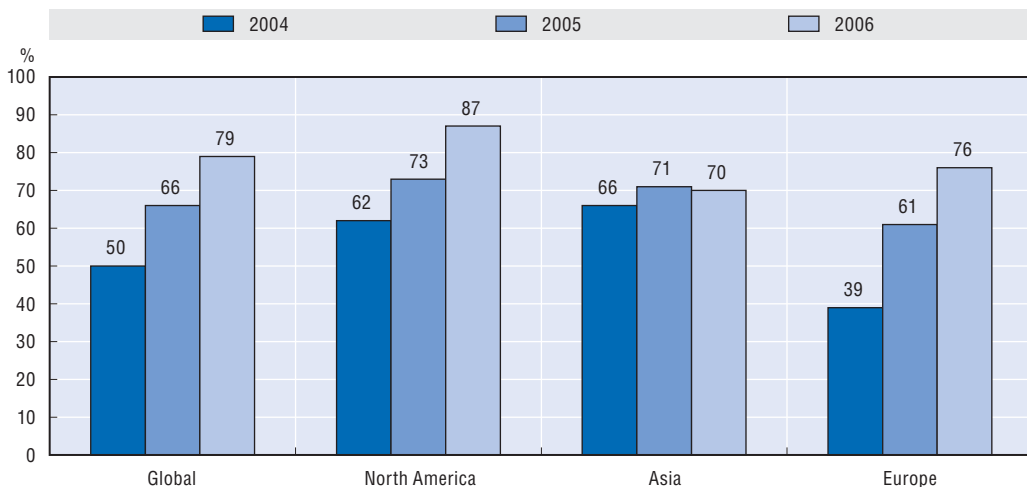
Source: WiMAX Forum website (www.wimaxforum.org).

integrated with open format or open source and application programming interface (API). This allows ICT companies to leverage the “loose modularity” principle, whereby a web site can combine data offered by other sources (typically free of charge) to create a new offering at very low cost (BCG, 2006, 2007). Worldwide software revenue based on Linux and other open source environments are estimated to grow between 2004 and 2009 at a cumulative average rate of 48%, reaching USD 16.7 billion. Many companies, large and small, are offering innovative open source solutions (e.g. EMC, Google, HP, IBM, Intel, Microsoft, MySQL, Novell, Oracle).

3.2. Increasing demand for BPTO

The BPTO sector has grown at an annual rate of 25% since 2005. According to the AT Kearney Foreign Direct Investment (FDI) Index, 79% of companies with global investments were planning to offshore some of their service activity in 2006, versus 50% in 2004 (Figure 3.6). This increase in interest in outsourcing BPTO services is largely attributable to

Figure 3.6. Companies planning to offshore service activities (%)



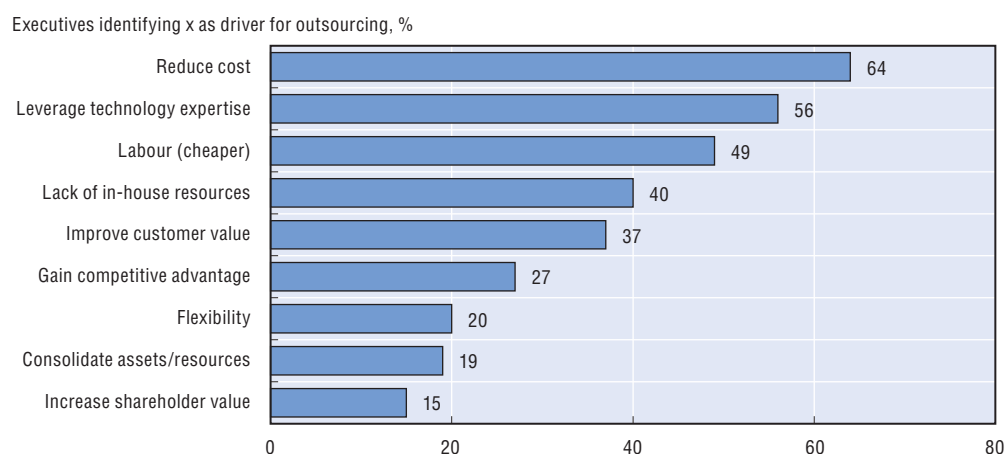
Source: A.T. Kearney FDI Index (2006).

three customer requirements: i) cost reduction; ii) a strategic focus on core competences; and iii) leverage of external expertise.

3.2.1. The need to reduce costs and focus on core competences

Cost reduction continues to be the primary factor motivating firms to outsource their business functions. According to a recent study by Deloitte, 64% of executives surveyed indicated that reducing costs was a driver for their outsourcing initiatives and 49% that tapping into cheaper labour was one of their main motivations (Deloitte Consulting, 2008). However, 56% were looking to leverage technology expertise (the second most important driver) while 27% hoped to gain a competitive advantage (Figure 3.7). The percentage which indicated that they felt their companies had benefited from significant innovation and from business process re-engineering due to outsourcing was 34% and 28%, respectively.

Figure 3.7. **Primary drivers of outsourcing**



Source: Deloitte (2008).

Box 3.2. **BPTO as a strategic investment**

As outlined in the Deloitte 2008 Outsourcing Report, many firms have already leveraged BPTO as a strategic investment and not simply a cost-cutting measure, providing value-added by improving competitiveness. One global media company cited used outsourcing to streamline its financial system. Prior to outsourcing, this company had almost a dozen individual financial control systems. The BPTO firm combined these into a single system. Internal trading volumes were reduced by 75% and financial management costs by 50%.

Another BPTO firm provided a large US retail company with a single IT platform, replacing a cumbersome multi-platform system. Processing time was reduced and system performance increased, enabling the company to better analyse purchasing data from customers and to reduce costs.

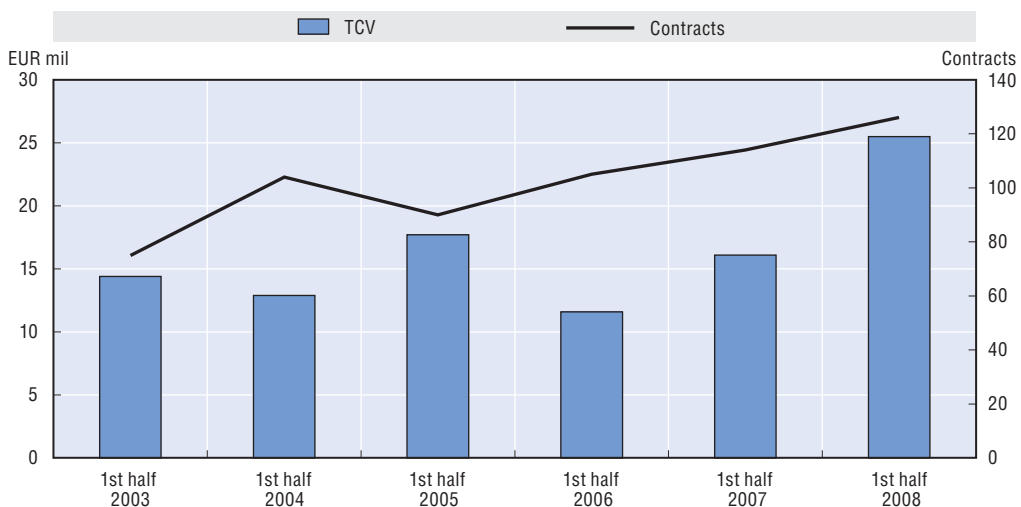
Source: Deloitte (2008).

3.2.2. The need for external expertise

Global investors are increasingly offshoring non-core service activities to leverage external expertise. The global year-on-year growth rate for BPTO has been 25%. Demand

growth is especially strong in the case of European investors: only 39% were planning to offshore their business functions in 2006, but by 2006 that share had reached 76% (Figure 3.6). Europe had a year-on-year growth rate of over 40% in the same period, the highest among the regions surveyed. This growth is mainly driven by large outsourcing contracts to technology companies like IBM, Accenture, Cap Gemini or EDS/HP. The total contract value (TCV) of the broader global outsourcing market in the first half of 2008 was over EUR 25 billion (Figure 56), demonstrating a year-on-year growth rate of 12% in the same period (TPI, 2008).⁷ Between the first half of 2007 and the first half of 2008, the year-on-year TCV growth rate was 58%, compared with 24% for the broader global market. Many European firms are interested in benefiting from the same cost savings and productivity gains as earlier BPTO users.

Figure 3.8. **Value and number of BPTO contracts in Europe, first half of the year (2003-08)**



Source: TPI (2008).

3.3. How BPTO service providers are responding: globalisation and specialisation

BPTO service providers have responded to customer trends by providing facilities closer to their customers and adapting further to their functional requirements. This has translated into sector specific specialisation and, in the software development segment, into offering companies complete solutions and not just programmes.

3.3.1. Getting closer to the customer base

The BPTO sector is increasingly building a “global service model”. Many large BPTO firms are creating global companies able to provide services that cater to a diverse group of business needs and geographical locations. To achieve this, they have set up businesses in a number of different areas (from Asia to Latin America to Europe) to capitalise on disparate time zones as well as to offer different languages and skill sets. Aided by the emergence of global trade in services, these firms have expanded their clientele beyond national borders to service international clients. For example, WNS (an Indian BPTO company) was founded as a ticketing office for British Airways in Mumbai. Today it is a global company with offices throughout the world, including in Romania. In 2007 its revenues were more than

USD 352 million. Intelenet Global Services started as a joint venture between HDFC, an Indian retail bank, and Tata Consultancy Services. Today it is an independent company with 17 000 employees in six countries. Firstsource Solutions, another Indian BPTO firm, has emerged as a major global player. It has over 17 000 employees and operates in the US, the UK, India, Argentina and the Philippines. Convergys, a global call centre operator, operates in 35 languages in 70 countries. It has over 74 000 employees and revenues in excess of USD 2.8 billion.

3.3.2. *Specialisation: sector capabilities and comprehensive business solutions*

Service providers have also responded by specialising, either in a particular sector (vertical specialisation) or in a particular function (horizontal specialisation). Specialisation has been shown to increase the productivity of service exporting firms in India (Manova and Shastry, 2006). The more productive Indian service providers offered a smaller spectrum of services to a smaller set of industries. One reason for this is probably management capability. Numerous studies have outlined how management capability declines over a wider range of products.⁸

At the same time, BPTO firms that are more specialised have greater control over setting their own prices for the services they offer. The more specialised the product, either horizontally or vertically, the fewer the number of actors that will be able to provide the product, increasing BPTO providers' scope to set their own billing rates. To increase the impact of having more control over prices, firms with particular expertise and specialisation in an area will probably also produce higher quality services.

Specialisation can make it easier for a new entrant in the BPTO market to build an international reputation. Not only does specialisation facilitate meeting relevant clients, but it also allows a firm to develop a reputation in a niche area that could attract future customers.

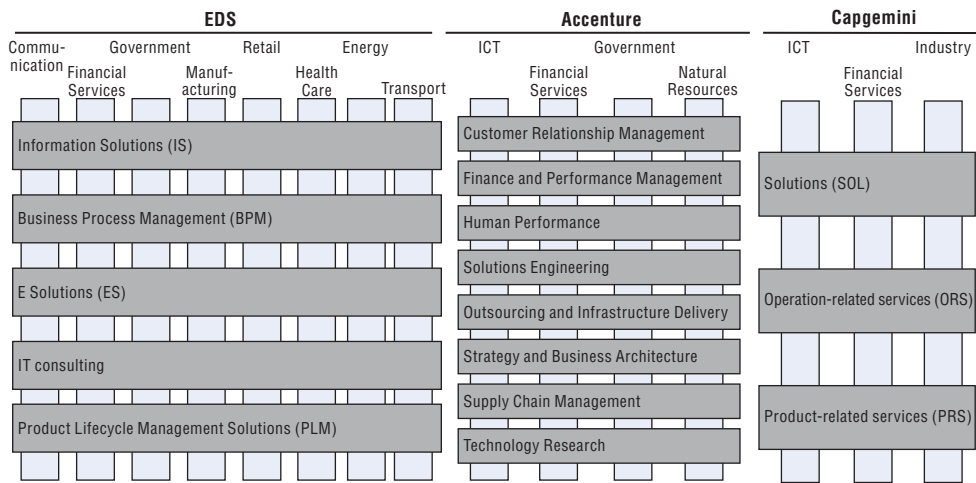
In the BPTO sector, software developers in particular are linking their offerings to individual industries. Many leading IT vendors have vertical as well as regional organisational structures (Figure 3.9). For example, EDS, a BP and IT outsourcing company is vertically specialised in specific industries, including transportation and retail. Accenture and Cap Gemini specialise in the communications and high technology industry.

The implication of this trend is that software development companies need in-depth knowledge of the processes and dynamics specific to individual industries. Figure 3.10 shows some software development solutions in the textile and automotive component industries, covering the pre-assembly, assembly and post-assembly stages of the production process.

The importance of sector specialisation to the software services segment is also related to positive spillovers with respect to economic growth and productivity. This is true not only for the economy overall, but also at the level of individual firms. Among other positive effects, empirical research shows that IT stimulates increases in labour productivity and helps firms to improve overall efficiency in all economic sectors (OECD, 2004). As demonstrated by experience in OECD countries (notably the US and Scandinavian countries), investment in IT research, both public and private, unleashes the innovation potential not only of the IT segment itself, but also of manufacturing and service industries (e.g. automotive, textile, energy, environmental technologies, telecommunications, tourism).

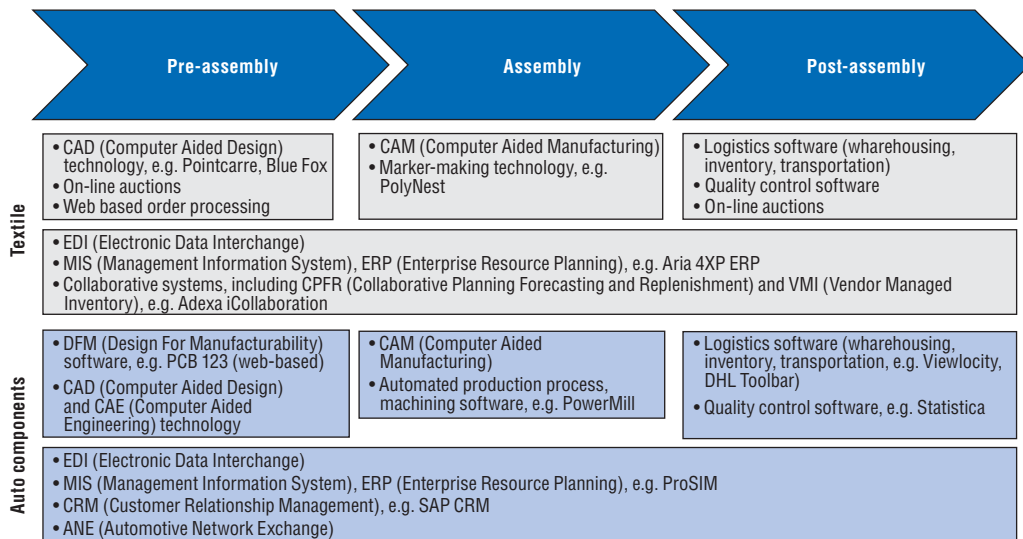
Another way to respond to customer demand is to increase offerings of complete business solutions rather than just programs. For example, Web 2.0 (which enables consumers and

Figure 3.9. Vertical linkages



Source: Annual reports/SEC filings, company websites, OECD analysis.

Figure 3.10. Linking software services to sector needs



Source: OECD analysis.

communities to communicate with each other directly) has had an impact on many traditional approaches to consumer relationships. Companies today need to have a more comprehensive approach to business solutions. Therefore, companies like IBM, Accenture, Cap Gemini and EDS are offering end-to-end solutions converging hardware and software (like mobile phones linked to office software), as well as solutions tailored to companies' new requirements. The age of product and programme offering is declining.

4. Sector implications and key success factors

Trends in both customer demand and service provision have important implications for the BPTO sector. This sector is labour intensive and highly competitive. Therefore, improving the quality of a firm's staff is immensely important for its continued growth and

ability to differentiate itself. This is particularly the case for back office services and call centres. Above all, two types of activities are key to improving internal human capital: i) maximising nearshoring advantages; and ii) improving “hard skills”.

4.1. Maximising the advantages of nearshoring

One way firms that offer back office services and call centres can differentiate themselves is by maximising their nearshoring advantages with respect to a large client, country or region. For example, Latin America is often cited as an excellent location for services outsourced from Spanish customers (see A.T. Kearney’s BPO index). In Romania, the fact that 85% of school children learn French makes that country a natural choice for French clients.⁹ In particular, BPTO firms should ensure that they have two key skill sets to set them apart: i) language ability; and ii) cultural understanding and “soft skills”.

4.1.1. Language ability

Much of India’s success in the back office and call centre segments is due to a large percentage of its large English speaking population. However, there remain large untapped back office and call centre opportunities in Europe, where people are often really fluent only in their mother tongue. Service providers in the Western Balkans whose employees speak European languages other than English (e.g. German, French or Italian) could have a competitive advantage here.

Fluency in a language used by the outsourcing firm is often a requirement. Call centres devoted to customer care need staff fluent in the appropriate language. A certain level of fluency in the client’s native language is also needed to process claims and receipts in the case of firms outsourcing back-office functions.

4.1.2. Cultural understanding and “soft skills”

According to a recent survey, 56% of UK companies cited language and culture as among the key problems they face with outsourcing services (Career Opportunities News, 2002). This is in spite of the fact that the UK and India, its largest outsourcing partner, share a language and cultural history.

Firms offering back office services and call centres should maximise their cultural affinities with large BPTO source markets. Communication is a more complex matter than simply speaking the same language. It can include accents and expressions, and even body movements and. When these “signals” are ignored or misunderstood, this can translate into additional costs. Firms need to ensure that staff have the “soft skills” needed to interact successfully with clients. Communicating on a one-to-one basis can involve a “cluster of personality traits, social graces, language skills, friendliness and optimism” (Career Opportunities News, 2002).

Ensuring that staff have the necessary cultural understanding and soft skills ought to take place at two levels:

At the *hiring level*, through careful screening of potential employees for the skills required by the services provider. This should include interviews with the firm’s human resources or management team, together with various tests (e.g. language and voice tests for a call centre operator);

During employment, by putting in place initial and on-going soft skills training courses for staff, highlighting language and cultural issues which might be relevant.

For back office services, call centres and software development marketing and self-promotional skills are also essential for company managers. This is especially important in light of key gaps identified in this area in the Western Balkans. Relevant skills include presentation, communication and the ability to be convincing.

4.2. Continuous improvement of technical skills

Soft skills are not the only type of skills needed. “Hard skills” (i.e. technical, analytical and problem solving skills, together with relevant subject knowledge) are also important. Software development firms must have familiarity with, and problem solving skills in, specific technical areas. There is also a need for continuous technology upgrades, new introductions and improvements, as skills acquired only a few years earlier may no longer be relevant. Software development firms working in highly specialised areas need to ensure that they continually upgrade staff expertise.

