ICT SECTOR IN SLOVAKIA

IT ASOCIÁCIA SLOVENSKA

SARIO

Slovak Investment
and Trade Development Agency

Introduction

Information and communication technologies (ICT) sector has become an essential part of the world economy due to spread of internet and other modern technologies that can facilitate and speed up production. ICT specialists turned out to be a valuable resource for companies charged not only with running the ICT infrastructure. According to a Deloitte survey, managers increasingly expect from their IT teams to cut the IT costs (50%), drive innovation in the business through technology (41%), optimise business processes (38%) and support the corporate strategy (27%). This enhanced role of IT specialists is a proof of importance of the ICT sector for future economic growth.

ICT plays an important role in the Slovak economy as well. While in December 2012, the industrial production plummeted by 4.4% in comparison to December 2011, sales of ICT sector grew by 34%. As the average monthly wage in the ICT sector exceeded EUR 1,700 in 2012, it is not surprising that an ICT employee pays approximately two times higher taxes as an average employee in Slovakia. The ICT sector, employing more than 40 000 people and with a significant share of social, health and tax payments, as well as the growth of productivity, is therefore an important pillar of the economy. The period during which the new EU members gained ground by means of low labour cost is coming to an end. If they want to expand dynamically in the future, they have to increase productivity and ICT plays a significant role in this area. It has a great potential for economic growth and post-crisis economy recovery. European strategy called Digital Agenda 2020 accredits 50% share of economic growth of the EU in the course of the last 15 years to ICT, and regards the sector as the main engine of the post-crisis convalescence. An engine that is additionally in concordance with the requirements for sustainable development.

For the definition purposes, ICT sector is defined as consisting of all enterprises / units (including both natural and legal persons) whose principal activity (principal activity contributes 50 and more percent to the value added) belongs to following divisions of Eurostat's NACE Rev. 2 classification[1]:

- Publishing activities
- Motion picture, video and television programme production, sound recording and music publishing activities
- Programming and broadcasting activities
- Telecommunications
- Computer programming, consultancy and related activities
- Information services activities

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[1] The detailed division classification can be found at:

<http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-07-015/EN/KS-RA-07-015-EN.PDF>

Although the term ICT will be used throughout the analysis, the content focuses mainly on telecommunications and computer programming.

Situation in the ICT industry

Slovakia offers many business advantages, such as relatively low wage costs for talented, adaptable and educated work force, foreign languages spoken at rather high level (English and German in particular), business friendly environment, rising labour productivity and educational institutions of high quality in the field of ICT. Similarly important is the focus on connection between research and practical problems that is manifest in the activities of IT Association of Slovakia (ITAS), ICT clusters in Žilina and Košice, as well as the Central European Institute of Technology (CEIT) in the aforementioned cities. For instance, the CEIT in Žilina focuses on innovations in industrial manufacturing process, cooperating with big companies as Volkswagen or Whirlpool. CEIT in Košice, on the other hand, is connected more to research in medicine. For all these reasons, information and communication technology sector has a solid position in the Slovak economy that can be demonstrated not only by the presence of foreign companies (Dell, IBM, HP) but also strong domestic IT companies (ESET, Sygic etc.). Following parts will deal with statistics on their activities but will also give a general overview of the size of ICT sector and foreign investments in the form of SSC – ICT.

## The size of ICT sector in Slovakia

ICT industry is not only one of the pillars of the Slovak economy, but it is also one of a few sectors Slovakia can rely on when searching for sources of potential growth of country' s GDP. The gross value added of the Slovak ICT sector was 3 billion EUR in 2012 and it creates 4,5% of Slovak economy's GDP. This is more than traditional sectors including Agriculture, forestry and fishing (2.8%) or Financial and insurance activities (3.3%).

Information and telecommunication sector	
Gross value added (2012)	2.99 billion eur
Share of GDP (2012)	4.5 %
Average salary in ICT in Slovakia (2012)	1 705 eur
Increase in average salary in ICT (2012 in comparison to 2011)	+ 4.0 %
Average salary in ICT in Bratislava region (2012)	1 962 eur
Number of employees in ICT sector (2012)	45 707

Sources: Regional Statistics Database, Statistical Office of the Slovak Republic 2013

In 2012, ICT sector employed 45 707 people. Within this group, telecommunication accounted for approximately 9 500 employees for the past 5 years. However, computer programming has experienced a real employment boom – after the setback in 2010, employment increased by 83% in the following two years reaching 21 794 persons in 2012. IT sector in Slovakia now

comprises approximately 13 000 economic subjects, half of which are companies.