This can be achieved in a similar way to making sure that employees have requisite soft skills. The best practice is for firms to ensure that newly hired staff members have at least a basic understanding of, and familiarity with, the hard skills relevant to the BPTO service, identified through interviews and testing. There should also be a systematic employee training programme to upgrade staff expertise and keep employees abreast of the latest developments.

5. Sector attractiveness in the Western Balkans

Although the BPTO sector is still in its infancy in the West Balkans, outsourcing to this region is increasing rapidly. Three factors support this growth: i) low labour costs; ii) proximity to EU markets; and iii) existing skills.

5.1. A nascent but fast-growing sector

The ICT market represents 1.2% of the Western Balkans region’s GDP, with 9% growth projected between 2007 and 2011 (a similar rate to that in Asia Pacific or China). FDI and exports in the outsourcing sector are not accounted for in national statistics, as the sector is still relatively marginal in this region. However, sector data cross-checks clearly indicate very high annual growth rates of 25%, in line with EU trends. In addition, as ICT infrastructure gradually improves, the focus will shift to software development and IT services. Forecasts of IT employment in the countries of South East Europe show this growth in terms of employment in segments. By the end of 2007, software development accounted for 39% of IT employment; this share is forecast to reach 44% by 2011 (Figure 3.11). About 7 000 companies currently operate in the software development segment in the Western Balkans.

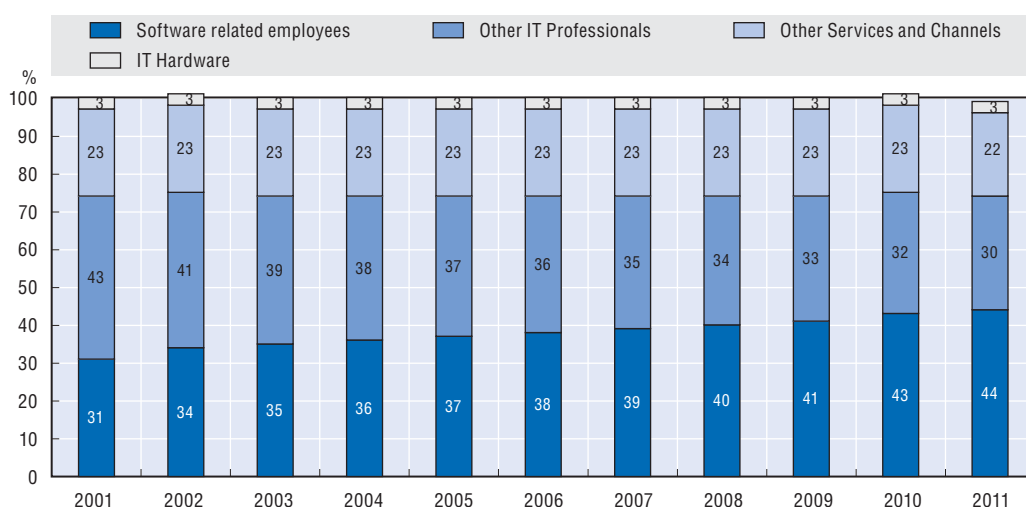
5.2. Relatively low labour costs

The Western Balkans is particularly competitive in labour costs, above all compared to its CEE neighbours (Figure 3.12).

5.3. Proximity advantages

Many potential client firms, especially in Europe, are just beginning to use service outsourcing. Although worldwide telecommunications are instantaneous, these firms often consider easy access to the CEE or to the Western Balkans region as one of the main selling points for relocating certain activities. The Western Balkans region has regular and reliable flights to Western Europe (Table 3.4). Belgrade is only two hours from Frankfurt and

Figure 3.11. IT related employment per segment in SEE



Source: IDC, 2007.

Table 3.3. Key figures
for the IT/software development segment
in the Western Balkans

Market size (€ million)	1 300
Market growth (2006-08)	25%
FDI (inward flow, € million)	40
Exports (€ million)	75
Employment	55 000
Number of firms (estimates)	8 000

Tirana is only three hours from London. This is in contrast to an approximately nine-hour flight from Mumbai to Western Europe.

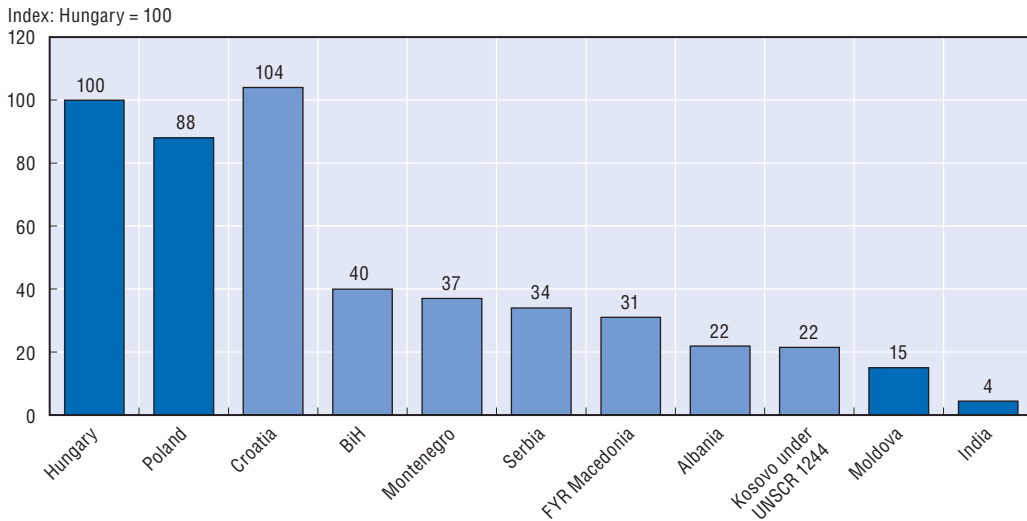
5.4. Emerging capabilities that need further improvement

5.4.1. Languages

Students in the Western Balkans are relatively proficient in English. The results of the TOEFL exam¹⁰ for Croatia and Serbia show that students in both countries have strong English language ability, especially when compared with those in countries with which they might be competing in the BPTO sector. Croatian students score high on the entire English exam, particularly listening. They are just one point behind India with respect to the average total TOEFL score. Serbia scores somewhat lower, although its students' ability is in line with that of Brazilian or Russian students and significantly higher than that of Chinese students (Table 3.5).

According to the results of the Regional Capability Survey (RCS), almost 45% of back office services, call centre and software development firms consider the English language skills of their staff to be adequate for their business operations. Only one-third of firms feel that there is room for minor improvement in their staff's English language skills, and only about one-tenth of firms consider that there is room for significant improvement.

Figure 3.12. **Index (100 = Hungary) of average monthly labour costs in services (2005)**



Note: Monthly wages calculated as a 2003-05 or 2003-06 average, using the LABORSTA Labour Statistics database for financial intermediation, business activities, real estate and renting activities. Data for Albania is based on wages in transport, storage and communications. Data for India is based on average monthly wages for all services.

India and Moldova are included in Figure 60 for comparison. It should be noted that India has been experiencing wage inflation at 15-18% per year on certain professional service functions.

Source: OECD analysis based on LABORSTA (ILO).

Table 3.4. **EU flight destinations**

City	Destinations
Tirana	Athens, Bergamo, Bologna, Budapest, Cologne, Cuneo, Florence, Forli, Frankfurt, Genoa, Ljubljana, London, Milan, Munich, Parma, Perugia, Pisa, Rimini, Roma, Sofia, Treviso, Trieste, Turin, Verona, Vienna
Sarajevo	Ancona, Budapest, Cologne, Frankfurt, Ljubljana, London, Munich, Rygge, Vienna
Zagreb	Amsterdam, Brussels, Budapest, Cologne, Dortmund, Düsseldorf, Frankfurt, Lisbon, London, Munich, Paris, Prague, Rome, Stockholm, Stuttgart, Vienna, Zurich
Skopje	Amsterdam, Berlin, Budapest, Copenhagen, Düsseldorf, Hamburg, Ljubljana, Milan, Paris, Prague, Rome, Vienna, Zurich
Podgorica	Brindisi, Budapest, Frankfurt, Ljubljana, Naples, Oslo, Paris, Rome, Zurich
Belgrade	Amsterdam, Athens, Berlin, Brussels, Cologne, Copenhagen, Düsseldorf, Frankfurt, Gothenburg, Larnaca, Ljubljana, London, Malta, Milan, Munich, Oslo, Prague, Rome, Stockholm, Stuttgart, Trieste, Vienna, Zurich
Pristina	Berlin, Budapest, Cologne, Copenhagen, Düsseldorf, Frankfurt, Geneva, Hamburg, Ljubljana, London, Munich, Stuttgart, Verona, Vienna, Zurich

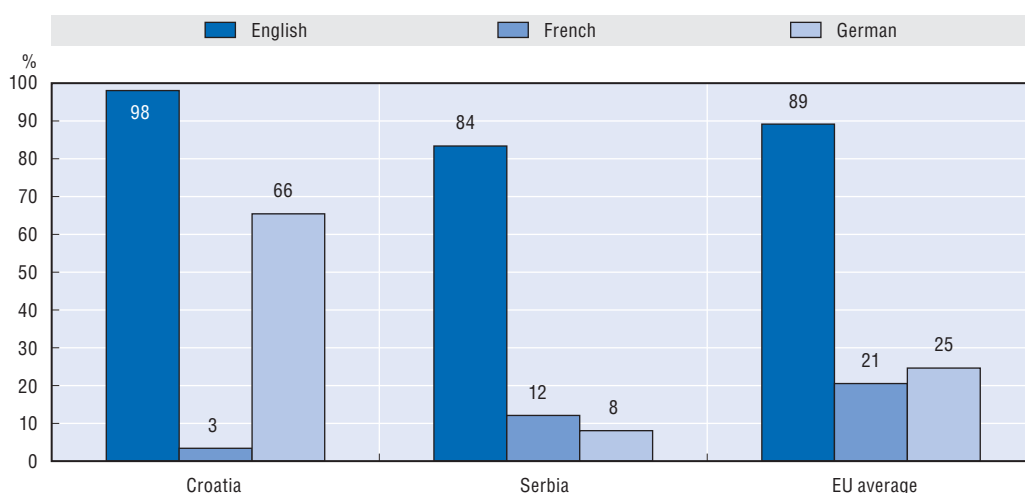
Source: www.tirana-airport.com; www.sarajevo-airport.ba; www.zagreb-airport.hr; www.airports.com.mk; www.montenegro-airports.com; www.airport-belgrade.co.yu; www.airportpristina.com

Not only do the Western Balkan economies have strong English language skills, but students often learn other European languages, especially German (Figure 3.13). Western European countries are therefore an under-exploited BPTO market, and proficiency in German gives many firms in the Western Balkans a competitive advantage over other BPTO providing countries, including India and China (where knowledge of European languages beyond English is minimal). Over 60% of school children in Croatia learn German. While official data is not available on the number of Albanians who speak Italian, anecdotal evidence suggests that the level of Italian spoken by many people in that country is very high.

Table 3.5. **Average cross-country TOEFL scores**

	Total	Reading	Listening	Speaking	Writing
India	91	22	23	23	23
Hungary	90	22	24	22	22
Croatia	90	22	24	23	22
Czech Republic	88	20	23	23	21
Brazil	85	21	23	21	21
Russia	85	20	23	22	21
Serbia	84	19	23	21	20
Ukraine	83	19	22	22	20
China	76	20	19	18	20

Source: ETS (2007)

Figure 3.13. **Pupils learning English, French and German in Croatia, Serbia and the EU (%)**

Source: Eurostat, Statistical Office of the Republic of Serbia.

According to the RCS results, there is further room for improvement in German, French, Italian and Russian. Although roughly one-half of respondents consider that their staff's knowledge of these languages is adequate for their firm's business objectives, one-quarter to one-third consider that lack of fluency in these languages represents a significant barrier to improving their operations (Table 3.6). European languages in addition to English are taught, but most students do not obtain the same level of fluency in these languages as in English. It should be noted that while these languages might not be spoken fluently, the fact that they are taught and spoken at all indicates a basic level of proficiency which can be improved upon.

Table 3.6. **Gaps in staff language abilities in the Western Balkans (%) (2008)**

	English	German	French	Italian	Russian	Other
No gap	44.79	46.88	54.17	56.25	53.13	53.13
Minor gap	36.46	12.50	6.25	10.42	8.33	3.13
Major gap	12.50	32.29	31.25	25.00	28.13	6.25
No response	6.25	8.33	8.33	8.33	10.42	37.50

Source: OECD RCS (2008).

5.4.2. Cultural understanding and soft skills for call centres

The Western Balkan region shares a wide spectrum of history and cultural understanding with Western European countries. This facilitates communication with clients, whose signals, intentions and objectives can be better interpreted. For example, Western Balkan university students often participate in study abroad programmes or study full time in Western Europe. In 2006, 6.6% of all Western Balkan university students studied in one of the EU-15 countries and 8.4% studied in one of the EU-27 countries. The most popular locations were Italy, Germany and Austria (Table 3.7).

Table 3.7. **Most popular destinations for Western Balkan students studying abroad (2006)**

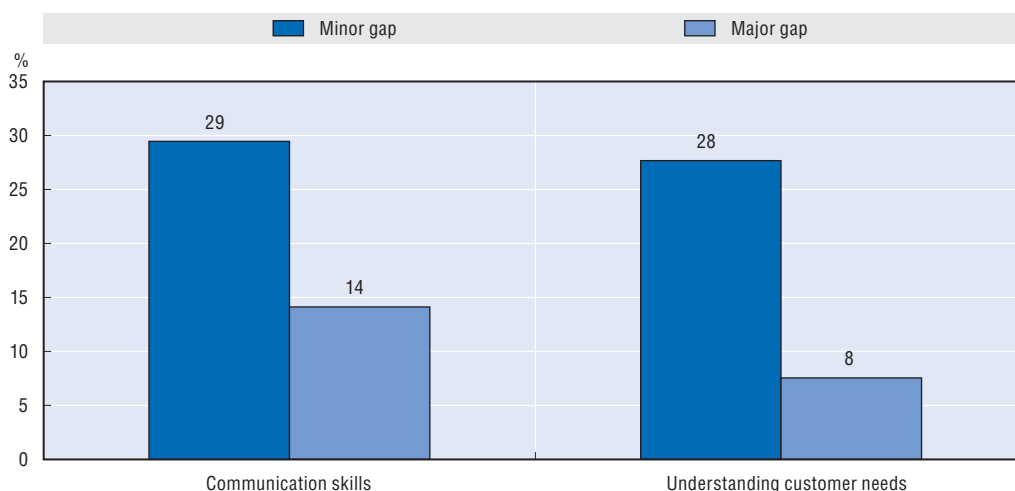
	Albania	Bosnia and Herzegovina	Croatia	The Former Yugoslav Republic of Macedonia	Serbia and Montenegro
Italy	10 959	310	1 334	234	1 014
Germany	701	2 950	4 955	850	3 327
Austria	164	2 392	1 188	225	1 159
Bulgaria	192	22	6	3 638	345
Greece	2 652	32	9	38	152
United Kingdom	483	213	407	207	901
Turkey	620	555	15	329	225
Switzerland	197	203	337	165	692
Hungary	16	11	191	6	1 163
France	444	160	135	126	518
Slovenia	6	220	598	147	140
Romania	246	1	1	118	283
Sweden	22	207	96	25	188
Norway	19	199	71	157	0
Spain	38	96	69	71	64

Source: Eurostat.

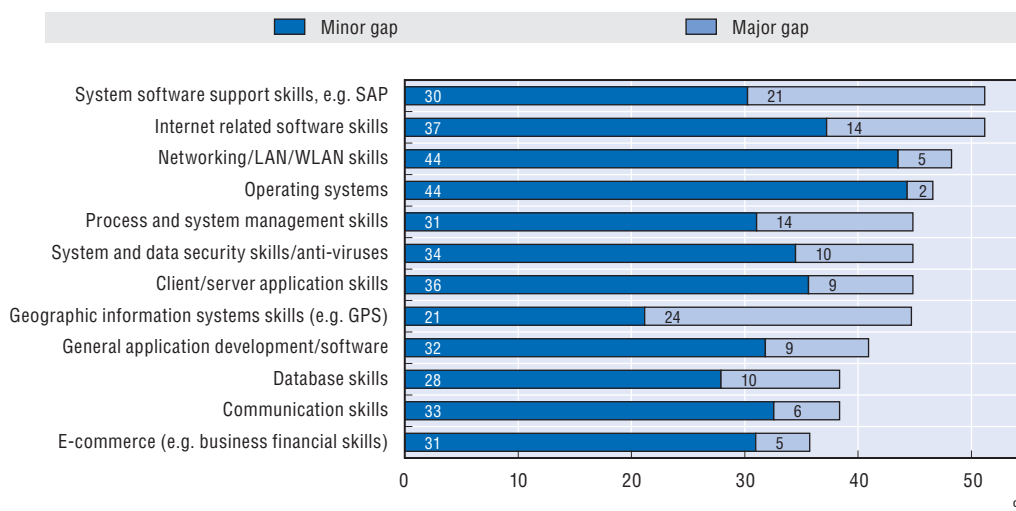
Despite strong ties with Western Europe through many study abroad programmes, the RCS results indicate that there is still scope for BPTO firms in the Western Balkans to improve cultural understanding and other soft skills, especially with respect to back office services and call centres. Of the firms surveyed, 35% indicated that their staff's understanding of customer needs was either partially or significantly lacking. For 43% of firms, there was a minor to major gap in their staff's communication skills (Figure 3.14).

5.4.3. Growing but still limited technical skills for software development and back office services

There seems to be a severe lack of technical skills in Western Balkan software development firms. Lack of skilled resources and qualifications was cited by 57% as their top challenge. This is especially the case for those positions that most need to be filled, such as project managers, application developers and multimedia designers and developers. While only a few firms reported a major gap in technical expertise, over half considered that there was a minor to major gap in internet related software skills and system software support skills. Significant skills gaps were also identified in networking/LAN/WLAN skills and operating systems (Figure 3.15). Western Balkan BPTO firms also identified a major gap in the problem solving skills of their employees: 18% felt there was a major gap and 34% that there was a minor

Figure 3.14. **Perceived gaps in soft skills in Western Balkan BPTO firms**

Source: OECD RCS (2008).