Employment in computer programming, consultancy and related activities
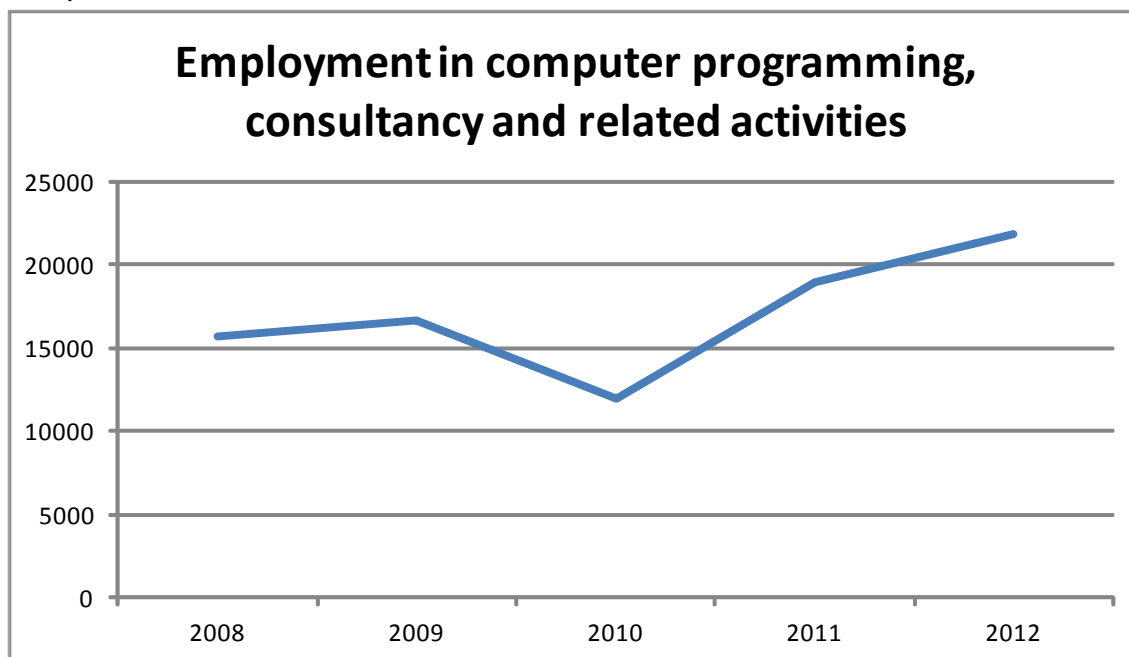
Source: Statistical Office of the Slovak Republic 2013

Employment in ICT sector (in persons)

	2008	2009	2010	2011	2012
Telecommunications	9 529	9 616	9 546	9 509	9 447
Computer programming, consultancy and related activities	15 729	16 640	11 930	18 993	21 794
Other ICT areas	16 291	17 492	17 435	14 915	14 466
TOTAL	41 549	43 748	39 211	43 417	45 707

Slovak IT companies

Solid position of ICT sector in the Slovak economy is demonstrated by strong Slovak IT companies. Added value of Slovak IT suppliers in 2012 grew by 7%. The long-term leadership of tailor-made software development was overcome by outsourcing services. There is a significant shift from ownership of IT services towards outsourcing of IT services by foreign customers. Another development is growth in provision of services supplied to public sector that cost 269 million EUR in 2012; that means a 40% growth in comparison to previous year. With current gradual implementation of e-government services, these numbers might spiral even further.

IT Services Market in Slovakia 2012 (%)

Legend:
- Outsourcing
- Application support
- Tailor-made software development
- New implementations
- Hardware maintenance
- IT Security
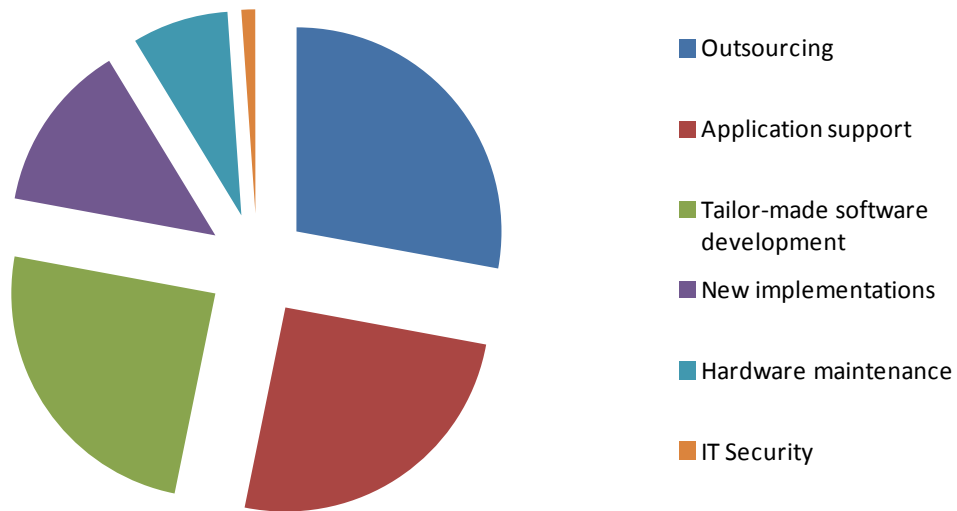
IT Service Providers in Slovakia (2012)

Company name	IT services sales (ths. eur)	Sales by type of service					
		Software development (both packaged and tailor-made)	New implementations	Application support	Outsourcing	Hardware maintenance	IT security
Asseco Central Europe a.s.	118 601	15 673	21 678	37 836	42 462	465	-
T-systems Slovakia, s.r.o.	80 698	●	●	●	80 698	●	-
Soitron, a.s.	56 718	-	15 988	6 033	27 247	5 350	2 100
Atos IT Solutions and Services	47 645	-	18 068	28 577	-	-	-
Tempest, a.s.	41 725	1 443	82	10 801	16 394	8 609	3 038
Siemens PSE, s.r.o.	35 214	35 214	-	-	-	-	-
Ness Slovensko, a.s.	31 135	22 968	1 791	5 698	-	442	-
Alcatel – Lucent Slovakia, a.s.	27 075	6 029	-	-	-	21 046	-
PosAm, s.r.o.	20 776	7 947	4 993	3 485	3 227	1 124	-
RWE IT Slovakia, s.r.o.	19 692	2 954	4 923	11 815	-	-	-
Gratex International, a.s.	18 492	13 954	561	3 211	106	-	412
Softec, s.r.o.	15 334	13 102	-	2 232	-	-	-
Axasoft, a.s.	14 266	1 125	-	1 322	11 230	246	-
Datalan, a.s.	13 255	7 257	409	235	2 324	1 744	-
S&T Slovakia, s.r.o.	11 195	-	3 084	3 574	882	1 260	-

Softip, a.s.	9 497	3 746	-	5 705	46	-	-
Asseco Solutions, a.s.	8 172	587	890	6 185	230	58	-
Sféra, a.s.	7 103	1 744	-	3 330	-	-	-

Source: Trend, 30 May 2013

Software houses (packaged software + tailor-made development)

Company name	Software development 2012 (ths. eur)	Change (%) 2012/2011	Production of packaged software	Tailor-made development (ths. eur)	No. of developers	The most important products of packaged software
Eset, s.r.o.	267 650	164,0	267 650	-	223	Eset Nod32, Antivirus, Eset Smart Security, Eset Cyber Security
Siemens Program and System Engineering, s.r.o.	35 214	-0,9	-	35 214	592	
Asseco Central Europe, a.s.	23 044	-11,1	7 371	15 673	599	StartBANK, eStarBANK, StarCARD, StartBUILD, StarSTAT,..
Ness Slovensko, a.s.	22 968	13,5	-	22 968	271	
Gratex International, a.s.	13 954	-28,1	-	13 954	245	
Softec, s.r.o.	13 102	19,7	-	13 102	194	
Sygic, a.s.	11 581	29,8	11 581	-	n	Mobile Maps, Aura, GPS Navigation, Fleet
PosAm, s.r.o.	7 947	-8,3	-	7 947	99	
Datalan	7 257	37,1	-	7 257	74	
Alcatel – Lucent	6 029	-7,2	-	6 029	85	

Slovakia, a.s.					
Softip, a.s.	4 806	-18,5	1 060	3 746	59	Softip Profit a Softip Packet, Softip Human Resources,..
I.S.D.D. plus, s.r.o.	3 803	31,6	-	3 803	51	
Anasoft APR, s.r.o.	3 121	-34,0	250	2 871	n	
RWE IT Slovakia, s.r.o.	2 954	22,8	-	2 954	104	
Ipesoft, s.r.o.	2 741	-38,0	2 587	154	40	D2000 Enterprise Production, D2000 SELT/SKEI, D2000 CMIS/MES
ICZ Slovakia, a.s.	2 496	44,3	-	2 496	21	
Kros, a.s.	2 109	-5,1	1 983	127	83	Alfa (accounting), Omega (double-entry bookkeeping), Olymp (payrolls, HR)
YMS, a.s.	2 080	-1,6	-	2 080	25	
Visicom, a.s.	1 823	122,6	379	1 444	29	
Sféra, a.s.	1 819	34,8	75	1 744	40	
Axasoft, a.s.	1 590	16,0	465	1 125	33	AXA BIS, applications for POS terminals
Asseco Solutions, a.s.	1 498	9,7	911	587	51	
Tempest, a.s.	1 443	345,4	-	1 443	67	
InterWay, s.r.o.	1 396	-41,5	681	715	28	CMS WebJET, DMS Greeny,

					eshop eSPACE
QBSW, a.s.	917	-33,1	-	917	n	
Gamo, a.s.	603	-21,6	-	603	14	
HT Solution, s.r.o.	446	4,0	396	50	10	
Cígler Software, a.s.	305	-15,0	305	-	n	
Hour, s.r.o.	277	53,2	277	-	7	
Exe, s.r.o.	210	-52,3	-	210	10	

Source: Trend, 30 May 2013

As ICT sector consists of both information and communication technologies, an overview of IT companies is accompanied by a list of telecommunication operators in Slovakia. Their internet services experienced a very good year - sales revenues from internet grew by 10.5%. At the end of the year 2012, there were 2,96 million broadband internet connections, whereof 65% were on cell phone networks. Number of connections thus increased by 266 000.

Telecommunication Operators Ranked by Sales Revenue (2012)

Company	Sales Revenue 2012 (ths. eur)	Change 2012/2011 (%)	Added Value (ths. eur)	Average number of employees
Slovak Telekom, a.s.	837 372	-6,1	466 572	3 835
Orange Slovensko, a.s.	676 029	-7,2	351 559	1 336
Telefónica Slovakia, s.r.o.	190 061	22,4	71 730	406
DanubiaTel, a.s.	55 116	34,1	22 076	308
Towercom, a.s.	49 493	-0,4	30 019	228
GTS Slovakia, a.s.	47 107	1,4	23 336	171
Slovanet, a.s.	33 652	13,0	11 420	196
Energotel, a.s.	13 167	2,3	5 943	87
Antik Telecom, s.r.o.	8 136	4,8	n	145
Satro, s.r.o.	4 578	-5,3	2 672	84

Source: Trend, 30 May 2013

Foreign investments in the form of SSC – ICT

According to world's leading IT research and advisory company Gartner, Slovakia together with Czech Republic, Poland and Asian and Latin American countries belongs to the Top 15 leading locations for Offshore Services (2012).