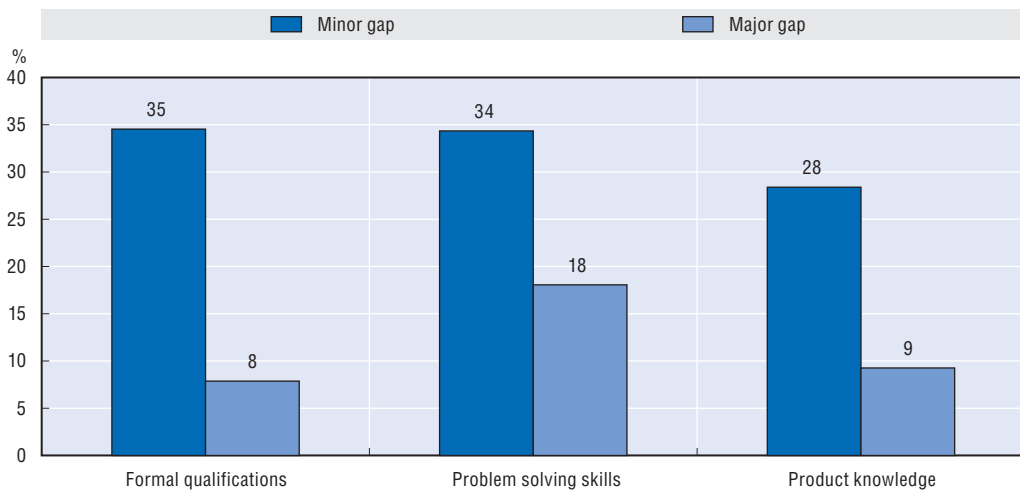
Figure 3.15. **Priority gaps in technical skills in software development companies**

Source: OECD RCS (2008).

one (Figure 3.16). This means that over half of all firms have a minor to major gap in their staff's problem-solving skills.

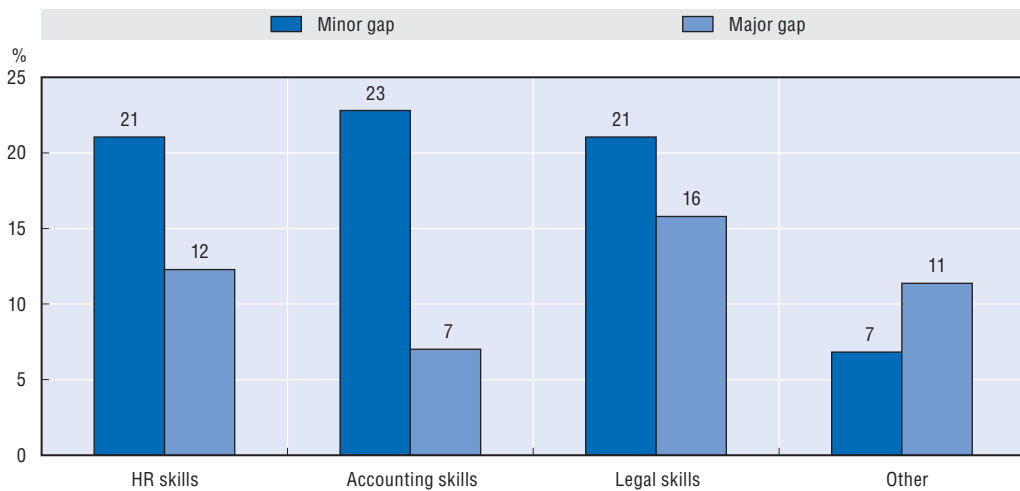
Software development firms across the Western Balkans need to continuously improve the technical skills of their staff. Even in Croatia, one of the region's most technologically advanced economies, there is a skills shortage. This means hiring and nurturing employees with problem solving and analytical skills, as well as with actual experience involving equipment, software and the industry or business processes in which the firm specialises.

Despite the lack in technical skills, according to the RCS results, few software development firms in the region consider the formal qualifications of their staff to be a serious problem: only 8% identified them as such. Product knowledge on the part of staff appeared not to be lacking, with only 9% of firms considering it a serious problem.

Figure 3.16. **Perceived gaps in hard skills**

Source: OECD RCS (2008).

There also appears to be no lack in technical skills for firms providing back office services: when asked about gaps in technical skills, back office outsourcing firms specialising in human resources, accounting or legal skills did not consider these skills to be lacking (Figure 3.17).

Figure 3.17. **Gaps in technical skills in BPTO firms specialising in back office functions**

Source: OECD RCS (2008).

6. Regional strategy

For future growth in the BPTO sector in the Western Balkans, both operational and policy changes need to be made. On the operational side, firms should specialise and focus on EU markets. On the policy side, the government should address gaps in human capital, upgrade ICT infrastructure, decrease social charges and target investment promotion activities at global BPTO providers.

6.1. Operational recommendations

6.1.1. Focus on EU markets

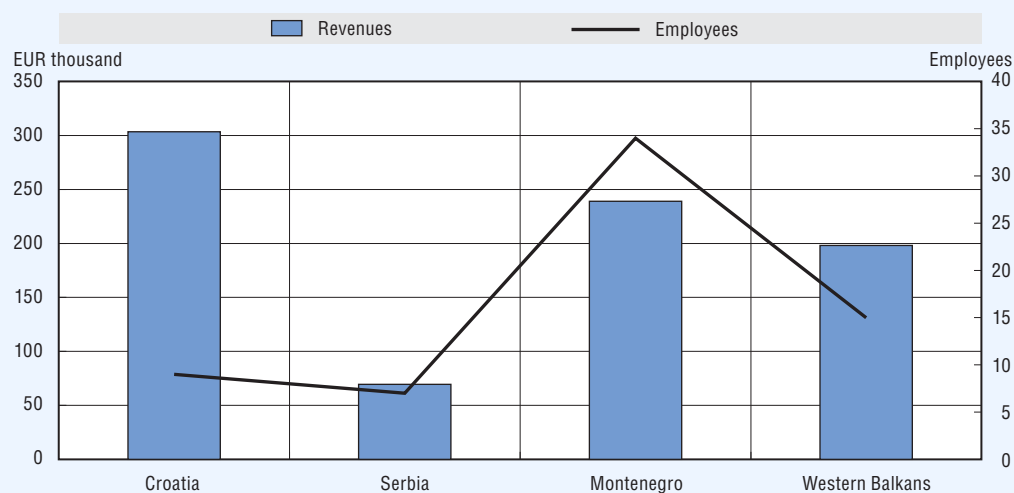
Western Balkan BPTO firms would be wise to leverage their proximity advantage through nearshoring, including targeting the regional market and Central and Eastern Europe. They should pay particular attention to countries in which they have strong language skills, including France, Germany and Italy.

Box 3.3. A fragmented sector

Both software development and BPO (back office services and call centres) firms have relatively low revenues and numbers of employees per company to be able to compete effectively at the global, regional or even national level. Average sales of such companies in the region are about EUR 200 000 and average employment is just 15 employees (see figure below).

This high level of fragmentation makes it difficult for firms to compete for large tenders, limits access to capital and provides them with fewer opportunities to recruit qualified staff. However, anecdotal evidence suggests that firms are beginning to consolidate. For example, the Serbian ComTrade Group has recently acquired Hermes Lab, a Slovenian company based in the Western Balkans region.

Figure 3.18. **Western Balkan BPTO firms: revenues and employment**



Source: OECD RCS (2008).

6.1.2. Specialise

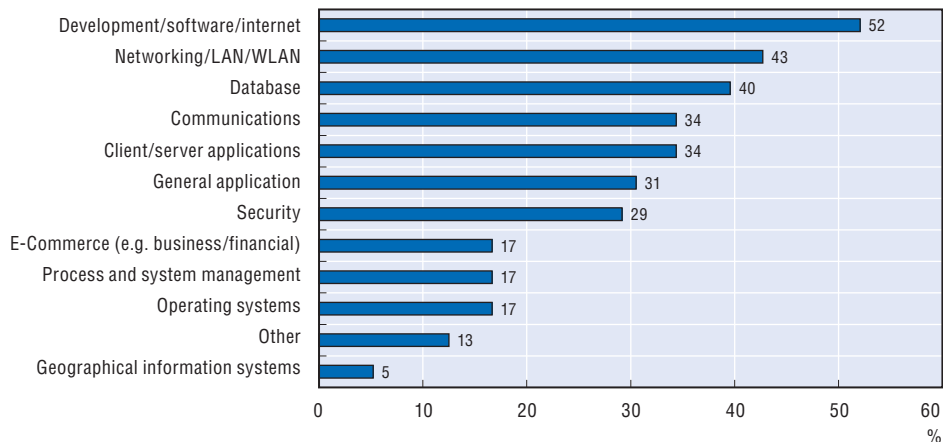
To go beyond cost competitiveness, there is also a need to specialise. Specialisation has been shown to increase productivity, allow firms to set higher prices and facilitate building an international network of clients. The findings of the OECD analysis suggest that BPTO firms in the Western Balkans should carve out their own niches and implement a more targeted strategy concerning where and how to compete.

For software development companies, there is a need to focus further on industry expertise and shift towards solutions as opposed to programme offering. Specifically, expertise in the apparel manufacturing and automotive sectors could be valuable.

Firms offering back office services and call centres should begin by focusing on large or high-growth segments like financial services and mobile telecom. Providers of back office services and call centres should also have a few niche offerings in high-demand areas like collection of accounts payable, sales and marketing support, technical call centres and remote security database administration

A first step would be to strengthen existing capabilities. The RCS collected data on the main applications or services of IT firms in the region. On average, these firms specialised in four main outsourced services. The ones most frequently offered to clients included software development, networking expertise and database development (Figure 3.19).

Figure 3.19. **Outsourced services provided by Western Balkan IT firms**



Source: OECD RCS (2008).

Specifically, based on the RCS results and OECD interviews with international and local firms, the following is required:

- For software development, knowledge of sector/technical specific applications is needed, including Enterprise Resource Planning (ERP) and Vendor Managed Inventory (VMI). Knowledge of key software languages such as PHP, SQL, Ajax and XML is also essential.
- For back office services, knowledge of accounting standards is needed, including International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP) as well as appropriate legal codes, e.g. the Code Napoléonien.
- For call centres, in addition to enhancing existing capabilities, a further focus should be put on languages such as German and French.

6.2. Policy recommendations

6.2.1. First address gaps in human capital

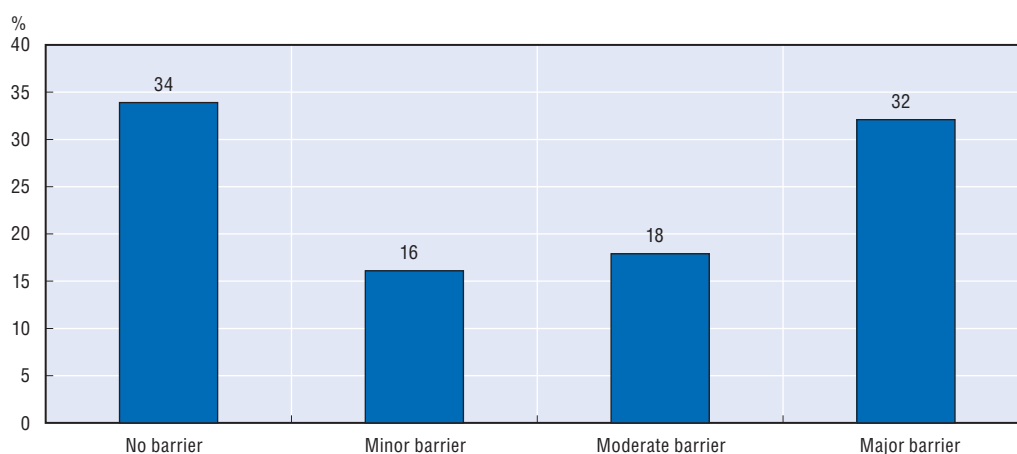
The key area identified as a policy barrier by the RCS results is the general gap in availability of skills throughout the Western Balkans. Firms need to do more to ensure that they have fostered both the soft and hard skills of their employees. By the same token, governments in the region should ensure that there is a constant increase in the skills of its workforce. Of the BPTO firms surveyed, 52% considered the skills and education of available employees to be a barrier and 70% considered education and training to be one of the key policy issues needing to be addressed (Figures 3.20 and 3.21).

Box 3.4. Leapfrogging technology

Improvements in ICT infrastructure and technological developments create the possibility for developing countries with poor connectivity to leapfrog earlier stages of technological progress. For example, wireless local area networks (WLAN) are an inexpensive technology allowing both telephony and high-speed internet, and a less expensive alternative to wireline broadband (OECD, 2005).

Although mobile ICT is still at an early stage for services, the Western Balkan economies can move directly into the latest technologies, as was the case in Croatia with the introduction of 3G and WiMAX. In addition, the transition to Web 2.0, open source and new research in the field of web engineering offer promising avenues for new entrants to apply “systematic, disciplined and quantifiable approaches to the cost-effective development and evolution of high-quality solutions in the World Wide Web” (International Society for Web Engineering, 2006). Thus, innovative companies can invent new business models. This new approach to user-generated content offers opportunities for niche players in the Western Balkans, such as GISData in Croatia, to develop and commercialise new solutions, building on speed and fast propagation.

Figure 3.20. **Human capital policy barriers**



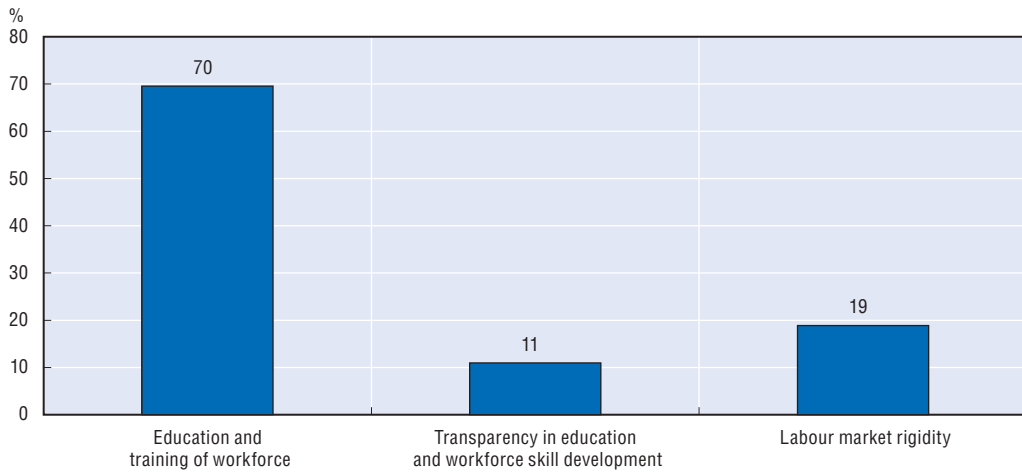
Source: OECD RCS (2008).

It is estimated that in the period 1995-2005 up to 70% of skilled professionals in the Western Balkans emigrated (UNESCO, 2005). According to software development companies surveyed by the OECD, the two most important reasons for difficulty in filling vacancies in the region are lack of appropriately skilled workers (Figure 3.22).

The discrepancy between the supply of skilled employees and demand by companies is negatively impacting competitiveness. This is especially true in software development firms, which are suffering from increased costs, lower service quality, loss of business and lower operating efficiency (Figure 3.23).

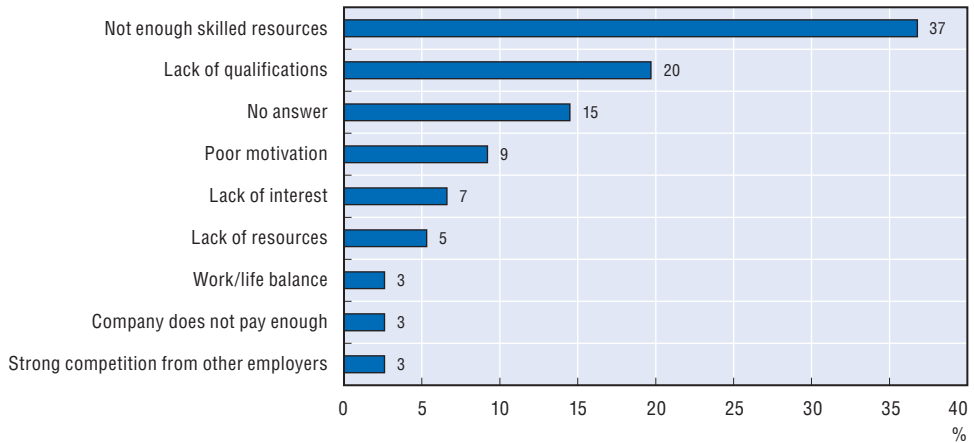
To address this gap and move up the value chain, there is a need to invest in both the quality and quantity of human capital through private sector involvement and more tailored educational programmes.

Figure 3.21. **Key issues concerning human capital policy**



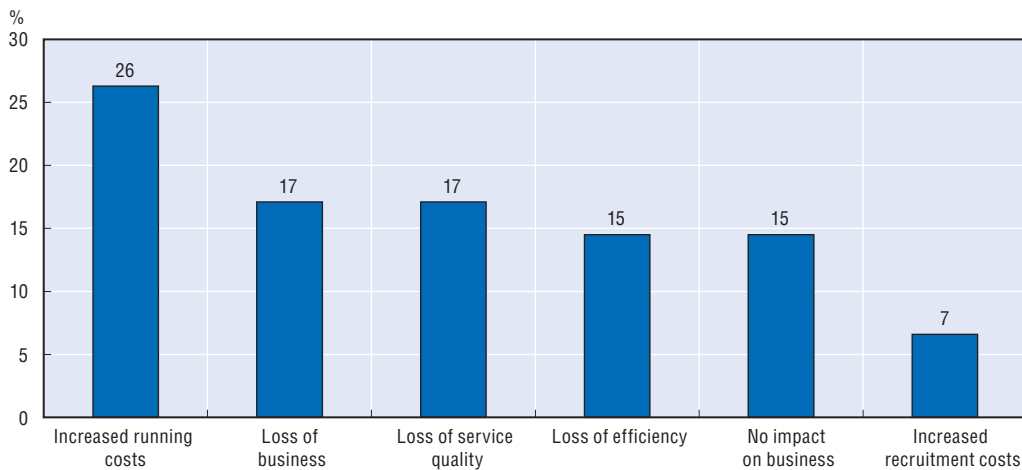
Source: OECD RCS (2008).