Country	Political & Legal environment	Cost	Language	Data & IP Security
Czech Republic	Good	Good	Good	Very Good
Poland	Very Good	Good	Good	Fair
Slovakia	Good	Very Good	Good	Good
Hungary	Good	Good	Fair	Good
Romania	Fair	Good	Good	Fair
Bulgaria	Fair	Very Good	Fair	Fair
Ukraine	Poor	Good	Fair	Poor
Belarus	Poor	Good	Poor	Poor

Source: Gartner, 2013

The whole CEE region is attractive for SSC investors because of available and skilled labour force, broad knowledge of languages (see below), geographic and cultural proximity to Western Europe, well-developed infrastructure and lower wage costs in comparison with Western European or North American levels. As Veit Dengler, the General Manager of Dell Business Centre Bratislava, put it: *"Among the important factors were the legal system, the state of the economy, the business climate and the quality of governance. The number one criterion, however, were the people. It was they who had the greatest impact on our company's growth."*

Shared Services Centres in the ICT industry is very well-developed in Slovakia. The widest range of activities is offered by IBM with its 32 SSCs in Slovakia including accounting or contract administration services. AT&T takes the first place in the highest increase of number of employees in 2012 in the fields of net engineering and customer support. These global companies continue to expand and offer hundreds of vacancies. The biggest demand for programmers is especially for JAVA developers.

Company	Number of employees in 2012	Services
IBM International Services Centre	4 330	Contact administration, budget planning, financial reports, accounting
AT&T Global Network Services	2 900	Net engineering and customer support (mostly EMEA region)

Slovakia		
T-Systems Slovakia	2 596	Distant server administration and monitoring
Dell	1 839	Technical support, accounting, business analyses,..
Hewlett-Packard Slovakia	1 700	IT infrastructure support, optimalization process

Source: Trend, 30 May 2013

IT friendly environment in Slovakia

In Slovakia, one can now witness a booming ICT sector with an international success. One example is the Wayra programme of Telefónica Digital that supports innovation and start-ups in the ICT sector to stimulate future economic growth. With presence in 12 countries it has received more than 13 000 applications which makes it the biggest platform for the support of start-ups in the ICT sector. During the local Wayra Week in Prague (15.-17.5.2013) 9 out of 10 start-up companies from CEE region that succeeded and received 50 000 EUR and opportunity to cooperate with Wayra Academy were Slovak.[2] Proof of a favourable ICT environment can be found in several international indexes that map Slovakia's performance in the ICT.

The most complex index for comparison of ICT sectors in individual countries is the Networked Readiness Index published in the *Global Information Technology Report* by The World Economic Forum. Using indicator groups as *environment, readiness, usage* and *impact*, it measures the preparedness of an economy to utilize ICT to increase competitiveness and well-being. Slovakia's position improved by 3 places and in 2013 it was on 61st place out of 142 countries, with the *readiness* subindex scoring the highest (4,1 out of 7 points). Slovakia achieved the best placement on following indicators: mobile network coverage as % of population (1st place), adult literacy rate (15th place), software piracy rate (25th place), individuals using Internet (25th place) and intensity of local competition (27th place).

Probably the most globally recognized index that measures inequalities between the countries in terms of access, use and knowledge of ICT is ICT Development Index. According to it, the extent to which ICT sector is being developed in a country depends greatly on a general access to and use of information technologies, as well as the overall level of education of the population. In the comparison of 155 countries Slovakia takes place no.39 in the year 2010, as well as in 2011 driven by a great ICT use.

One can thus observe an improving situation that reflects country's ICT potential. For example, the Internet is - despite accessibility slightly below EU

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[2] Source: Telefónica 2013, https://www.telefonicaando2careers.com/sk/o-nas-/novinky/wayra-podpor%C3%AD-9-start-upov-zo-slovenska/

average (75% of households) - used by an above-average number of Slovaks (68%). The level of citizens' computer and Internet literacy (24% and 12% with high level of skills) is around the average level of EU28. In 2012, 77% of Slovaks used internet in last 3 months and 60% are frequent users according to Eurostat surveys. Both values are above EU-average. Although the digitalization of society does not contribute directly to the increase of country's GDP, it may have an indirect effect on e-government, bigger interest in IT studies and effective use of information technologies in all kinds of workplaces.

Excellent work force

Europe will face a shortage of up to 900 000 ICT professionals by 2015. According to forecasts of IT Association of Slovakia (ITAS) and the Košice IT Valley Cluster, the number of ICT jobs in the eastern regions of Slovakia may increase to 10 000 within the next 5 years. It is therefore pertinent to look at the educational system raising future generations of experts.

Share of ICT professionals in the total workforce (2011)
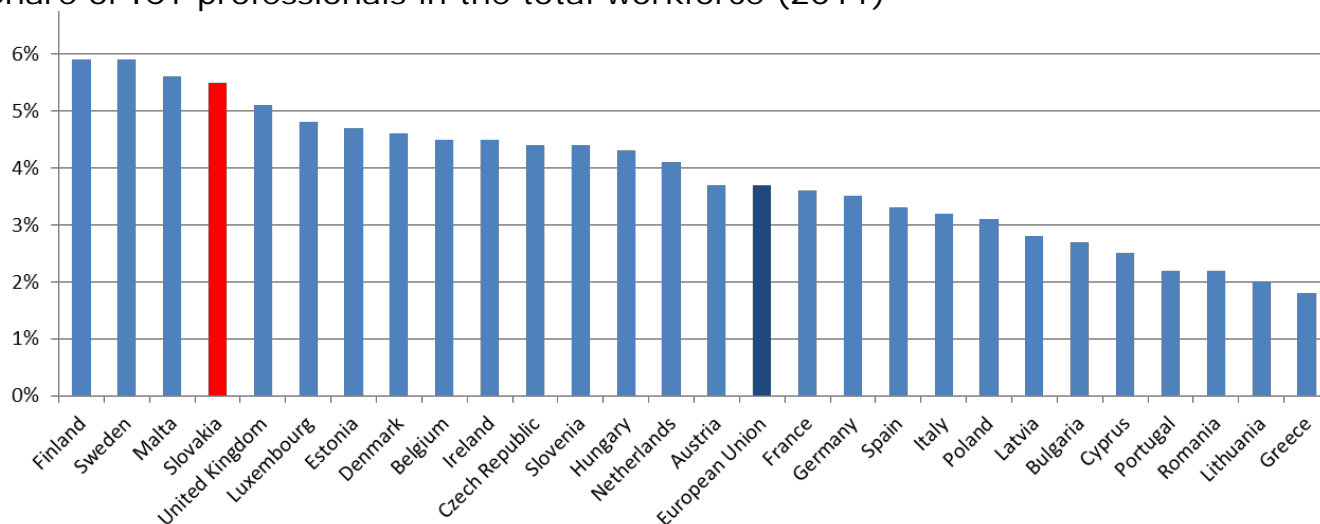
Source: European Commission, Digital Scoreboard 2013

At grammar school level, there are currently (2013/2014) around 500 students enrolled in programmes focusing on informatics and 250 graduated last year.[3] Despite its size, grammar school informatics education is very successful. For instance, Slovakia has won 77 medals at International Olympiad in Informatics (IOI). At IOI in Brisbane in 2013, final Slovak results were 2 gold, 1 silver and 1 bronze medal. 77 medals make Slovakia the 7th most successful country in the history of IOI, ranking except Romania and Poland only behind states like China, Russia, USA and South Korea.[4] With the population of only 5,4 million inhabitants, this result is truly remarkable. The

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[3] UIPS 2013

[4] Complete ranking can be found at: http://ioi.eduardische.com/countries/?sort=medals_desc

most renowned grammar schools in the informatics field are Grösslingová 18 Grammar School (http://www.gamca.sk/) and Grammar school of Jur Hronec (http://www.gjh.sk/) in Bratislava. Pupils of the former account for 12 medals at IOI. The latter, on the other side, has its own Cisco student technology center for schooling. These successes and high-quality secondary education contribute to popularity of ICT among the youth and create an incentive for further studies.

Concerning tertiary education, following universities offer study programmes in the various sub-fields of ICT:

- **Comenius University in Bratislava –** Faculty of Mathematics, Physics and Informatics (http://www.fmph.uniba.sk/index.php?id=970)
- **Slovak University of Technology in Bratislava –** Faculty of Electrical Engineering and Information Technology (http://www.fei.stuba.sk/english.html?page_id=793) and Faculty of Informatics and Information Technologies (http://www.fiit.stuba.sk/en.html?page_id=749)
- **The Technical University of Košice –** Faculty of Electrical Engineering and Informatics (http://www.tuke.sk/tuke/faculties-1/fei/)
- **University of Žilina –** Faculty of Management Science and Informatics (http://www.fri.uniza.sk/en)
- **University of Economics in Bratislava –** Faculty of Economic Informatics (http://euba.sk/faculties/faculty-of-economic-informatics)

In 2012, there were altogether 5 797 studying informatics or telecommunication on Bachelor or Master level and 239 PhD. students. 2013 students finished their Bachelor or Master degree in 2012 and 51 received a PhD. diploma. Market is however still demanding more workforce and with higher specialization. Therefore, many companies (e.g. Cisco) proactively cooperate with universities to raise new generations of their employees. Some companies, as Aptech Europe, started even to connect university education with possibility to gain international professional IT certificates, that reduce employer's cost of schooling for new employees (see for instance cooperation with Paneuropean University at: www.itstudium.sk).

Finally, language knowledge is also an important asset in the ICT sector, especially in relation to SSCs. At grammar schools and vocational high schools, the overwhelming majority learns a foreign language According to Eurostat data from 2011, Slovak pupils learn on average 1.5 foreign languages. In V4 region, this is the same rate as in Poland but higher than in Hungary (1.0) or Czech Republic (1.3). English is learned by 98.7%, German by 61.5% and French by 17.2% of high school pupils. Given the large Hungarian minority, there are also 67 high schools with 11 246 pupils where Hungarian is used as an official language in class.

Foreign languages at grammar schools and vocational high schools

Pupils learning a foreign language
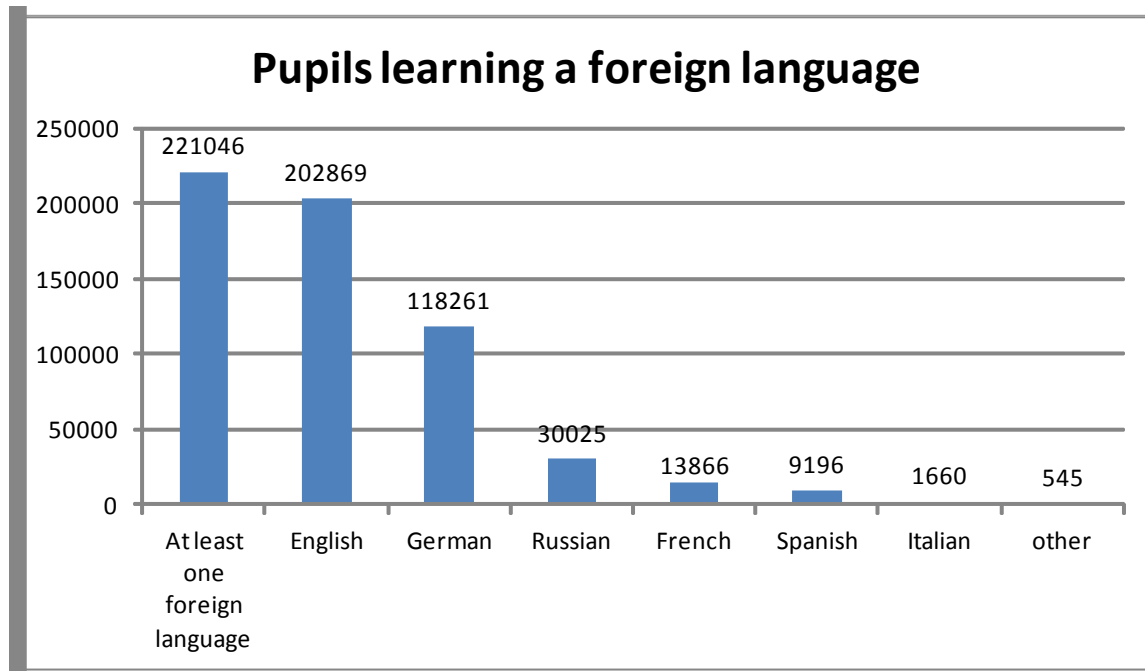
Source: UIPS 2013