Figure 3.22. **Reasons for difficulty in filling vacancies**



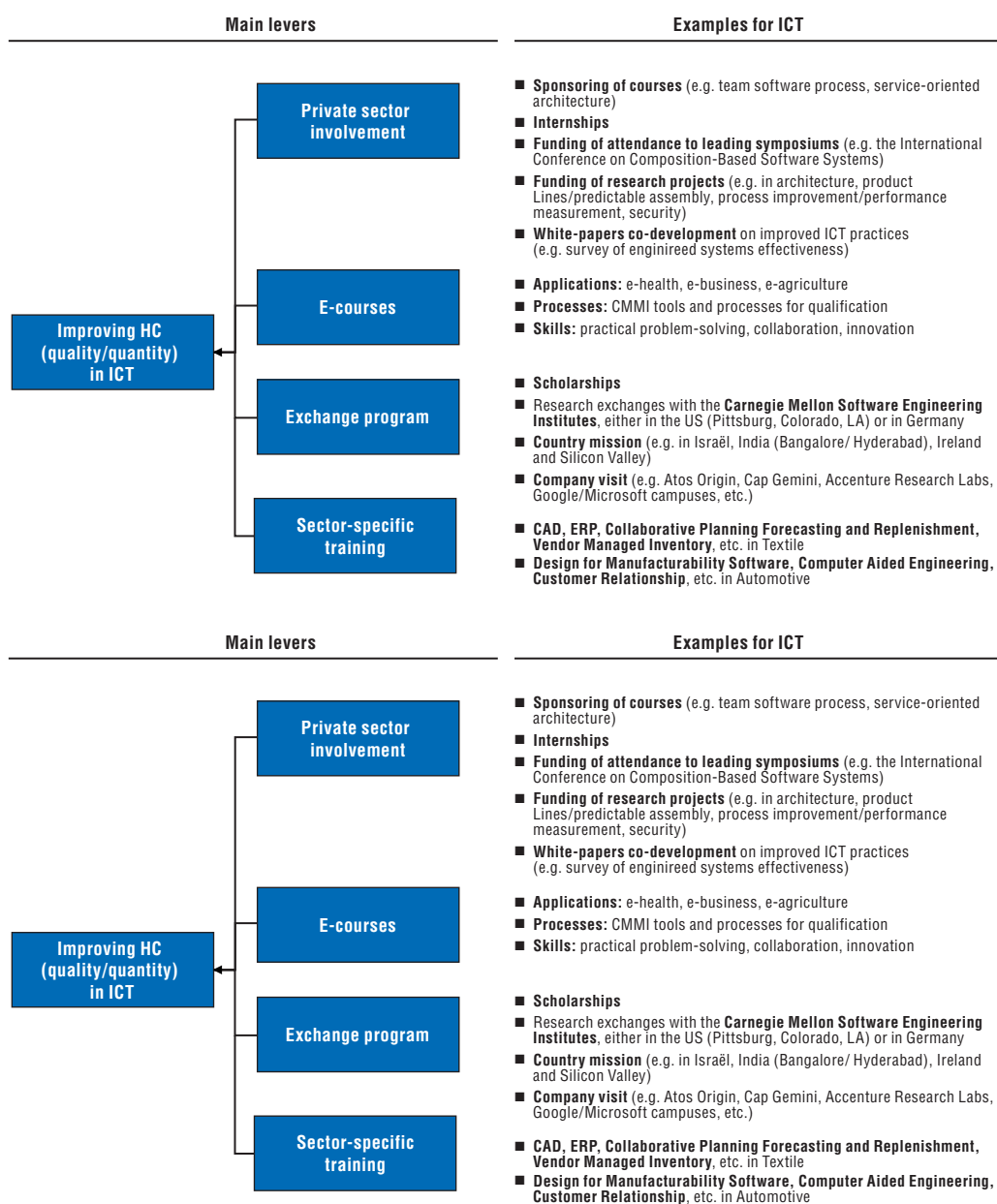
Source: OECD RCS (2008).

Figure 3.23. **Impact of skills gaps on software development firms**



Source: OECD RCS, 2008.

Figure 3.24. **Approach to improving software development and back office and call centres education involving the private sector**



In the software development segment, problem solving skills and specific knowledge of software and/or hardware are needed. This segment requires constant technology upgrades, making skills learned only a few years earlier no longer relevant.

To address this gap, policy makers should involve academia and the private sector further at three levels:

- Pre-employment by, for example, offering of internships, sponsoring university courses¹¹ and exchange programmes and sponsoring projects with foreign vendors and universities.

- During –employment, through company training including sector/technical-specific training, e.g. Code Naoléonien, IFRS and GAPP. E-courses should be leveraged as much as possible during employment.
- During unemployment, through the use of functional e-courses such as new product development processes and steps toward obtaining relevant licenses for setting up a business or getting a patent.

Medium-term requirements should focus on more structural reforms including the establishment of a human capital co-ordination team within each country, bringing together key decision-makers from the ministries of education, emigration, labour and economy as well as the private sector and civil society. Secondly, analytical tools should be developed to evaluate skills gaps, especially in knowledge-intensive BPTO niches. Thirdly the labour market should better favour the entry of new people on the market and the development of skills through the co-operation of the public and private sectors.

Policy makers should act to increase the number of graduates in IT and in the languages needed by outsourcing companies. For example, the state quota in The former Yugoslav Republic of Macedonia is about 400 for IT, against a demand estimated at 800 by the MASIT, Macedonian National ICT Association.

Finally, and most importantly, policy makers and the private sector should consolidate efforts at the regional level to cement sub-critical BPTO players and build regional champions. Practically speaking, this could be done through regional/cross-border clusters. In parallel, regional education could be envisaged (Figure 3.25).

6.2.2. Upgrade ICT infrastructure

ICT infrastructure is another important policy area on which the Western Balkan economies need to focus in order to sustain a competitive BPTO sector. The phenomenon

Figure 3.25. **Successful regional educational models: CEMS and TIME**

CEMS Community of European Management Schools	TIME Top Industrials Management Europe
<ul style="list-style-type: none"> • CEMS is a strategic alliance of leading business schools and multinational companies • 26 world-class academic institutions (17 full members and 11 associate members) <ul style="list-style-type: none"> - E.g. HEC Paris, London School of Economics, Copenhagen Business School • 57 corporate partners to offer international internships opportunities and inputs from the private sector <ul style="list-style-type: none"> - E.g. Michelin, McKinsey, SG, ING, JP Morgan • Promotes high-quality business education • Produces graduates who are able to work in many cultures • 6 months to ramp-up • Lean infrastructure funded by each university 	<ul style="list-style-type: none"> • TIME is a network of 51 leading engineering schools and faculties and technical universities <ul style="list-style-type: none"> - Technische Universität Wien, Ecole Centrale Paris, Ecole Nationale des Ponts et Chaussées • Voluntary bilateral agreement between members • Offers promotion and recognition of academic excellence <ul style="list-style-type: none"> - Double degrees in engineering and a related field - Students are chosen from among the best in their respective universities, studying between five and six years, and are awarded two Masters-level degrees from two different countries at the end of their study • Promotes high quality engineering education • Produces graduates who are able to work in many cultures

Source: OECD interviews.

of digital integration has significantly increased the possibility to develop new products and services and has created new market niches. In addition, new technologies for mobile data transfer, such as 3G.5 and WiMAX, require investments in ICT infrastructure.

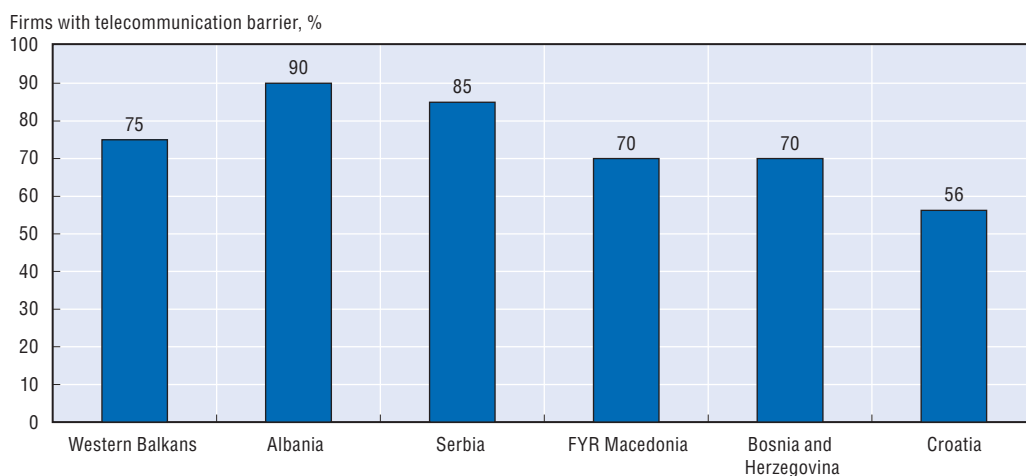
The need to modernise, adopt EU standards and provide public administrations with updated equipment is an important driver for IT spending in the region, accounting for more than half of resources spent. Thus most such investment was in hardware rather than in software and IT services in the period 2005-07 (IDC, 2007).

The region should benefit from a catch-up effect as ICT infrastructure in all of the Western Balkan economies becomes more developed. Related reports indicate that while Croatia has reached and even surpassed the level of some EU countries,¹² and Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia and Serbia have fairly well developed infrastructure in the major cities, peripheral areas tend to lag behind in those countries.

The most critical situation in the Western Balkans, in terms of quality of infrastructure, is in Albania and in Kosovo under UNSCR 1244. These two economies are still unable to provide minimal conditions for an ICT company, e.g. 24-hour internet access with 1 Mbps Optical Fibre Leased line (network) connection extensible to 2 Mbps, 256 Kbps line for VoIP, 128 Kbps ISDN backup, as well as support for disaster recovery processes with back-up of client data, back-up management, and physical back-up of data maintenance in secure locations outside the premises. But these countries could turn this disadvantage into an opportunity. They are in a good position for leapfrogging and for focusing on the most advanced mobile technologies.

The RCS results show that BPTO firms consider that there is room to improve in almost all the region's economies with respect to ICT infrastructure, particularly telecommunications (Figure 3.26).

Figure 3.26. **Telecommunications as a barrier to the operations and growth of BPTO and ICT companies**

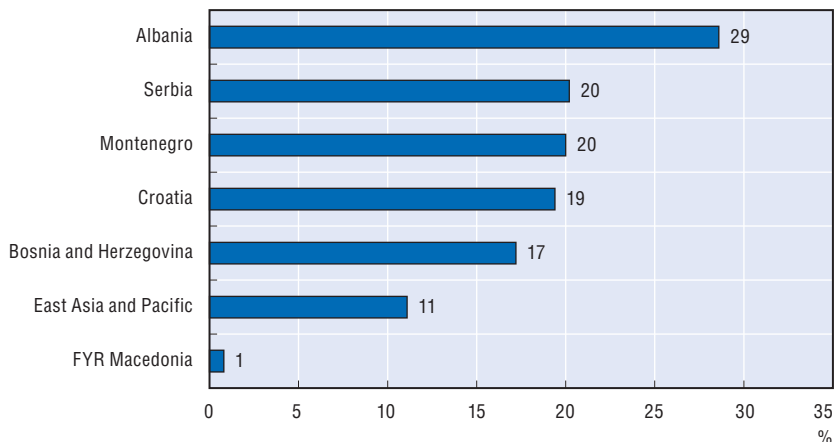


Source: OECD RCS (2008).

6.2.3. Reduce social charges

One key problem identified by the RCS results is high social security contributions. During interviews, firms largely identified social charges as one of the most burdensome types of tax. Since the BPTO sector is very labour intensive by definition – it uses the intellectual knowledge of its workforce to perform services – it is understandable that this is seen as such a problem. World Bank *Doing Business* estimates of non-wage labour costs for the region are 18% of gross salaries. While this figure is in line with or even lower than in many OECD countries, it is much higher than the East Asia and Pacific average of 11% (Figure 3.27).

Figure 3.27. **Social charges as a percentage of gross wages**



Source: World Bank (2007).

While it should be recognised that social security and other employer paid payroll taxes contribute to needed public services and health care, in labour intensive industries such as BPTO current levels are reducing the competitiveness of Western Balkan firms. Countries might consider lowering these contributions as a short term solution to maintaining competitiveness taking into consideration general fiscal sustainability.

6.2.4. Target investment promotion activities at global BPTO providers

Investment promotion activities in the BPTO arena should first target global BPTO providers, especially with respect to value-added services, knowledge transfer, innovation and capability building. Prime targets should be European grown or based sector leaders already present in the region. Several IT and business outsourcing service providers have established capabilities in Poland (*e.g.* IBM, EDS, Capgemini), the Czech Republic (*e.g.* Accenture, SAP), Hungary (*e.g.* Tata, Convergys) and Romania (*e.g.* Genpact, Wipro).

7. Country specific recommendations

7.1. Albania

7.1.1. Sector overview

The BPTO sector has not yet been developed in Albania. The country has relatively developed infrastructure, but still lags behind its neighbours in the Western Balkans.

Albania's main advantages are its proximity to Puglia, a southern Italian region where many Italian firms have established call centres and the high level of Italian language skills. However, it should be noted that the labour force's general fluency in Italian would need to be improved for Albania to compete effectively with its main competitor, Romania, where Italian companies have already established their presence in terms of offshoring.

An example of Italian investment in the BPTO sector in Albania is the company Answers Group, a business services company serving firms and public administrations in Italy. It has co-operated with a local Albanian start-up and created the firm IDS to provide call centre services to Italy. Answers Group reroutes around 4 000 calls per week to IDS and plans to increase the traffic volume considerably. Therefore, it anticipates supporting or directly realising the creation of a 50-workstation call centre. The main requirements for investing are considered to be: hiring and training around 150-200 people able to speak Italian perfectly; and finding a convenient way to manage voice and data traffic between Albania and Italy. The possibility of directly creating a training school in Albania is being considered in Answer Group's attempt to respond to the need for human resources training (UNDP, 2007).

The ICT sector in Albania lags behind the regional level. The penetration rate for fixed telephones is only 39%, compared with more than 95% in Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia. The only country in the region with a lower penetration rate is Kosovo under UNSCR 1244, at 26.9% (UNESCO, 2005).

Basic ICT infrastructure is underdeveloped, compared with the situation in most other European countries. According to a World Bank study, access to telephone lines is still lower than the average in Europe and Central Asia, although it increased from 50 to 88 people per 1 000 between 2000 and 2005, (World Bank, 2007b). The situation is similar with respect to mobile subscribers. Despite a huge leap in the number of such subscribers, this is still well below the level in other countries in Europe and Central Asia (Table 3.8).

Table 3.8. ICT sector performance in Albania

	Albania		Europe and Central Asia	
	2000	2005	2000	2005
Telephone main lines (per 1 000 people)	50	88	205	273
Mobile subscribers (per 1 000 people)	10	405	306	34
Population covered by mobile telephony (%)	84	90	n.a.	624
Internet users (per 1 000 people)	1	60	95	
Personal computers (per 1 000 people)	8	12	45	190
Telephone faults (per 100 main lines per year)	70.2	57.2	25	15.7

Source: World Bank (2007).

The biggest lag is in internet usage and in personal computers per 1 000 people. The reliability of IT infrastructure is also critical, with telephone faults per 100 lines higher than in the compared region.

7.1.2. Challenges and policy barriers

The growing number of accountants, lawyers and HR consultants in Albania are mainly focused on domestic markets. They could become active in business process services provided their orientation changes towards external markets, which could stimulate the BPTO sector.

In the ETF report *Albania Country Analysis 2006*, the lack of skilled and educated workers, coupled with a weak educational system, are indicated as among the major challenges with respect to Albania developing its economy and enhancing production capacities for higher value-added products. Outdated curricula and a lack of trained and motivated teaching staff at all levels of education impact the quality of the learning process and the acquisition of business relevant skills (ETF, 2006a).

Apart from the apparent need to further invest in ICT, as well as in basic infrastructure,¹³ the critical area for the development of the software development sector in Albania is the quality of the IT labour force. Due to the lack of financial means, there is also a lack of adequate technological means to provide businesses with relevant knowledge and technical (but also soft) skills. Proficiency in English also needs to be improved.

7.1.3. Policy recommendations

To benefit from the Italian language advantage, there is a need, in the short to medium term to invest in human resources in order to create the right kind of skills for developing and consolidating Albania's competitive advantage in the future. Closer linkages between the Italianistics faculty in Tirana and other training institutions with the local and foreign-based private sector (including Albinvest) should be developed.

It is necessary to develop educational programmes aimed at training people for the services sector in order to provide the relevant set of skills. In the short term, the Albanian BPTO sector would benefit from immediate training to provide staff able to speak Italian perfectly, who could be employed by call centres, an area for which there is potentially high demand from Italian companies.

Promoting and marketing the Albanian BPTO sector in Italy and other countries should take place on a regular basis, *e.g.* through publishing brochures on the Albanian BPTO sector, organising visits to companies, and bringing potential investors to Albania.

The ICT sector needs to be supported by improving the quality and accessibility of infrastructure throughout the country. As mobile technology is still at an early stage for services, Albania could leapfrog directly to the latest technologies. This could be done by leveraging public/private partnerships to support the creation of high quality infrastructure.

Government commitment to improve the quality of education should be supported with adequate resources to increase the quality of higher education through providing skills, ICT competency and practical advanced knowledge of benefit to Albanian students in real business life.

Albanian IT companies should be encouraged to co-operate and network with other companies in the Western Balkans, as this would enable them to enlarge their market (especially in regard to Kosovo under UNSCR 1244) and transfer knowledge, skills and technology to their operations. Moreover, IT companies need to develop closer linkages between themselves and vertical industries as a means of conceptualising and delivering advanced ICT solutions.

Summary of key recommendations

1. Further develop the use of investment promotion events to promote, including in Italy and Switzerland, the capabilities of Albanian back office services and call centres.

2. Improve the quality of education by including IT education in curricula at all levels and modernising secondary and graduate level education to develop ICT core competencies, soft skills and practical advanced knowledge relevant to industries' demands.
3. Develop a network of excellence involving back office services, ICT companies, universities and key vertical industries to ensure the transfer of technical knowledge, skills, technology and business processes to IT students and professionals.
4. Support participation in regional IT events and conferences, in order to create linkages with other IT companies and associations in the Western Balkan region.
5. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript.
6. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development.
7. Speed up the development of accessible and reliable ICT infrastructure, possibly based on wireless communication.

7.2. Bosnia and Herzegovina

7.2.1. Sector overview

The BPTO sector in Bosnia and Herzegovina remains relatively underdeveloped. Possibilities to invest in this sector mainly exist in the information technology segment, reflecting the presence of dynamic local IT firms. Still, some positive examples point to the potential for other segments of the BPTO sector in Bosnia and Herzegovina.

International companies have recognised the potential of the country's BPTO market. KPMG is an example of a company that has already established a captive centre. It employs 25 people and provides audit, tax and financial advisory services, using the company's international standards.

The IT sector in Bosnia and Herzegovina is developing in all its segments, with new companies being started, new people being employed, and new products and services being introduced. Firms are shifting the focus from "box moving" and hardware sales to software development and provision of services, especially through localising world brand software products (*e.g.* Microsoft, Oracle, SAP).

The IT market in Bosnia and Herzegovina was estimated at EUR 105 million in 2007, with annual growth of 6% to 9%.¹⁴ The fastest growing segment is software development and related services (BAIT, 2006). According to the Bosnian Association for IT, Bosnia and Herzegovina had more than 2 500 IT firms in 2005, with more than 5 000 employees. Approximately 70% of IT companies are local and the others belong mainly to firms representing international companies. The majority of IT firms (36%) have up to five employees, while only a few (3%) have 50 to 100 employees. The average number of employees in an IT firm was about 20 in 2006, compared to 12 in 2004 (BAIT, 2006). The biggest IT company, apart from the telecom sub-sector, is Hermes Softlab d.o.o., a subsidiary of a regional software development company based in Slovenia. The client structure is shifting from a focus on the state and the international community to private sector companies, which are primarily based in the country.

7.2.2. Challenges and policy barriers

Lack of employment and development opportunities and the low level of economic activity in the years after the war led to a decline in quality on the supply side of the labour market. Today there is increased participation by young people in education and training, often assisted by foreign aid. Although widespread skills gaps do not yet exist, there are specific shortages of and general concern about basic skills, partly concealed by low levels of demand in the formal economy.

The educational attainment levels of the population 25-65 years of age lag behind those in the EU, with a higher percentage that have low levels of education and a lower percentage that have higher levels (Table 3.9).