Language education is also supported in study programmes concerning ICT on university level. For example, at Faculty of Electrical Engineering and Information Technology and Faculty of Informatics and Information Technologies at Slovak University of Technology, English language is a mandatory course and there is opportunity to choose a second optional foreign language. Language courses prepare the students to communicate and read academic literature in their field of study. Moreover, the Slovak University of Technology also offers courses in English for foreign students and Slovak students of informatics have the possibility to do part of their studies abroad thanks to the project "Joint Degree in Media Development Engineering." Students of ICT at other Slovak universities have similar opportunities.

Number of graduates within selected programmes

STUDY PROGRAMME	2011		2012	
	under-/graduate	postgraduate	under-/graduate	postgraduate
Cognitive science	3	0	10	0
Informatics	756	15	621	14
Applied informatics	530	14	592	15
Computer engineering	150	0	143	0
Information systems	106	0	104	0
Software engineering	68	8	58	1
Artificial Intelligence	14	7	16	2
Telecommunication	489	12	469	19
TOTAL	**2116**	**56**	**2013**	**51**

Source: UIPS 2013 – daily and external form of studies, only Slovak citizens at Slovak public universities

Number of students within selected programmes

STUDY PROGRAMME	2011/2012		2012/2013	
	under-/graduate	postgraduate	under-/graduate	postgraduate
Cognitive science	27	0	26	0
Informatics	2404	116	2360	104
Applied informatics	2343	112	2484	103
Computer engineering	544	0	481	0
Information systems	279	0	268	2
Software engineering	147	20	138	20
Artificial Intelligence	35	11	40	10
Telecommunication	1454	98	1300	76
TOTAL	**7233**	**357**	**5797**	**239**

Source: UIPS 2013 – daily and external form of studies, only Slovak citizens at Slovak public universities

Salary expectations in regional comparison with Czech Republic and Poland

	Slovakia				Czech Republic				Poland	
	Bratislava		Košice		Prague		Brno		Krakow	
	Gross Monthly Salary		Gross Monthly Salary		Gross Monthly Salary		Gross Monthly Salary		Gross Monthly Salary	
	from	to	from	to	from	to	from	to	from	to
SSC Director with fluent English	5 000 €	6 000 €	4 000 €	5 000 €	5 500 €	6 500 €	4 500 €	5 500 €	5 000 €	6 100 €
IT Manager with fluent English	3 000 €	4 000 €	2 500 €	3 000 €	4 300 €	5 500 €	3 700 €	4 700 €	2 600 €	4 000 €
IT Specialist with fluent English	1 900 €	2 300 €	1 800 €	2 100 €	2 700 €	3 100 €	2 200 €	3 000 €	1 900 €	2 800 €
SSC Director with fluent English+ German	5 500 €	6 500 €	4 100 €	5 100 €	6 000 €	7 000 €	5 000 €	6 000 €	5 500 €	6 600 €
IT Manager with fluent English+ German	3 500 €	4 500 €	2 600 €	3 100 €	4 800 €	6 000 €	4 200 €	5 200 €	3 100 €	4 500 €
IT Specialist	2 400	2 800	1 900	2 200	3 200	3 600 €	2 700	3 500	2 400	3 300 €

with fluent English+ German	€	€	€	€	€		€	€	€	

Source: LUGERA: Salaries for Selected Positions, Brief Research for SARIO, as of September 2013

IT clusters

Company clusters are a widely studied economic phenomenon. The connections between various kinds of actors including producers, suppliers, retailers, governmental bodies, educational institutions or media foster many beneficial effects. They boost competitiveness and innovation (research, testing, product development …) and enable flexibility as the inputs (capital, labour…) can be easily rearranged in the most convenient way. Research also shows that clusters increase the survival rate of firms and salaries of employees, companies create more jobs and pay more taxes.

Currently, there are around 76 IT clusters in Europe making ICT the economy sector with the highest number of clusters.[5] The creation of clusters is an important political topic in the European Union[6] generally and in the CEE region more specifically. The positive effects are one of the reasons why the V4 countries Slovakia, Czech Republic, Poland and Hungary renewed their Memorandum of Understanding in the field of development of cluster cooperation for the period 2014-2020.[7] The biggest IT clusters in Slovakia are in Košice and Žilina

Košice IT Valley

One of the examples of IT clusters in Slovakia is Košice IT Valley. It is an association of more than 30 legal entities most of all government bodies, leading domestic and foreign IT companies and education institutions. The communication platform created between them leads to the acceleration of the development of IT industry in the region. The most active members include T-systems, Siemens, Ness Technologies, RWE IT Slovakia, city Košice etc. Košice IT Valley already created around 6 000 new jobs in the last 6 years of its existence and the number is still increasing.