Table 3.9. **Educational attainment rate of the population aged 25-65 (2002)**

	Low	Medium	High
Bosnia and Herzegovina total	41.8	47.4	10.8
EU-15	35	43	22
New EU Member States	19	66	19

“Low” = primary education or less (ISCED levels 0-2); “medium” = secondary or post-secondary non-tertiary education (ISCED levels 3 or 4); “high” = tertiary education (ISCED levels 5 or 6).

Source: LSMS, ETF calculation, Eurostat.

Despite a lack of data on the technical skills mismatch, employers in Bosnia and Herzegovina stressed a significant lack of soft skills, such as teamwork and a positive attitude to work (ETF, 2006b). A 2004 labour market survey by the Employment Service of two administrative entities in Bosnia and Herzegovina, in the Republika Srpska and in the Federation showed that 31.5% of enterprises interviewed required workplace skills and only 10% required specific skills and knowledge (ETF, 2006b).

With respect to software development, the main challenges consist in the fragmentation of IT companies and the lack of an adequate labour force, both in number and quality. Gaining technological expertise, and finding and training IT workers, remain top challenges for increasing competitiveness (BAIT, 2006).

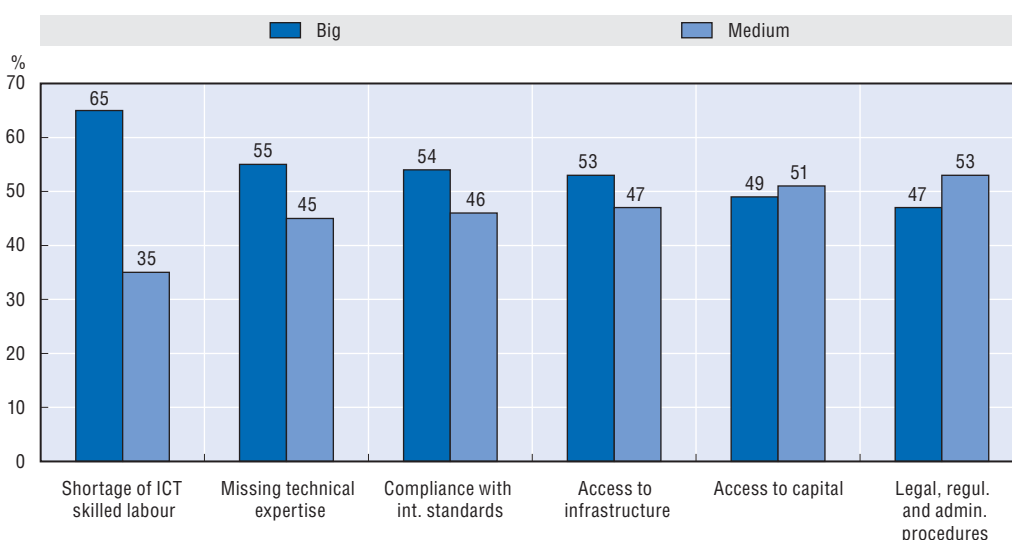
Among other problems for Bosnia and Herzegovina’s IT industry are the brain drain, lack of implementation of ICT technologies in business operations, and the slow progress of the modernisation of public administration (BAIT, 2006).

One of the main obstacles to competitiveness is the skills gap. The shortage of software development experts was recognised as a limitation by 68% of RCS respondents and lack of technical expertise by 55% (Figure 3.28).

Co-operation with the public sector, as indicated by a survey of the Bosnian Association of IT (BAIT), is also weak and insufficient.

7.2.3. Policy recommendations

The gap on the labour market supply side, in terms of adequate skills and knowledge of international standards, should be tackled by increasing the involvement of the private sector, with sponsorship of courses (e.g. in IFRS and US GAAP). Courses should focus on building both technical (hard) skills (e.g. network security, compliance, data protection and analytics) and soft ones (e.g. practical problem solving, collaboration, management). The legal systems of other countries, especially those where Bosnia and Herzegovina’s large

Figure 3.28. **Limitations on increasing competitiveness in Bosnia and Herzegovina**

Source: BAIT (2006).

diaspora lives, such as Germany, Austria and Italy, should also be studied. Skills and knowledge can be disseminated through e-courses.

It appears that Bosnia and Herzegovina has a limited pool of human resources and needs to work with the region's other economies in order to compete with Central and Eastern European countries. Banking is an area where skills and knowledge have grown considerably. The telecom sector is also relatively competitive with that in EU countries. Therefore, BPTO actors on the local level can initiate pilot projects to provide specialised solutions in banking, with already existing co-operation protocols, usage and tools.

Currently there are no specific incentives or government projects to support IT firms in Bosnia and Herzegovina. Opportunities for development in the sector could benefit from specialisation, clustering and linkage programmes.

Vertical knowledge in specific strong industries (*e.g.* metal processing, automotive, wood processing, food processing) should be utilised, complementary to IT skills. For example, before the war Bosnia and Herzegovina had strong competencies in engineering (*e.g.* Energoinvest) and automated processes. Companies in these fields employed thousands of people, with large IT departments having more than 100 staff. The restructuring and privatisation process led to the fragmentation of those companies and segmentation of the IT market. It is essential, therefore, to build integrated clusters focusing on country benefits but also on regional advantages, such as costs, innovation advantages, and new service lines related to the integration of vertical industries and the IT sector. In this regard, it would be conducive to the development of the IT sector to leverage companies to support and lead applied courses that would help to develop SME-FDI linkages.

Summary of recommendations:

1. Assess the skills gap and labour shortages in regard to languages, finance, legal and IT qualifications.
2. Increase quotas for language and IT graduates at universities.

3. Leverage companies' strong competencies (e.g. engineering) to support and lead applied courses that would help develop better integration of IT and vertical industries, such as metal processing, automotive parts, food processing and tourism.
4. Establish e-courses teaching programming tools and languages (including domain specific ones and modelling), e.g. PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and Action Script.
5. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development.
6. Reduce barriers to participation by IT professionals in specialised international conferences, seminars and training.

7.3. Croatia

7.3.1. Sector overview

Croatia has the most highly developed BPTO sector in the Western Balkans. IT, accounting and call centres are the segments most frequently outsourced to Croatian firms. Following trends in Central and Eastern Europe, the leading users of outsourcing services are banks.¹⁵ The IT service and accounting segments are leading the growth trend, with most new firms opening in these fields in Croatia.¹⁶

Interest in Croatian BPTO companies was recently shown by one of the leading Indian integrated BPTO firms, ExlService Holdings Inc., which plans to acquire a local company as it seeks to take full advantage of the increasing trend of captives selling out to third-party BPTOs. Croatia was chosen primarily because of its language skills.

The IT industry in Croatia follows global trends in terms of the significant growth of the IT sub-sector within the ICT sector, measured by the number of employees in each sub-sector. According to IDC research, in the period 1999-2004 the growth of the IT sub-sector was 8.9% while the telecom sub-sector grew by only 0.6% CAGR. The share of employment in the IT sector in total employment is growing fast. It is the fastest growing sector of the Croatian economy (IDC Adriatics, 2006).

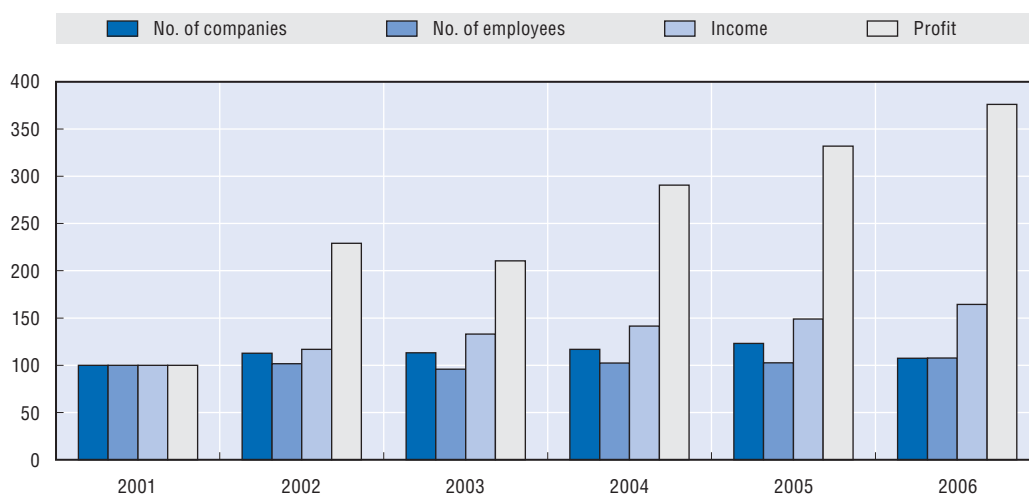
Research on the ICT sector by the Croatian Chamber of Economy shows that there were 2 523 ICT companies with 31 014 employees in 2006, with an income of Kuna 37 billion, 10.4%

Table 3.10. Share of the ICT sector in number of employees in the overall economy in Croatia (1999-2004)

	1999	2000	2001	2002	2003	2004	CAGR
IT sub-sector	6 068	6 484	7 437	8 093	8 903	9 303	8.9%
<i>Growth (%)</i>	<i>6.9%</i>	<i>14.7%</i>	<i>8.8%</i>	<i>10.0%</i>	<i>4.5%</i>		
Telecom sub-sector	14 007	14 677	15 278	15 488	14 786	14 460	0.6%
<i>Growth (%)</i>	<i>4.8%</i>	<i>4.1%</i>	<i>1.4%</i>	<i>-4.5%</i>	<i>-2.2%</i>		
ICT total	20 075	21 161	22 715	23 581	23 689	23 763	3.4%
<i>Growth (%)</i>		<i>5.4%</i>	<i>7.3%</i>	<i>3.8%</i>	<i>0.5%</i>	<i>0.3%</i>	
Share in employment (%)							
ICT	2.8%	2.9%	3.1%	3.1%	3.0%	2.9%	
IT sub-sector	0.8%	0.9%	1.0%	1.1%	1.1%	1.1%	
Telecom sub-sector	2.0%	2.0%	2.1%	2.0%	1.9%	1.1%	

Source: IDC Adriatics, 2006.

Figure 3.29. **The Croatian ICT sector: number of companies, employees, income, profit (2001-06)**

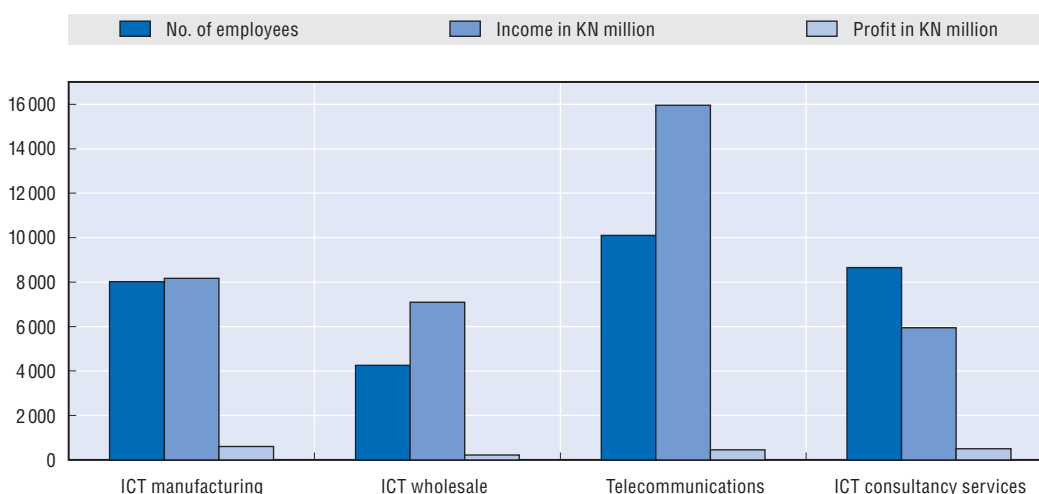


Source: Croatian Chamber of Economy, 2007.

higher than the previous year and representing 6.6% of total income in the Croatian economy (Croatian Chamber of Economy, 2007).

The accelerated growth of income and profit in 2006, compared with number of employees, shows a higher level of labour productivity. In the period 2004-06, ICT companies' total income and profit rose by 16.1% and 29%, respectively (Croatian Chamber of Economy, 2007).

Figure 3.30. **Structure of the ICT sector in 2006, according to NCEA**



Source: Croatian Chamber of Economy, 2007.

According to IDC, in 2006 IT spending in Croatia reached USD 934 million (Kuna 5.45 billion), for year-on-year growth of 18.9% expressed in USD and 15.9% in national currency taking account of exchange rate fluctuation. The IT outsourcing market in Croatia is estimated at around EUR 40 million and is considered one of the fastest growing segments.

IT services were the largest growth area, with spending soaring by 39.0%, while hardware deliveries grew by 9.9% and software by 13.1%. The shift from hardware to software and services points to the maturing of the country's IT market. The Croatian IT market is expected to grow to USD 1.235 billion by 2010, according to the IDC forecast. Expenditure on software and IT services, along with data storage and network equipment, is expected to be among the fastest growing segments, at 10.7% and 12.6% respectively (IDC Adriatics, 2006).

Table 3.11. Analysis and forecast of IT spending by technology in Croatia (USD million) (2005-10)

Servers	44.04	45.89	48.58	50.99	50.07	55.0	9.2
Data storage	38.47	46.98	54.47	60.61	67.45	74.09	14.0
PCs	201.25	217.34	231.13	240.49	248.93	260.22	5.3
Work stations	0.53	0.43	0.23	0.24	0.20	0.18	-19.2
Network equipment	72.66	82.99	95.62	107.83	114.39	124.41	11.4
Software	125.45	141.74	157.25	174.19	190.65	208.55	10.7
IT services	222.68	251.55	271.29	313.52	356.20	403.81	12.6
Others	84.34	97.17	100.37	103.22	104.71	108.42	5.2
Total	789.43	884.09	958.94	1 051.08	1 132.61	1 234.69	9.4

Source: IDC Adriatics, 2006.

The ICT sector is highly fragmented. In 2004 there were eight companies with more than 200 employees, all in the telecom sector. There were nine ICT companies with between 100 and 200 employees (IT services providers, software developers and distributors). Fifty-nine ICT companies had more than 30 employees, but the majority had less than 30 employees (IDC Adriatics, 2006).

7.3.2. Challenges and policy barriers

Among the recognised challenges facing Croatian BPTO sectors, as reported at the Second International Logistics Forum in April 2008, are the non-existence of large outsourcing companies, an unfavourable legal framework and corruption.¹⁷ As in other Western Balkan economies, BPTO companies are confronted with barriers related to human resources.

Overall investments in education have recently reached 4.3% of GDP, which is still less than in EU countries. Reforms in the educational sector rely heavily on external funding.

Nevertheless, Croatia scores highest (3.5 out of 5) among the Western Balkan economies on human capital, sub-dimensions education and training of the workforce, transparency in education and workforce skills development (OECD Investment Compact, 2006). Compared to the EU countries, it also does well with respect to other indicators of educational level, such as percentage of young people aged 20-24 who have completed at least upper secondary education or percentage of 18- to 24-year-olds who have not completed secondary education and are no longer in education (early school leavers). But Croatia performs very poorly in terms of its adult learning participation rate. Moreover, the number of graduates in mathematics, science and technology is fairly low compared to the EU average (ETF, 2006c).

The extent of education, however, tells little about skills acquired and their appropriateness to the labour market. For example, regarding IT skills, a study released by Source: OECD RCS (2008). Cisco Systems Croatia in March 2006 showed that Croatia would lack more than 5 000 IT experts in 2008. The average shortage of IT experts was 16% in 2005. It was forecast to grow to 25% by 2008 (IDC, 2006).

Table 3.12. **European benchmarks in education and training**

	Benchmark 2010	Croatia*	EU-25	New EU Member States
Completion of upper secondary education aged 20-24 (2004)	At least 85.0	92.5	76.7	90.1
Early school leavers (2004)	No more than 10.0	6.2	15.7	8.4
Graduates in maths, science and technology (2003)	Increase by 15.0 already achieved	3.4		31.1
Participation in adult learning	At least 12.5	2.0	9.9	5.0

* = most recent year for which data is available.

Source: Draft 2006 Joint Report of the Council and the Commission; Eurostat: Structural Indicators; OECD: PISA database; ETF Key Indicators Database.

A discrepancy between skills supply and demand is reflected in the high level of dissatisfaction with the competences of young people who have just left school, shown in a survey undertaken by the Croatian Chamber of Economy in 2005. According to the survey results, the education system, particularly in the case of vocational and educational training, has not followed economic trends and many young people continue to be trained using outdated materials and equipment. Moreover, technical skills are insufficient and key competences, such as using IT, communication skills in their own and foreign languages, numeric skills, motivation to work, teamwork, problem solving and independence and self-initiative, are underdeveloped. This situation, according to employers, is due to the lack of systematic dialogue between social partners and the education system on labour market issues.

Concerning skills acquisition, numeracy skills and new types of basic skills such as computer literacy and problem solving are also lacking. The lack of basic skills is particularly important in regard to acquiring more advanced ones. Unlike employers in most EU countries, in Croatia most firms do not feel responsible for training their own employees. Most Croatian firms do not provide as much training as is required, preferring to try to attract trained workers from the labour market or from other firms. Some firms do not appreciate the need for and value of training, and some (under serious cost pressures) have cut training budgets as an apparently avoidable expense.

Larger and international firms are more likely to appreciate the need for employee development, especially management training, but there are problems particular to the numerous SMEs in Croatia. They are less aware of the importance of employee development; or it can be more costly or difficult for small firms to give time off for training (ETF, 2006c). A number of institutions of higher education are developing business education studies leading to diplomas or MBAs, but there may be some question as to the quality of such training. A 2002 survey showed that less than 15% of first-line and middle managers, and less than 9% of top managers, underwent additional training. The general impression is that management training, and the need for managers to engage in continuous learning, are not taken seriously enough in Croatia (Alka Obadic, 2004).

The same ETF report repeats a criticism made by the Croatian National Council for Competitiveness (NCC) regarding the quality of management in relation to the objective of improving competitiveness and suggests that management training receive special attention (ETF, 2006c).

Croatia's level of government spending on education is low compared to that in the EU: only 4.5% of GDP compared to 5.5% in the EU in 2005 (Eurostat, 2008). The structure of

spending is of more concern since very little is devoted to new projects and research. Spending is rather on faculty salaries and on maintenance (Ministry of Finance of the Republic of Croatia, 2008).

Until now there has not been a comprehensive analysis to systematically examine the responsiveness of the education system to labour market needs. However, research undertaken through the OECD Regional Capabilities Survey (RCS) and OECD interviews, as well as other research, indicate a mismatch.

Both the RCS and interviews with IT firms show a considerable lack of skills and of educated workers in the IT field. Half the IT firms interviewed consider that there is a significant gap between the types of skills their employees have now and those needed to meet current business objectives. About 90% of IT firms consider that there is a gap in general skills related to management, leadership and showing initiative. Of those skills related to IT, those with the highest identified gaps (55% to 78%) are database, general application development, internet related software, and system software support.

The findings of the recently drafted Human Resource Development Operational Programme are similar. The Croatian population is reported to have “relatively high rates of secondary education but low rates of higher education and the workforce has relatively low skill levels. There appears to be a significant mismatch between the content of education (even vocational education) and the requirements of the labour market and very low levels of provision of adult education and training” (CODEF, 2007).

Croatia has one of the highest levels of brain drain in South East Europe (29.4%) or in Europe in general (World Bank, 2004). Compared with the EU, it has a considerably lower share of highly skilled workers in the total number of employed. The share of highly skilled non-manual workers (including managers, professionals and technicians) in 2004 was 38.4% in the EU-27 but only 29.6% in Croatia. Croatia also lags behind the EU-27 regarding the share of tertiary (ISCED 5 and 6) education graduates in the population, even in younger generations, although it is ahead of countries like Italy and the Czech Republic. The difference is expected to be reduced, as the number of graduates increased from 13 510 in 2000 to 18 190 in 2006 (34.6% growth).¹⁸ Adult participation in education and training was only 2.3% in 2005, while the EU-27 rate in 2006 was around 9.6% (CODEF, 2007).

The EU CARDS project calculated that at least 800 IT engineers per year on average graduate from Croatia’s five universities. Most come from the the faculty of Electrical Engineering and Computing in Zagreb. Croatian engineers and IT specialists are often highly regarded for their skills. Top global IT companies have described them as “world class with excellent technical education, flexible, innovative and creative, possessing high efficiency and productivity levels in software engineering” (CARDS, 2006).

Interviews with employers show that the output of skilled engineers has not been meeting demand. All foreign companies suggested at least a 50% increase on current output. The RCS results also highlight the lack of availability of people with really good “soft” management skills, such as marketing, human relations and negotiating.

The employers surveyed by the RCS were also of the opinion that a lack of global and innovative thinking in universities is impeding the development of higher education, and that the system is “rather rigid, inward looking, as well as theory oriented, with low levels of practical and industry related training.” The quality of education in engineering and science, on the other hand, is considered good, unlike the situation in other faculties. Research also

Box 3.5. Overview of the Faculty of Electrical Engineering and Computing (FER) curriculum

The faculty in Zagreb has three major disciplines: Electrical Engineering/Information Technology; Computing/Computer Science; and ICT/Informatics/Communications. Total enrolment is close to 4 000, with a breakdown of approximately one-third of students in each discipline.

There is a five-year programme with an annual intake of 650 per year, totalling 3 250. The remaining 750 students are accounted for through part-time, repeat, and those students undertaking further/higher studies. The drop-out rate from FER is under 10%, or 600 + graduates on an annual basis. Under the Bologna Process, aimed at making higher education in Europe comparable and compatible, the time spent studying for a bachelor's degree has been shortened to three years, with a further two years to complete a Masters.

FER collaborates very closely with existing technology companies, particularly Microsoft, Ericsson, Siemens, Cisco Systems and Oracle. Plans are being finalised to work with SAP and IBM.

FER confirms the lack of unemployment among graduates and cites the brain drain out of the country, at more than 10%. It is estimated that more than 4 000 recent FER graduates live and work abroad, principally in Germany, the US, Ireland, Sweden and Australia.

In Croatia, FER graduates find employment in banking, insurance, other financial organisations, electrical engineering/IT, general industry, power utilities, telecommunications and electrical engineering.

Source: CARDS (2006).

indicates that there is a lack of training facilities and resources to provide new skills for the unemployed.

Another acute problem in the IT sector, besides lack of human resources, is lack of funding, particularly for advanced research (CARDS, 2006).

7.3.3. Policy recommendations

Overall, Croatia should focus on high value-added software development to justify the relatively high level of cost of labour in services. In terms of vertical focus, Croatia needs to leverage its sector base and further advance the expertise of its financial, telecom and tourism sectors in areas relevant to business process outsourcing. This requires a shift from traditional call centres to more value-added services and rounded packages. More value-added services should include research and analytics, human resources administration, cash and investment management, tax compliance and internal audit.

Focusing on strengthening technical and soft skills and competencies calls for establishing exchange programmes and tailored courses with foreign BPTO firms and universities. Policies related to the quantity and quality of the labour market in Croatia should aim to build those capabilities by using e-courses, teleconferencing, etc.¹⁹

The SME sector in Croatia, which is particularly large and vibrant, presents an opportunity for local BPTO firms to offer packaged solutions and adapt them for the EU market, preferably in partnership with a first tier BPTO company from abroad.

Croatia has gone far in skills gap analysis, but its approach to planning human resources needs to be more comprehensive and systematic. This implies setting up a human capital

development co-ordination team under the Prime Minister, involving the ministries of education, labour and economy and the Investment Promotion Agency.

Moreover, the Croatian Investment Promotion Agency needs to increase promotion of the BPTO sector through brochures, videos, conferences, etc.

In modern and competitive small economies, the traditional approach of supporting production has given way to fostering research and innovation. This shift has not been reflected in Croatian state budget lines, despite the government's objective of making Croatia a competitive knowledge-based economy with the IT sector at the forefront. Therefore, if Croatia's public sector is to catch up and improve its competitive position on the European and global market, this sector as well as private companies need to further invest in applied research and innovation.

The integration gap of businesses and IT is an impediment to Croatia (the most advanced economy in the Western Balkans) leveraging business opportunities for its companies. Croatia may not be able to compete with the other Western Balkans economies in terms of labour costs, but its advantage lies in its advanced know-how, high rate of absorption of new technologies and IT, and vertical expertise in fields such as mobile technologies, geo-information systems, shipbuilding and pharmaceuticals. It is therefore necessary to promote closer co-operation between the IT and other industries in order to further Croatia's competitive position in these segments and, consequently, in the IT industry itself.

The quality and readiness of IT students entering the labour market should also be addressed. Initial linkages between universities offering courses in IT and computing and the private sector need to be further developed in order to produce high quality engineering and business education relevant to business requirements.

The growing gap between the demand for and supply of IT experts needs to be addressed more systematically. It is essential to align the Ministries of Economy, Labour and Entrepreneurship and Education with priorities stipulated by the Ministry of Science, Education and Sports, in co-operation with the private sector. It could be beneficial to leverage Irish and British best practices in terms of planning human resources conducive to economic development.

Summary of key recommendations:

1. Utilise public-private partnerships to create venture capital funds focused on supporting software development companies engaged in applied research and innovation.
2. Develop closer collaboration between IT companies and the private sector to achieve business-oriented process improvements in specific industry segments (*e.g.* mobile communication, geo-information, shipbuilding and pharmaceuticals).
3. Conduct a thorough skills gap analysis of the IT sector based on initial work by USAID and the Trade and Investment Promotion Agency of Croatia.
4. Increase quotas for IT graduates at universities.
5. Strengthen linkages between local and international universities offering courses in the IT and computing fields to produce high quality engineering and business professionals.
6. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript.

7. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development.

7.4. Kosovo under UNSCR 1244

7.4.1. Sector overview

The BPTO sector in Kosovo under UNSCR 1244 is in an embryonic phase of development. Local BPTO firms are very fragmented and are mostly focused on accounting and financial services. Although the infrastructure essential for BPTO services has been renewed, it still lags behind that of the rest of the Western Balkans region.

The presence of the international community has resulted in a transfer of skills and knowledge to local companies. Local educational institutions, eroded in the 1990s, have been undergoing a process of improving the quality of education offered.

Nominally, the legal system has been aligned with that of the EU. However, implementation has fallen behind.

The ICT market is in an early development stage. In 2006 it achieved substantial growth, of 200% (American Chamber of Commerce in Macedonia, 2007). Starting from a lower basis than most of the other economies in the Western Balkans, market growth potential is considerably high.

Despite the challenge of data collection, a USAID project attempted, primarily through interviews, to estimate the main characteristics of the IT sector in Kosovo (USAID, 2007). According to this study, the IT sector has annual income of approximately EUR 35 to 50 million. Some 25% to 30% of this income represents IT services and the rest represents equipment resale, installation and related services.

It is estimated that the sector is growing by about 20% to 25% annually, and that there are currently fewer than 100 firms in the sector. The IT market is very fragmented; most IT firms are micro size, with one or two employees. There are about 25 to 30 firms with more than five employees, and from four to eight firms have more than 20 employees. It is estimated that there are about 400 to 600 people working directly in the IT sector.²⁰

The majority of IT solutions used are developed outside Kosovo under UNSCR 1244. Most IT spending comes from the government and banking sectors. A few firms resell basic business application packages, some of which they have developed themselves. Only a few firms provide outsourcing of software integration or development services internationally, and only a few firms market their services.

Average labour costs correspond to those in the Former Yugoslav Republic of Macedonia and Serbia. A junior engineer earns approximately EUR 300 to 500 and a senior engineer earns EUR 550 to 850 per month (USAID, 2007).

7.4.2. Challenges and policy barriers

The educational system of Kosovo under UNSCR 1244 was renewed in 1999, but education delivery remains significantly undermined by deficient infrastructure, administration and management. Teaching methods and outcomes are still poorly developed, and there are serious concerns about the quality of higher education. Such a situation inevitably affects work performance and productivity. A 2006 World Bank labour market assessment suggests that employers are disregarding formal qualifications in the hiring process, with the underlying

assumption that the formal education system is not meeting the needs of the market (World Bank, 2003).

In an economy which relies heavily on international aid and on transfers made by Kosovars working abroad, it is estimated that up to two-thirds of young people leave school without qualifications while the lack of pre-university adult education remains a constraint on supporting employability. Vocational training is offered to the unemployed, but limited resources mean that only 0.8% of the registered unemployed actually benefit from public service training (ETF, 2006e).

The ETF report, on the basis of the difficult business operations that firms are facing, assumes that the private sector does not invest significantly in staff development and management training. Among other obstacles to private training development, it mentions an underdeveloped private training market, inappropriate learning methodologies and the absence of accreditation and quality assurance systems (ETF, 2006e).

7.4.3. Policy recommendations

The first priority for Kosovo under UNSCR 1244, in regard to its relations with the BPTO sector, is to ensure good quality education, modernised and adapted to firms' business operations. Internship programmes can be established, and firms can be encouraged to co-operate with the university and other educational institutions. The focus should first be on back office services and call centres, as opposed to software development.

Possibilities for co-operation with Albania and the Former Yugoslav Republic of Macedonia are increasing and should be considered. Co-operation at the university level and with the private sector would give Kosovar firms needed experience in developing the BPTO sector and would later help determine the direction in which local BPTO firms were heading.

Lack of IT skills, mostly due to a theoretical approach to knowledge acquisition, is also a characteristic of the education system of Kosovo under UNSCR 1244. The report outlined that "engineering schools may have basics, but far behind providing technical skills for work." Most new IT workers come from the University of Priština and have reasonable math and analytical skills, but are ill prepared for work until they receive at least six months of additional on-the-job training. Soft skills, such as management and entrepreneurship, are deficient (USAID, 2007).

The situation in regard to education and training may change, not only due to the start of management training, but also as there appears to be strong support from the new technology dean at the University of Priština for improving public/private collaboration.

The OECD assessment was conducted in the context of a very high unemployment rate, estimated at between 35% and 60%, one of the highest in South East Europe. Kosovo under UNSCR 1244 has one of the youngest populations in the region, with over half the population under the age of 25. Unemployment is estimated to be highest among those aged 15 to 24.

For the development of the BPTO sector, one of the key challenges that first needs to be addressed is inadequate physical and ICT infrastructure. As in Albania, it would be desirable to invest in modern wireless communication technologies, *e.g.* HSDPA and WiMAX.

Apart from providing basic theoretical knowledge, the technical faculty at Priština and other technical schools should aim to upgrade skills and ensure training in the new

advanced technologies and standards which are key to building the competencies of IT experts. Moreover, training in entrepreneurship skills needs to be offered to students and to IT professionals.

Summary of key recommendations:

1. Establish internship programmes and encourage firms to co-operate with universities and other educational institutions.
2. Consider possibilities for co-operation with Albania and the Former Yugoslav Republic of Macedonia at the university level and with the private sector.
3. Address inadequate physical and ICT infrastructure. As in Albania, it would be desirable to invest in modern wireless communication technologies, e.g. HSDPA and WiMAX.
4. The technical faculty at Priština and other technical schools should aim to upgrade skills, and to ensure training in new advanced technologies and standards which are key to building the competencies of IT expert.
5. Offer to students and IT professionals training in entrepreneurship skills.

7.5. The former Yugoslav Republic of Macedonia

7.5.1. Sector overview

The BPTO sector in the Former Yugoslav Republic of Macedonia has been developing significantly, with advances in computer and telecommunications technologies and a reduction in their prices, making business processing and call centres viable technically and from the point of view of cost. The fastest growing segments are IT, accounting and call centres.

The country has demonstrated that it is both technically and commercially possible to operate multilingual contact centres, servicing other economies in the region. For example, Euroanswers, a UK based outsourcing company with strong Romanian connections, recently established a multilingual call centre in Skopje. It provides a help desk service on a 24/7 basis for a leading multinational hardware company. In addition to Macedonian clients, there are clients in Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo under UNSCR 1244, Montenegro, Serbia and Slovenia. There are a number of contact centres in the country, dealing with the local market. The largest are for telecommunications and financial services. Macedonian Telecommunications (MakTel) has two contact centres in the country, in Skopje and Veles, providing directory enquiries, fault reporting and internet support on a 24/7 basis. The vendor for these services is Avaya IP Contact Center Solution. Other telecommunications companies, such as OnNet, also have contact centres. Another company, Direkt, has a contact centre providing visa support services to a number of foreign embassies based in Skopje. EOS Matrix and Mellon Solutions provide services to the financial services sector.

The IT sector is one of the fastest growing sectors in the country. According to research carried out by IDC, this sector reached about USD 77 million and was expected to grow by about 16% in 2007 compared to 2006. It is forecast to reach USD 150 million by 2010. The main drivers of growth are expected to be liberalisation of the telecommunications sector and the EU harmonisation process, which will require reliable and always accessible IT infrastructure and solutions. Increased competition among telecom service providers will stimulate new services, for which it will be necessary to upgrade and introduce new platforms and solutions.

In 2005, according to the income figures, the value of the Macedonian telecommunications sector was eight times larger than that of the IT sector. There are about 400 firms in the IT sector and about 100 in the telecommunications sector. The IT sector employs about 2 000 people, while the telecommunications sector employs about 4 000 people (American Chamber of Commerce in Macedonia, 2007). These figures demonstrate the fragmentation of IT firms, which employ five workers per company on average.²¹

The IT market faces several development issues, such as slow industry development, insufficient services and a small market size.

7.5.2. Challenges and policy barriers

The main challenges lie in training and educating a new generation of employees. One of the three key challenges recognised by ETF experts in their 2006 analysis of education and training in the Former Yugoslav Republic of Macedonia was to enhance the education and skills of the population through better education and training opportunities for all (ETF, 2006d).

The overall supply of the country's labour force related to the BPTO and ITO sectors is insufficient. Currently there are weak linkages between education (universities) and employers and often curricula are not based upon technological development, either in secondary, VET (vocational education training) or university education. While the focus in training is on technical skills and much less on the soft skills, the methods of teaching and knowledge transfer are outdated and need to be upgraded (OECD Investment Compact, 2007). There is also a need to establish a lifelong learning system, with the identification and recognition of competences acquired through non-formal and informal learning in order to allow work and education mobility in the formal system (ETF, 2006d).

OECD interviews conducted with the largest Macedonian IT firms revealed that while there is excellent technical knowledge, IT workers lack adequate soft skills (*e.g.* in management, teamwork and entrepreneurship). There is also inadequate expertise in domain knowledge, such as billing, international financial standards, etc. Training at the universities is primarily directed towards the acquisition of theoretical knowledge and not aligned with industry needs and contingent business operations. Co-operation between the university and the private sector has been initiated, *e.g.* by offering internships for students, although this is still in its early stages. The Macedonian Association of IT Industry (MASIT), in particular, is engaged in developing better linkages between all stakeholders with the aim of increasing the competitiveness of the IT sector.

To respond to the increased demand for IT workers, the number of students enrolled in the electrical engineering and IT programmes at the University of Skopje has been increased from 360 in 2006/2007 to 400 in the 2007/2008 academic year.

The need to provide widespread access to IT infrastructure and to raise the level of IT awareness and skills at an early stage has prompted the initiation of two major projects. The first is "Wireless Macedonia" (USAID and AED, 2007), a plan supported by USAID funds to make internet access across the country available wirelessly. The second project is a government plan ("A Computer for Each Child") to provide some 180 000 computers with a value of about USD 10 million.

The level of fragmentation of companies is another main challenge. ICT firms only have the size to compete on international markets. Seavus is one of the few successful models (Box 3.6).

Box 3.6. **Seavus case study: a pioneer ICT company facing strong impediments to growth due to acute shortage of labour**

Seavus is representative of the challenges faced by an ICT firm in the Western Balkans. The firm was started in 1999 by a young Macedonian entrepreneur, who had been living in Sweden. It has 300 employees in Skopje and employs mainly graduates of the State University; employees are also hired through the international network. Seavus has approximately 15 international experts in domain knowledge working as trainers, including coaching and shadowing. It has offices in Belarus, Denmark, Latvia, Serbia, Sweden, the UK and the US, and customers in 30 countries including Volvo, Airbus, Tele2, Ericsson, Chevron, and the Ford Corporation. It offers products/solutions around Seavus Project Solutions (products that complement and enhance Microsoft Project), Seavus Callisto CTI (customer service), Seavus Parking System (on-line and off-line parking surveillance), telecom software (billing, middleware) and E-procurement, e-tax and e-commerce software.

The company's strong point is its products' quality-price ratio. For example, according to an assessment, Seavus Project Viewer EPM is ten times cheaper than MSFT, with greater reliability and functionality. Seavus has a significant marketing and promotion budget (EUR 2 million). Internet sales are its most significant source of income. All employees are well educated, the majority through a systematic individualised training plan. Internationalisation has begun, with some software translated into many languages including Japanese.

The company plans to hire dozens of programmers, including from abroad, since none can be found in the Former Yugoslav Republic of Macedonia. There are projects to develop domain knowledge expertise, and multi-disciplinary approaches in the research and testing of software and services. The company is thinking of co-operating with like-minded firms to establish a university centre with a high quality teaching cadre in the IT field. The company has expressed concerns, and raised points for attention, that can serve as a reference for any player in the Western Balkans. Co-operation with the government in obtaining more graduates in the technical field, including increased funds for their education, is the main source of concern. Mobility (visa and customs obstacles for exports and imports) is another. The main challenge is that Seavus cannot find enough qualified employees, but must re-train people coming from universities and the labour market

Source: OECD interviews (2007).

Local firms regularly are not large enough to build deep vertical-expertise, and there are no or limited linkages between the public and private sectors. A comparison of sponsorships at a leading IT university in the US and the Former Yugoslav Republic of Macedonia shows that 114 sponsorships/co-operation initiatives were announced at the Carnegie Mellon School of Computer Science (Carnegie Mellon University, 2007) and none at the Faculty of Electrical Engineering and Information Technologies in Skopje (S.s Cyril and Methodius University, 2007).