Košice IT Valley believes to create conditions for establishment of centre of IT excellence in the future. Its activities concentrate both on training of job seekers (mostly SAP ERP trainings) and attracting a new generation of students to become IT Experts. This project is a unique inspiration for other associations and IT companies in the field of securing IT workforce in Slovakia through organizing IT summer camps for both primary school and high-school

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[5] For more information about cluster dynamics, policy and management watch programme "On Clusters" of The Cluster Observatory:
http://www.clusterobservatory.eu/index.html#!view=classroom;url=/classroom/OnClusters/ClusterDynamics/

[6] See for example Commission's communication *Towards world-class clusters in the European Union:*
Implementing the broad-based innovation strategy available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0652R%2801%29:EN:NOT

[7] Source: http://www.siea.sk/uvod-aktuality/c-5285/spolupraca-krajin-v-oblasti-rozvoja-klastrov-sa-osvedcila-a-bude-pokracovat/

students aimed at Lego robotics, computer networking, programming and design.

ZAICT

Another cluster with 12 members is located in the north of Slovakia in Žilina, consisting of government bodies, IT companies, university and Slovak National Library. IT technology has a long tradition in this region, however, after creation of many small companies in the 90's, the mutual communication faltered. ZAICT cluster solved this problem. Its aim is inter alia to maintain a communication platform between members, increase awareness about ICT sector, support R&D and contribute to development of knowledge-based economy. Companies offer training facilities, participate in forming study plans of university programmes and cooperate with students through internships and research projects. Cluster's activities include also regular interactive lectures about ICT technologies or project Incubator that offers free hardware, legal advice, marketing campaign and financial benefits for participants. Moreover, thanks to mutual discussions, participants can create common positions and use these as inputs into regional policy.

Start-up community

The development of IT industry in Slovakia is interesting not only because of the country's attractiveness for outsourcing centres, but also because of the emergence of a start-up ecosystem which has the potential to nurture new innovative technology companies and thus add new names to the list of already existing leaders such as Eset, Sygic, Ipesoft or Anasoft. One of the success stories of Slovak IT industry is also the company WebSupport. It was founded in 2002 and became the biggest provider of webhosting services in Slovakia by 2012. With a solid base at home, WebSupport is now expanding to Czech Republic, Austria and Hungary.

Since 2011 all Slovak start-ups can participate in *Startup Awards.SK* - . In 2012 there were 4 different categories: Society, Art&Design, Digital and Science. Winners get a chance to visit innovation hubs in Finland, Israel, USA or United Kingdom. ICT innovations were represented in three categories. The category Society was represented by project Mapz that helps blind people to overcome obstacles using the camera in their mobile phone and vibration signals. Thanks to project Excalibur in the category Digital you can avoid entering long passwords by signing up. The last category Science was represented by project A*Space for diagnostics of human patogens.
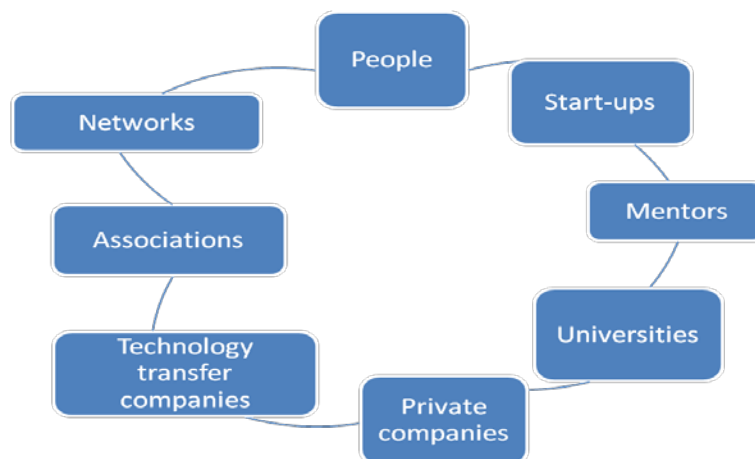
Vision of IT industry – steps to be taken

Exploit the potential of SSC – ICT

As mentioned above, Slovakia is becoming a hub for Shared Services Centres in the field of ICT and financial services. This is important not only due to increased employment in the jobs with above-average value added, but also as a potential of innovation development. IBM and T-Systems, for instance, started in Slovakia with establishment of SSCs but nowadays they are developing top software solutions. The latter has since its establishment in 2006 managed to employ more than 2000 people in Košice that offer services to clients in more than 20 countries. T-Systems has also contributed to creation of several IT labs at universities and Košice IT Valley that benefits both the company and the community and creates potential for future growth

Hewlett-Packard, another large SSC actor, has been active in Czechoslovakia since 1967 but established its European IT Operation Centre in Bratislava only in 2004. With its main expertise on SAP solutions, application management, software development and localization services, it is currently employing around 1700 people. In the years ahead it will strive to achieve leadership in value added services, especially cloud computing.

As these success stories demonstrate, SSCs are a recent phenomenon and their close connection to research and academia creates prospects for future growth in this area.

Investment into education

Dual Vocational Education is repeatedly proposed as a solution to make graduates better prepared for a fast-changing labour market – i.e. practical on-the-job form of education that incorporates students into enterprise's internal processes. Companies need to be more involved in the learning process, not only at university level, but also through cooperation with secondary schools. This is necessitated by the increased need for dynamic and innovative workforce able to cover a wide range of topics.

One example is collaboration between the Secondary Vocational School for Electrotechnics in Košice and T-Systems Slovakia that offer a 3-year long advanced ICT training for students. IngA programme is another example of cooperation between Volkswagen and 5 Slovak universities that offers internships, scholarships and various excursions to students in order to attract qualified graduates to Volkswagen Slovakia in the future. It is also worth mentioning the activities of Cisco that incorporates some of the content of their IT certificate courses (CCNA, CCNP) into both high school and university curricula. For this purpose, it actively cooperates with the Ministry of Education and around 70 educational institutions that have one of the best administrative systems to support education. Cisco regards cooperation between private and state institutions and industrial and academic spheres as a key to success of its training programme. This attitude should go as an example for approach to broader education as well.

Enhancement of ICT ecosystem

The cycle of innovative IT products is completed by companies providing technology transfer – the scientific idea is materialized into the industrial product used for commercial purposes. Technology Transfer Company evaluates the possibilities of commercial use of the idea, provides patent protection, market testing and financing of the whole process. The examples of Technology Transfer Companies in Slovakia are Neulogy and CEIT. Also thanks to their activities, a vibrant start-up ecosystem has developed that contributes to growth of the ICT sector. However, there is still room for improvement concerning cooperation between the various actors in the ecosystem outlined above and the links between them have to be strengthened.

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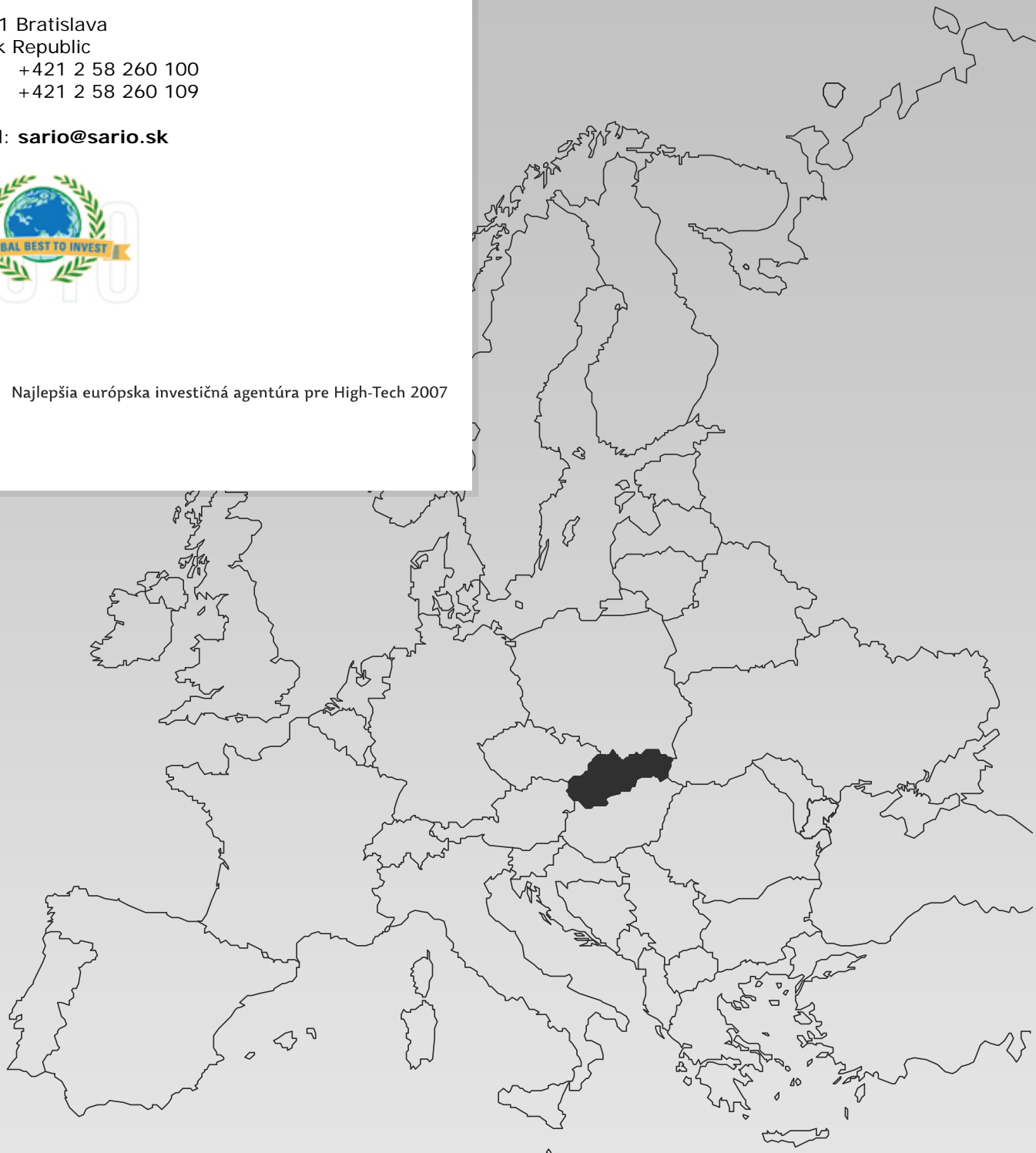Trnavska cesta 100

821 01 Bratislava
Slovak Republic
Tel: +421 2 58 260 100
Fax: +421 2 58 260 109

E-mail: **sario@sario.sk**

Najlepšia európska investičná agentúra pre High-Tech 2007

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