7.5.3. **Policy recommendations**

One of the highest priorities for the Former Yugoslav Republic of Macedonia is to develop linkages between education and the private sector in order to upgrade skills. In addition, economic free zones could be utilised to serve as a hub for other BPTO companies interested in the European market.

With Croatia and Serbia, the Former Yugoslav Republic of Macedonia has the most developed BPO and ITO sectors. Joining forces with other economies in the region on a

common project, *e.g.* offering package solutions for banking or telecom services, could serve not only as a basis for obtaining economies of scale and often required substantial size, but could also re-orient the focus of BPO services to higher value-added. The region's economies could work towards creating a regional brand based on quality standards.

Besides increasing the quantity and quality of graduates, which it has begun to do, the government could offer incentives to local firms to invest in education, training, and standards certification.

In the last few years the country has been able to market itself as a "Singapore of Europe", strongly emphasising its competitiveness in the IT sector. In reality, there is a critical lack of available workers in the Macedonian IT industry, a problem which needs to be addressed promptly. It is therefore necessary to invest in human resources in order to strengthen delivery with respect to the number of people trained, the quality of their training and linkages to businesses.

The number of workers can be increased by raising state quotas for ICT graduates at faculties that provide IT education and training. A diploma in the IT field could be introduced for short courses at the vocational education level. The content of the curriculum needs to be adapted to rebalance the share of theoretical courses, reinforce training in soft skills (*e.g.* project management, foreign languages) and explore linkages with businesses/other scientific domains (*e.g.* design, bio-informatics). Closer linkages between the industry and education could be achieved through, for example, introducing master classes with industry experts. Funding of student exchanges with leading foreign universities, internships, sponsored courses and research projects could also create better connections with the private sector.

Macedonian IT firms should be engaged in regional efforts to initiate projects that would enable them to offer software solutions to the public, banking and mobile communications sectors and others (*e.g.* Seavus has IT offshoring experience with Chevron, Texaco, Volvo). This co-operation should aim to produce regional leaders, which would result in greater visibility of the country's IT sector internationally and help to build a joint Western Balkans IT brand.

Finally, IT firms should increase their presence at ICT conferences and forums (CeBIT²², e-forums, etc.) to establish their presence on the wider market.

Summary of key recommendations:

1. Develop linkages between education institutions and the private sector in order to upgrade skills.
2. Join forces with other economies in the region on a common project.
3. Offer incentives to local firms to invest in education, training, and standards certification.
4. Introduce a diploma in the IT field for short courses at the vocational education level.
5. Adapt the content of curricula to rebalance the share of theoretical courses, reinforce training in soft skills, and explore linkages with businesses and other scientific domains.
6. Introduce master classes with industry experts.
7. Fund student exchanges with leading foreign universities.
8. Support the presence of IT firms at ICT conferences and fora.

7.6. Montenegro

7.6.1. Sector overview

The BPTO sector in Montenegro, one of the smallest economies in the region with a population of 665 000, is not yet developed apart from a number of local firms, rather small in size, serving other local firms (e.g. accounting, financial services).

The IT market has been relatively underdeveloped compared to that in neighbouring countries, such as Croatia and Serbia. But Montenegro has begun to catch up in the last couple of years with investments in ICT infrastructure, namely in mobile telecommunications, including 3G, and broadband infrastructure. The size of Montenegro's IT market was EUR 20 million in 2006 and EUR 25 million in 2007, an increase of 25%. It is estimated that IT investments in 2008 could raise market value to EUR 40 million, a further increase of 60% (ISSP, 2008).

IT expenditure, according to the same source, is estimated to increase from EUR 44 per capita in 2006 to EUR 167 per capita in 2011, representing CAGR of 30.6%. The internet penetration rate reached 38.8% in 2007, increasing 62% compared with the year before (ISSP, 2008).

The internet penetration rate in 2007 was 40% (Internet World Stats, 2008). While 85% of households used dial-up as their main internet connection in 2006, this had fallen significantly, to 65%, in 2007. At the same time, the number of ADSL users jumped from 4% of households to 35.4% (ISSP, 2008).

7.6.2. Challenges and policy barriers

Montenegro spends the highest proportion GDP on education of any Western Balkan economy (4.7%, close to the average in OECD countries of 5.4%). It ranks second, immediately after Croatia, in the assessment of the human capital dimension of the IRI report (OECD Investment Compact, 2007).

In a 2005 World Bank study, the following factors were identified as reducing the education system's contribution to the development of a quality workforce: poor school infrastructure, outdated learning material, equipment, teaching methods, except from those which benefited from teacher development projects. In 2006, few schools had access to ICT infrastructure (ETF, 2006f).

In 2005 some 52% of young people (15-24 years) were unemployed, but there are no specific employment measures in effect to address this problem. It is estimated that only about 10% of Montenegro's young people are in full time employment, and that only around 1.5% of unemployed young people benefit from vocational training programmes (ETF, 2006f).

The issue of the confidence of the market in the vocational skills being provided by the education system is reflected in an ETF labour market review which makes no distinction in unemployment rates between those with primary education and those with vocational education.

Furthermore, ETF research, using the European Charter for Small Enterprises and the National Report for Montenegro in 2005, found that there is little data available on the level of investment by businesses in staff training, apart from isolated efforts at more corporate oriented training (e.g. marketing, business strategy, standards), mostly supported by international donors and geared towards improving business performance with no reported investment in shop floor workers (ETF, 2006f).

Although the situation in terms of ICT infrastructure has improved, challenges related to human capital remain, especially with respect to providing the right set of skills related to the business world.

Among the main challenges for the IT industry in Montenegro is the inadequate supply of IT experts. Montenegro has suffered from a brain drain in this field, although the problem is fixing itself – the number of people receiving a university degree in ICT related fields is constantly increasing. IT firms in Montenegro find state support for training to be inadequate for their needs.

IT firms have difficulty finding people with the right skills, especially project managers and employees with ICT skills (*e.g.* systems and network engineers), above all in security and software development.

7.6.3. Policy recommendations

To develop the BPTO sector in Montenegro, there is a need to invest in the quality and quantity of human capital through both private sector involvement and more tailored educational programmes. Such schemes include offering internships, interventions in universities courses, exchange programmes with foreign vendors and universities. This applies to call centres, back office services and software development. Due to Montenegro's small size, BPTO firms, to compete internationally, are bound to co-operate with BPTO firms in the region's other economies. The content of BPTO focused training should aim towards high value-added services, including sector/technical specific training and opportunities for legal process outsourcing, IFRS and US GAAP in financial BPTO, medical environment and regulations for medical technical support, advanced business and technical languages for remote technical assistance.

Management of labour market supply should be strengthened by furthering initial skills gap assessments and moving towards longer term planning. This would involve not only setting up an efficient mechanism for dialogue between all key stakeholders, including the public and private sectors and civil society, but also creating a co-ordination body for developing human capital in Montenegro.

One of the first specific priority policies for Montenegro in the IT sector is related to human capital development, primarily IT graduates. Outdated learning material, sometimes obsolete equipment and teaching methods for young IT graduates require a shift in the planning and implementation of IT curricula, but also in project management, communication, marketing and sales relevant to the IT industry. Closer linkages between the private sector and the technical faculty need to be developed in order to bring real business life and requirements closer to students.

High internet penetration in Montenegro is not consistent with the level of technology usage. Less than half of households have a computer, indicating a fairly low level of computer literacy. The government should consider implementing technical educational programmes to provide basic IT skills and further increasing computer and internet access at schools.

As a small country, Montenegro should work closely with the region's economies, such as Croatia and Serbia, to identify strong verticals, *e.g.* tourism (sailing) and mobile communications, which could then be integrated with IT courses, enabling IT professionals and firms to move higher on the value-added products and services scale.

Summary of key recommendations:

1. Focus the content of BPTO training towards high value-added services.
2. Set up an efficient mechanism for dialogue between all key stakeholders in the field of education, including the public and private sectors and civil society.
3. Create a co-ordination body for developing human capital.
4. Improve the planning and implementation of IT curricula, as well as of project management, communication, marketing and sales relevant to the IT industry.
5. Develop closer linkages between the private sector and the technical faculty.
6. Implement technical education programmes to provide basic IT skills and further increase computer and internet access at schools.
7. Identify and promote areas of specialisation, *e.g.* tourism and mobile communication.

7.7. Serbia**7.7.1. Sector overview**

The BPTO sector in Serbia has been growing significantly since the end of 1990s. Business potential has increased in the last few years, assisted by the process of EU integration and a free trade agreement with Russia.

The most developed BPTO fields are ITO, accounting, CRM, human resources and call centres. Trizma, founded in 2002, was the first company in Serbia to offer a complete range of call centre outsourcing services and is an example of innovative and strategic planning in the BPTO sector. This Belgrade-based company provides clients with inbound and outbound interaction handling for customer service, debt collection, appointment scheduling, marketing campaigns and other CRM operations. Trizma was established through a joint venture between a Hungarian software company, Geomant, and an American investment company, Convex. Its clients include major companies in key market segments such as the food, telecommunications, and the financial and banking sectors, including Coca-Cola (customer service, marketing support, remote store delivery support), Delta Banka (inbound customer care call handling), Maxi, American Embassy and Delta Osiguranje (outbound lead generation and appointment scheduling) (Altitude Software, 2005).

Major international firms such as PricewaterhouseCoopers (PWC) have already established their captive centres. PWC employs 160 people and primarily offers package services (financial audit, advisory business compliance, tax and legal consultancy) to international clients with operations in Serbia. The company considers local staff to be creative and open minded, with high value-added. However, there is a problem finding experienced and qualified people with the right set of skills (OECD Investment Compact, 2007).

Serbia has developed telecom infrastructure in major cities, but in some provincial areas it is lagging behind.

The value of the Serbian IT market in 2007, according to Business Monitor International (BMI), was estimated at USD 454 million, an increase of 25% compared with the year before. It is expected to continue to grow at higher than the regional rate, with CAGR of 15% up to 2012 (BMI, 2008). There are an estimated 1 300 software development firms in Serbia, but the majority (70%) are in the hardware business, whereas services are just above 20% and software production 10% (OECD Investment Compact, 2007).

Box 3.7. Example of a technologically advanced approach to BPTO in Serbia

One of the innovative contact centre solutions implemented by Trizma is Altitude Collaborator software. Altitude Collaborator is a module that bridges internet self-care with the contact centre. The Altitude uCI suite is a call centre solution with a universal queue and full-blended support for voice (inbound, preview, power and predictive dialling), IVR, email response management, web collaboration and web chat. IT provides flexibility and functionality for responding to customer needs in real time and quickly designing and maintaining agent front office applications tailored to customers' requirements. A new system, multichannel customer interaction management, enables Trizma to efficiently roll out personalised inbound and outbound campaigns on behalf of its customers, viewing contact results in real time and monitoring overall contact centre activity to generate efficient CRM campaigns.

Source: Altitude Software (2005).

Major multinationals such as Microsoft (its fourth development centre in the world), Intel, Ericsson, Siemens and IBM are present in Serbia. A number of smaller European firms have also established a presence, both in order to expand their market reach and to develop IT products for the region.

Over 100 leading private ICT firms and representatives of universities and research institutes have established an ICT cluster in Serbia. More than 1 000 IT professionals per year are produced. The cost of graduate level qualified staff is considerably lower than in Western Europe (OECD Investment Compact, 2007).

The Serbian government has ambitious plans for the development of the IT market. Thus, it is planning to set up a range of technology parks in Belgrade, Niš, Novi Sad and Indija, the last to be the largest technology park in the region (SIEPA, 2008).

Labour costs also represent a significant advantage compared with those in the EU or even in Serbia's neighbours. At the end of 2004, average monthly wages in Serbia were EUR 180 compared with EUR 785 in Croatia and EUR 832 in Hungary (SIEPA, 2005).

7.7.2. Challenges and policy barriers

The outdated early education system and its lack of flexibility are evidence of the insufficient quality of the compulsory education system. Serbia holds one of the lowest positions in terms of reading ability and proficiency in mathematics for 15-year-olds (OECD, 2007). Employers in Serbia are not satisfied with the content and quality of skills and knowledge that the education system provides to young people: there is a lack of problem solving skills and entrepreneurial spirit, excessive theoretical knowledge and inadequate general and specific technical skills (ETF, 2006g). In 2005, only 15% of the population had a university education against 22% in the EU (Statistical Office of Serbia and Eurostat, 2008). Moreover, the performance and quality of university education seems weak. Only 11% of students graduate on time and the average length of studies is around eight years (ETF, 2006g).

As described in the 2006 ETF Country Report, despite the lack of available data on the skills and competitiveness of Serbia's labour force the "long years of disinvestment in new technologies and modern methods of work organisation within enterprises, involvement in subsistence agriculture and informal sector activities, suggest that a large section of the

labour force may have the formal qualifications but not the updated skills necessary for a market-based economy” (ETF, 2006g).

The ETF Country Report mentions the findings of the CARDS project, which highlighted that basic skills (*e.g.* communication skills, teamwork, reliability, a positive attitude to work) are often missing in Serbia, rather than technical and occupational ones.²³ Serbian employers often stress the need for knowledge of foreign languages and IT skills (ETF, 2006g).

With regard to training infrastructure, what had been considered a well established training infrastructure in the former Yugoslavia collapsed after the transition to a market economy and a multi-party system. Of the 200 workers’ and people’s universities in existence in 1990, only around 20 to 25 still actively provide courses in vocational training, foreign languages and IT. Most have inadequate facilities and staff, as reported in the ETF Country Report (ETF, 2006g).

Simultaneously and instead of the former training infrastructure, a new body of training providers, including formal education institutions (secondary vocational schools and universities), Chambers of Economy, NGOs, private training providers and small and medium-sized agencies are being organised. Still, the demand for training surpasses the needs of the adult population and the scope of training remains somewhat limited.

Some firms, usually if they are large and foreign owned, are implementing management and employee training schemes, especially in the ICT, banking and insurance sectors. Others, especially SMEs, have reduced training to a minimum. The ETF report estimates that “only 31% of enterprises offer some kind of training to their staff” (ETF, 2006g).

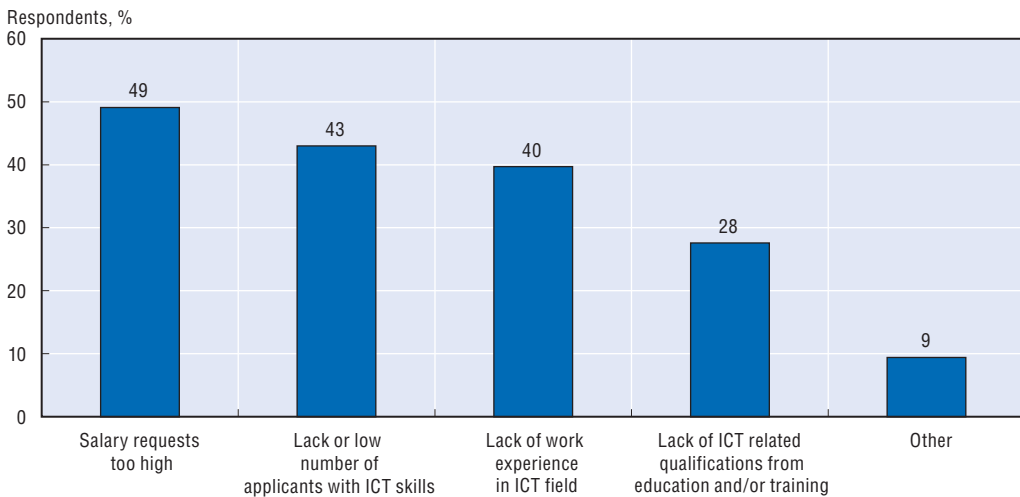
In this context, education and continuous training are the key levers for the region and for each country to be able to compete.

Other challenges include problems with law enforcement. Despite laws having been put in place, there are problems with their implementation, which hinders business operations.

In addition, the results of the Regional Capability Survey (RCS) indicate a lack of availability and employability of IT experts in Serbia. The main challenges in regard to employing IT experts in 2006, according to the firms surveyed, were related to education and training. Only 13.3% of enterprises provided training to their IT experts, and 10.1% of these did so within their own firms (OECD Investment Compact, 2007).

Serbia’s professional IT labour force is produced through a rather academic approach of imparting knowledge and skills. Each year around 1 000 students graduate in Electrical Engineering and Computer Science, which represents 7% of total university graduates. Since 1968, students from high schools specialised in mathematics, physics and informatics have won an impressive number of prizes at international competitions. In August 2005, students from the ETF (School of Electrical Engineering at the University of Belgrade) won first place in the largest international competition for young electrical engineers, the “IEEE International Future Energy Challenge 2005”, at the Illinois Institute of Technology (SIEPA, 2005).

Strong technical knowledge, coupled with the development of soft skills and a deeper understanding of business processes and verticals, would give Serbia a leading position for attracting IT operations from abroad.

Figure 3.31. **Obstacles to obtaining skilled ICT workers in Serbia**

Source: OECD Investment Compact, 2007.

7.7.3. Policy recommendations

Based on its strengths, such as expertise in telecom, banking, engineering, and a good quality-cost ratio, Serbia should focus on value-added BPTOs in selected niches (banking, telecom). As the automotive industry is experiencing a second wave and new large investments, Serbia should also draw on the experience of other countries in the CEE in order to take advantage of this emerging opportunity.

A strong diaspora, comprising young and educated people, has not been sufficiently capitalised on and could be an important bridge for moving towards knowledge process outsourcing (KPO).

BPTO firms can be located elsewhere than Belgrade, which would reduce operational costs. Such a shift to second and third tier locations would require closer collaboration in training local people in technical and soft skills.

For the IT segment, the major priority policy is to invest in meeting the market demand in terms of both quantity and quality of IT graduates. Quotas at the main engineering faculties in Serbia need to be adapted to increasing demand. Overall human resources planning needs to be given strategic priority. Best practices from Ireland and Britain could be used to optimise adjustments in the labour market and in educational and economic development policies.

Co-operation between electrical engineering and computing schools and management schools in South East Europe should be considered a priority and should receive government support in order to take place in a systematic manner. This would be aimed at preparing IT students to work together with vertical industries (*e.g.* the automotive industry) and to acquire the soft skills needed in the competitive environment of the real business world.

Many Serbian IT firms have expressed the need to reform trade related regulations in order to make IT products and services more attractive as exports. There also appears to be a lack of access to financing for IT firms, preventing them from developing their businesses. To overcome this problem, linkages would need to be developed between IT firms and financial institutions.

7.8. Summary of key recommendations:

1. Increase quotas for language and IT graduates at universities.
2. Adapt curricula to rebalance the share of theoretical courses, and reinforce training in soft skills (*e.g.* project management) and sector/technical specific training (*e.g.* ERP, VMI, DFM, CAE).
3. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript.
4. Introduce a master class with industry experts, to create closer links with the private sector.
5. Establish a funding scheme for student exchanges with leading foreign universities, internships, sponsored courses and research projects.
6. Support participation in regional BPO and IT events and conferences, in order to create linkages with other firms and associations in the region.
7. Support regional co-operation in obtaining international projects.
8. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development.

Notes

1. Software development involves turning a process or idea into a software tool. It can include creating new software or modifying or re-engineering existing software.
2. . "IT" is used throughout the chapter to refer to activities related to the IT services and software products in Table 25. "ICT" is used to refer to all the activities designated in Table 25.
3. "Customer care" refers to systems put in place by businesses to ensure customer satisfaction with the product or service they produce.
4. In the BPTO sector, a "captive investment" refers to Company A setting up a second company, Company B, which solely provides goods or services to Company A. For example, Company A sets up Company B, a call service centre, to handle customer relations solely for Company A.
5. Total communication access paths = standard analogue access lines + ISDN lines + DSL + cable modems + mobile subscribers.
6. Web 2.0 refers to the use of internet-based services evolving from a "read-only" to a "read-write" medium. Initially, it was a loose collection of recently developed concepts and technologies, *e.g.* weblogs, wikis, podcasts, web feeds and other forms of collaborative publishing, reinforced by social software, web APIs, web standards, on-line web services and Ajax (White, 2008). This concept has now been mainstreamed and is influencing the B2B environment. "Free" or "open source" software means "...that a user possessing copy has the legal right to use it, to study the software's source code, to modify the software, and to distribute modified or unmodified versions to others" (Von Hippel, 2002).
7. This figure only includes contracts greater than EUR 20 million.
8. See Bernard, Jensen and Schott (2005) and Nocke and Yeaple (2006).
9. Eurostat.
10. The Test of English as a Foreign Language (TOEFL) measures English reading, listening, speaking and writing ability. It is a prerequisite for study in many Anglophone universities when the student is not a native English speaker. Scores range from 0 to 120. Since its inception in 1964, this test has been taken by over 20 million people.
11. It is not uncommon for firms to sponsor university courses related to their field of activity, whereby they contribute to university staff salaries and course materials as well as presenting information and case studies on their business.

12. Telecom infrastructure has a 100% digitalised network since January 2003.
13. According to the OECD Investment Compact's research and the RGS results, the Albanian economy suffers from irregular provision of electrical energy.
14. OECD Investment Compact analysis, based on IDC data.
15. Survey conducted by Roland Berger Strategy Consultants, in Croatian News Agency article reporting on the Second International Logistics Forum held in Zagreb on 10 April 2008 (www.hina.hr).
16. Croatian News Agency article reporting on the Second International Logistics Forum held in Zagreb on 10 April 2008 (www.hina.hr).
17. Croatian News Agency, article reporting on the Second International Logistics Forum in Zagreb, 10 April 2008 (www.hina.hr).
18. The ratio of graduates in 2005 to those enrolled in 2000 (the first year) was less than 40%, implying a dropout rate higher than 60%, especially for those who finished only general preparatory (gymnasium) education and therefore did not have useful job skills. The problem of dropouts is expected to be even greater in the future, due to the large and growing enrolment at universities (from 91 874 in 1998/1999 to 132 952 in 2005/2006, a 44.7% increase).
19. A good example is co-operation between Infosys BPTO and Karnatak University in Bangalore, India. In this setting, students are offered specially designed curricula and are trained in communication skills, personality development, domain skills, problem solving and creative solutions, helping them to be employable in BPTO companies.
20. The figures do not include those working in IT departments of non-IT companies.
21. The Former Yugoslav Republic of Macedonia is the home of the largest IT and software development company in the region, Seavus, which employs around 800 people.
22. Annual trade show for information and telecommunications technology.
23. Except in dynamic sectors such as health care, banking and financial services.

Bibliography

- Alka Obadic, N. (2004), The importance of Education for Countries and Enterprise Competitiveness – Croatian Macro and Micro Indicators. *Sixth International Conference "Enterprise in Transition."* Split: University of Split.
- Altitude Software (2005), *Benelux and Central Europe Customers*. www.altitude.com.
- American Chamber of Commerce in Macedonia (2007), *The future of Macedonia's IT and Telecommunications Sector*. www.amcham.com.mk.
- BAIT (Bosnian Association of Information Technology) (2006), *Status of Information and Communications Technologies Industry in Bosnia and Herzegovina*. Sarajevo: Bosnian Association of Information Technology.
- BMI (2008), *The Serbia Information Technology Report 2008*. www.businessmonitor.com.
- CARDS (Community Assistance for Reconstruction, Development and Stabilisation) (2006), *Development of Investment and Business Climate in Croatia – Identification of Barriers to Investment in Croatia*. www.mingorp.hr.
- Carnegie Mellon University (2007), *Carnegie Mellon University School of Computer Science*. www.cs.cmu.edu.
- CODEF (2007), *Human Resource Development Operational Programme*. Zagreb: Government Office for Development Strategy and Coordination of EU funds.
- Croatian Chamber of Economy (2007), *Croatian ICT Sector in 2006*. www.hgk.hr.
- Deloitte (2008), *Why Settle for Less? Deloitte Consulting 2008 Outsourcing Report*. www.deloitte.com/dtt/alert/0,1001,sid%253D26551%2526cid%253D182379,00.html.
- ETF (European Training Foundation) (2006a), *Albania Country Analysis 2006*. www.etf.europa.eu.
- ETF (2006b), *Bosnia and Herzegovina Country Analysis 2006*. www.etf.europa.eu.
- ETF (2006c), *Croatia Country Analysis 2006*. www.etf.europa.eu.
- ETF (2006d), *FYRMacedonia Country Analysis 2006*. www.etf.europa.eu.

- ETF (2006e), *Kosovo Country Analysis 2006*. www.etf.europa.eu.
- ETF (2006f), *Montenegro Country Analysis 2006*. www.etf.europa.eu.
- ETF (2006g), *Serbia Country Analysis 2006*. www.etf.europa.eu.
- IDC (2006), *A study commissioned and presented by Cisco Systems Croatia*. Zagreb: IDC Croatia.
- IDC Adriatics (2006), *Analysis of the Croatian ICT Industry 1999-2004*. www.apiu.hr.
- International Society for Web Engineering (2006), *Mission Statement*. www.iswe.ev.de.
- Internet World Stats (2008), *Internet World Stats – Usage and Population Statistics*. www.internetworldstats.com.
- ISSP (2008), *Institute for Strategic Studies and Prognoses*. www.isspm.org.
- Ministry of Finance of the Republic of Croatia (2008), *State Budget of the Republic of Croatia*. www.mfin.hr.
- OECD (2007a), *Guide to measuring the information society*. Paris: OECD.
- OECD (2007b), *Information Economy – Sector Definitions Based on International Standard Industry Classification (ISIC 4)*. Paris: OECD.
- OECD Investment Compact (2006), *Investment Reform Index*. Paris: OECD.
- OECD (2007), *Programme for International Student Assessment*. www.pisa.oecd.org.
- SIEPA (2008), *Serbia ICT. Technology, creativity and infrastructure*. www.siepa.sr.gov.yu.
- S.s Cyril and Methodius University (Skopje) (2007), *Faculty of Electrical Engineering and Information Technologies*. www.ukim.edu.mk.
- UNDP (2007), *Lead Generation Exercise for the Albanian Business Services Sector, Final Report and Follow Up Action Plan*. www.undp.org.
- Tech Directors. "Career Directions," 10, 2003, pp. 22-23.
- TPI (2008), *TPI Index*. www.tpi.net/knowledgecenter/tpiindex/.
- UNESCO (2005), *UNESCO and HP Joint Project. Reversing Brain Drain in South East Europe*. www.unesco.org.
- USAID (2007), *Assessment of the Kosovo ICT Sector*. Washington: USAID.
- USAID and Academy for Educational Development (2007). *Macedonia Connects*. www.mkconnects.org.mk.
- World Bank (2003), *Labour Market Assessment in Kosovo*. www.worldbank.org.
- World Bank (2004), *Measuring the international mobility of skilled workers 1999-2000*. www.worldbank.org.
- World Bank (2007), *ICT at a glance*. www.worldbank.org.

Table of Contents

Abbreviations	13
Introduction	17
Executive Summary	19

Part I

Approach and Methodology

1. Sector identification: the Sector Prioritisation Framework (SPF)	24
2. Primary research	26
3. Secondary research	29
4. The Policy Impact Model (PIM)	29
Notes	30

Part II

Sector Analysis and Policy Recommendations

Chapter 1. Apparel Manufacturing	33
1. Summary	34
2. Sector definition and segmentation	35
3. Sector trends	38
4. Sector implications and key success factors	41
5. Sector attractiveness in the Western Balkans	50
6. Recommendations	55
7. Country specific recommendations	71
Notes	90
Bibliography	93
Chapter 2. Automotive Components	95
1. Summary	96
2. Sector definition and segmentation	97
3. Sector trends	100
4. Sector implications	104
5. Key success factors for automotive component suppliers	106
6. Sector attractiveness in the Western Balkans	107
7. Recommendations	114
8. Country specific recommendations	120
Notes	139
Bibliography	142

Chapter 3. Business Process and Information Technology Outsourcing	145
1. Summary	146
2. Sector definition and segmentation	148
3. Sector trends	151
4. Sector implications and key success factors	158
5. Sector attractiveness in the Western Balkans	160
6. Regional strategy	166
7. Country specific recommendations	174
Notes	199
Bibliography	200

Part III

Recommendation for a Regional Competitiveness Initiative

Chapter 4. Regional Competitiveness Initiative	205
1. The need for a regional level competitiveness initiative	206
Notes	209
Annex A. Summary of Country Recommendations	211
Annex B. SPF Weight Allocation Methodology	216
Annex C. Regional Capability Survey Questionnaires	217

List of boxes

1.1. Zara: reducing product cycle time	40
1.2. Inventory policy decision-making	42
1.3. Methods of apparel assembly	44
1.4. Labour regulations in the apparel industry	46
1.5. Examples of moving up the value chain	48
1.6. Intra-industry trade	63
1.7. Policy Impact Model (PIM)	66
1.8. Improving access to and the cost of financing in the short term	67
2.1. Automotive industry value chain	99
2.2. Backward linkages of the automotive components industry in the Western Balkans	110
2.3. The Automotive Cluster Bosnia and Herzegovina	121
2.4. The new product development process	137
2.5. The Serbian Center for Virtual Manufacturing	138
3.1. WiMAX	154
3.2. BPTO as a strategic investment	155
3.3. A fragmented sector	167
3.4. Leapfrogging technology	169
3.5. Overview of the Faculty of Electrical Engineering and Computing (FER) curriculum	185
3.6. Seavus case study: a pioneer ICT company facing strong impediments to growth due to acute shortage of labour	191
3.7. Example of a technologically advanced approach to BPTO in Serbia	196

List of tables

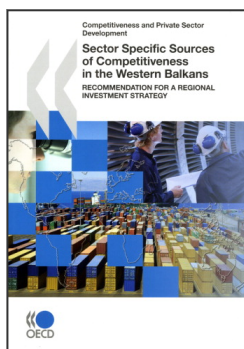
0.1.	Number of questions per survey questionnaire	27
0.2.	Number of companies surveyed	28
1.1.	Top destinations for Western Balkan apparel exports, 2000-06 (EUR million)	51
1.2.	RCA values between the Western Balkans and the EU-15 in the apparel manufacturing industry	51
1.3.	EU clothing imports: transit, freight and duty costs	55
1.4.	Time to clear customs for imports and exports	59
1.5.	Sources of financing new investment: the Western Balkans and OECD	67
1.6.	The apparel manufacturing industry in Albania	71
1.7.	Access to financing in Albania	74
1.8.	The apparel manufacturing industry in Bosnia and Herzegovina.	74
1.9.	Access to financing in Bosnia and Herzegovina	77
1.10.	The apparel manufacturing industry in Croatia.	78
1.11.	Access to financing in Croatia.	81
1.12.	The former Yugoslav Republic of Macedonia	83
1.13.	Access to financing in the Former Yugoslav Republic of Macedonia	86
1.14.	The apparel manufacturing industry in Serbia	87
1.15.	Access to financing in Serbia.	89
2.1.	The regional automotive components industry, key data	107
2.2.	Passenger car production in the CEE, 1950-90	113
2.3.	Automotive components supply and demand: information gaps.	115
2.4.	The automotive components sector in Bosnia and Herzegovina, key figures	121
2.5.	The automotive components sector in Croatia, key figures	124
2.6.	Automotive components sector in the Former Yugoslav Republic of Macedonia, key figures	129
2.7.	Automotive components sector in Serbia, key figures	134
3.1.	Definition of the ICT sector	149
3.2.	Global offshore services market, 2005-10	150
3.3.	Key figures for the IT/software development segment in the Western Balkans . . .	161
3.4.	EU flight destinations	162
3.5.	Average cross-country TOEFL scores	163
3.6.	Gaps in staff language abilities in the Western Balkans (%) (2008)	163
3.7.	Most popular destinations for Western Balkan students studying abroad (2006) . .	164
3.8.	ICT sector performance in Albania.	175
3.9.	Educational attainment rate of the population aged 25-65 (2002).	178
3.10.	Share of the ICT sector in number of employees in the overall economy in Croatia (1999-2004)	180
3.11.	Analysis and forecast of IT spending by technology in Croatia (USD million) (2005-10)	182
3.12.	European benchmarks in education and training	183

List of figures

0.1.	Sector Prioritisation Framework	24
0.2.	SPF quantitative analysis output for the Western Balkans region	25
1.1.	Apparel sector breakdown	36
1.2.	Western Balkan RCA values (2007	37

1.3.	US household expenditure on apparel	39
1.4.	Clothing prices in the EU and US (1996-2006)	41
1.5.	Types of apparel manufacturers: CMT, OEM, OBM	47
1.6.	Western Balkan clothing exports: total (%) and absolute value (2006) (right)	50
1.7.	FDI inflows into the textile and wearing apparel industry	52
1.8.	Average monthly wages (2006)	53
1.9.	Apparent productivity in the textile and apparel industry (2006)	54
1.10.	Most important key success factors	56
1.11.	Firms Implementing EDI	57
1.12.	Firms Implementing UPC symbol standards (%)	58
1.13.	Value of average cargo consignment lost in transit (2005)	59
1.14.	Firms marking shipments with bar codes (%)	60
1.15.	Main services provided by Western Balkan apparel manufacturing firms	61
1.16.	Sources of material inputs and supplies	61
1.17.	Sales lost due to delivery delays from suppliers (%)	62
1.18.	Major new product line development	62
1.19.	Relationship between intra-industry trade and the correlation of export/import movements	64
1.20.	Total loan costs in 2008 (principal and interest payments)	66
1.21.	VAT reimbursement delays	68
1.22.	Import tariffs (2008)	69
1.23.	Policy areas representing moderate to major business barriers in Albania	73
1.24.	Policy areas representing moderate to major business barriers in Bosnia and Herzegovina	76
1.25.	Policy areas representing moderate to major business barriers in Croatia	80
1.26.	Policy areas representing moderate to major business barriers in Kosovo under UNSCR 1244	82
1.27.	Policy areas representing moderate to major business barriers in the Former Yugoslav Republic of Macedonia	85
1.28.	Policy areas representing moderate to major business barriers in Serbia	89
2.1.	New car sales in the EU, US and Japan, 1990-2005	101
2.2.	Inflation in the EU: all items and new cars	102
2.3.	Inflation in the US: all items and new cars	102
2.4.	Concentration of world motor vehicle production (2007)	103
2.5.	Car value outsourced (%)	105
2.6.	Growth in sales by automotive suppliers per country (2004-05)	108
2.7.	FDI inflows and inward stocks in the automotive sector in the Western Balkans	109
2.8.	Average wages in the automotive industry, 2006 (indexed on Hungary's wage levels)	110
2.9.	Labour productivity in the manufacturing industry, 2004 (indexed on Hungary's productivity level)	111
2.10.	Key customer requirements for automotive component suppliers in the Western Balkans	112
2.11.	Skills gaps in the automotive sector in the Western Balkans	116
2.12.	Potential competitive positioning in the automotive components sector in the Western Balkans	120

2.13.	Capacity and capacity utilisation of automotive production in Bosnia and Herzegovina	122
2.14.	Annual value-added growth in the manufacturing sector, 2001-06	125
2.15.	Labour productivity trends for selected sectors in Croatia, 1996-2006, indices (2000 = 100)	126
2.16.	Hourly labour costs in the automotive industry, 2004.	131
2.17.	Automotive production in Serbia, in value	135
2.18.	Automotive production in Serbia, complete build-up units (CBUs).	135
3.1.	EU market size (2007) and estimated growth rate by ICT segment (2007-08). . .	151
3.2.	Ease of implementation and growth of the global BPTO industry by segment. . .	151
3.3.	2007 A.T. Kearney Global Services Location Index.	152
3.4.	Growth rates in ICT spending, 2005 (%)	153
3.5.	Number of access paths and service provider revenues.	153
3.6.	Companies planning to offshore service activities (%)	154
3.7.	Primary drivers of outsourcing	155
3.8.	Value and number of BPTO contracts in Europe, first half of the year (2003-08) . .	156
3.9.	Vertical linkages	158
3.10.	Linking software services to sector needs.	158
3.11.	IT related employment per segment in SEE	161
3.12.	Index (100 = Hungary) of average monthly labour costs in services (2005) . . .	162
3.13.	Pupils learning English, French and German in Croatia, Serbia and the EU (%) . .	163
3.14.	Perceived gaps in soft skills in Western Balkan BPTO firms.	165
3.15.	Priority gaps in technical skills in software development companies	165
3.16.	Perceived gaps in hard skills	166
3.17.	Gaps in technical skills in BPTO firms specialising in back office functions . . .	166
3.18.	Western Balkan BPTO firms: revenues and employment.	167
3.19.	Outsourced services provided by Western Balkan IT firms	168
3.20.	Human capital policy barriers.	169
3.21.	Key issues concerning human capital policy	170
3.22.	Reasons for difficulty in filling vacancies	170
3.23.	Impact of skills gaps on software development firms.	170
3.24.	Approach to improving software development and back office and call centres education involving the private sector	171
3.25.	Successful regional educational models: CEMS and TIME	172
3.26.	Telecommunications as a barrier to the operations and growth of BPTO and ICT companies	173
3.27.	Social charges as a percentage of gross wages	174
3.28.	Limitations on increasing competitiveness in Bosnia and Herzegovina	179
3.29.	The Croatian ICT sector: number of companies, employees, income, profit (2001-06).	181
3.30.	Structure of the ICT sector in 2006, according to NCEA	181
3.31.	Obstacles to obtaining skilled ICT workers in Serbia.	198
4.1.	Proposed key pillars to support sustainable competitiveness in the Western Balkans	206



From:
Sector Specific Sources of Competitiveness in the Western Balkans
Recommendation for a Regional Investment Strategy

Access the complete publication at:
<https://doi.org/10.1787/9789264055698-en>

Please cite this chapter as:

OECD (2009), "Business Process and Information Technology Outsourcing", in *Sector Specific Sources of Competitiveness in the Western Balkans: Recommendation for a Regional Investment Strategy*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264055698-7-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.