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Transnationals from Asian Countries in IT Goods and Services Industry

Abstract. Asian countries have become actively involved in Information and commu-nication revolution. They have become leading exporters of ICT goods and IT services. The article depicts transnationals from Asian countries, their growing posi-tions and forms of operations (including contract manufacturing and business process outsourcing).
Keywords: Transnationals (TNCs) from Asian countries, ICT (information and communication technologies), ICT goods, contract manufacturing, IT services, business process outsourcing (BPO).

By the 2010s the role of Asian countries[1], especially Asian giants — China and India — in the international economy increased. In 2013 China was second in the world by its gross domestic product (GDP) ($ 9240.3, 12.3% of the world GDP) after the USA ($ 16800 B, 22.5% of the world GDP). India was one of the top 10 economies by GDP in 2013 ($ 1876.8 billion)[2]. By their gross domestic product South Korea ($ 1304.6 billion; 1.7% of world GDP), Indonesia ($ 868.3 billion), Turkey ($ 820.2 billion) were among the first 20 economies[3]. Together with Mexico they are called "MIST group" and are considered as new rapidly developing "drivers" of world economy.

At microeconomics level, the number of companies and banks from Asian countries in international ratings has increased immensely. On the Forbes list of 2000 companies published in 2014 there are 499 companies and banks from Asian countries, ¼ of the total: 207 from China (including those from Hong Kong), 61 companies and banks from South Korea, 54 from India, 47 from Taiwan (Province of China), 20 from Saudi Arabia, 17 from Singapore, Malaysia, Thailand, 14 from United Arab Emirates, 12 from Turkey, 10 from the Philippines, 9 from Indonesia[4]. Among 2000 companies of the Forbes magazine list published in 2014 (data on sales and market capitalization refer to 2013) China ranked third after the USA and Japan. In case Japan with 226 companies is included, 725 companies (36.5%) on the Forbes list are from Asian countries[5].

China, India, Republic of Korea, and also Taiwan, Singapore, Malaysia have taken an active part in Information and Communication Revolution (ICR). It is possi-

[1] Here and onwards, Asian countries, with the exception of Japan.

[2] http://wdi.worldbank.org/table/1.1; http://wdi.worldbank.org/table/4.10 (access date: 23.05.2014).

[3] http://data.worldbank.org/indicator/NY.GDP.MKTP.CD/countries/1W?page=6&display=default. (access date: 10.10.2014).

[4] http://www.forbes.com/global2000 (access date: 10-05-2014).

[5] http://www.forbes.com/global2000 (access date: 10-05-2014).

ble to state that involvement of these countries in ICR played a major role in their economic successes. China has become the first world exporter of information and communication technology goods (ICT goods) that include telecommunication, audio and video, computer and related equipment; electronic components; and other information and communication technology goods. In 2000 China ranked 9th by the volume of ICT goods exports. In 2012 71% of world exports of ICT goods originated in developing countries as compared to 43% in 2000. The part of Asian developing countries in the world ICT goods exports increased in 2000–2012 from 39% to 67%, that of China from 4.4% to 31%. In 2012 the second ICT goods exporter was Hong Kong (China), fourth was Singapore, fifth Taiwan and sixth South Korea, former leaders USA and Japan having moved to 3rd and 7th rank.

Table 1

Exports of ICT goods* *($B and %)*, 2000–2012

	Exports of ICT goods, *$ billions*		**% of world exports**	
	2000	2012	2000	2012
World	998.8	1800.2	100	100
Developed countries	568.7	522.6	56.9	39.0
Transition economies	0.9	3.6	0.1	0.2
Developing countries	429.2	1273.9	43.0	70.8
Africa	1.1	1.9	0.1	0.1
Latin America	38.9	66.7	3.9	3.7
Asia	389.2	1205.3	39.0	67.0
East Asia	216.8	957.4	21.7	53.2
South-East Asia	170.4	239.3	17.1	13.3
South Asia	0.9	5.8	0.1	0.3
West Asia	1.2	2.7	0.1	0.15
China	44.1	554.3	4.4	30.8
Hong Kong	50.3	207.9	5.0	11.5
South Korea	59.4	94.0	5.9	5.2
Taiwan	62.9	101.0	6.3	5.6
Singapore	75.6	116.0	7.6	6.4
Malaysia	51.7	63.5	5.2	3.5
Philippines	14.8	15.3	1.5	0.8
USA	156.7	139.4	15.7	7.7
Japan	108.8	73.1	10.9	4.1
Germany	46.2	62.5	4.6	3.5
Netherlands	38.2	56.6	3.8	3.1

Source: World Development Indicators, http://wdi.worldbank.org (13.04.2014).

ICT goods are produced in Asian countries by affiliates of Western and Japanese transnationals. But the significance of non-equity modes of international production (contract manufacturing, or original equipment manufacturing, original design manufacturing, etc.) is more important. A large share of electronic goods is produced by transnationals from Asian countries.

If we look at transnationals from Asian developing countries, one of their particularities is a great number of electronics and in general ICT goods and services producing companies. In 2008 in the UNCTAD list of 100 transnationals from developing countries and transition economies among 74 Asian TNCs 20% were from electronic industry, while among 93 transnationals from developed countries from the UNCTAD list of major 100 world transnationals ranked by foreign assets this share amounted only to 8%[6]. Asian ICT goods producing transnationals are well known by their brands, such as Samsung Electronics (sales in 2013 $209 B, 22th in the Forbes 2000 rating of 2014) and LG Electronics from South Korea, Flextronics from Singapore, Acer, Asus, Quanta, Compal, Wistron from Taiwan, Lenovo, ZTE, Huawei from China.

Table 2

Leading Asian companies producing ICT goods, 2014

№	Rank in Forbes 2000, 2014	Company	Country	Rank in the industry	Sales 2013, *$ B*	Market capitalization 2013, *$ B*
1	22	Samsung Electronics	South Korea	1	208.9	186.5
2	139	Hon Hai Precision	Taiwan (Province of China)	2	127.2	37.3
3	190	TSMC	Taiwan	4	20.1	102
4	439	SK Hynix	South Korea	6	12.9	24.9
5	566	Lenovo Group	Hong Kong, China	3	37.2	11.9
6	634	Quanta Computer	Taiwan	4	29.7	10.3
7	766	LG Electronics	South Korea	4	53.1	10
8	787	LG Display	South Korea	7	24.7	9
9	861	Axiata Group	Malaysia	7	5.8	17.7
10	968	Asustek Computer	Taiwan	6	15.5	7.5
11	1029	Mediatek	Taiwan	11	4,6	24
12	1165	Delta Electronics	Taiwan	14	5.8	14.9
13	1169	Advanced Semiconductor	Taiwan	12	7.4	8.6

[6] World Investment Report, 2010, UN. N. Y. — Geneva. Ann., Table 26.

14	1199	Flextronics	Singapore	15	24.7	5.6
15	1205	Pegatron (Asus)	Taiwan	16	32.2	3.5
16	1220	ZTE	Hong Kong, China	8	12.1	7.2
17	1335	TCL Corp.	China	8	13.8	3.5
18	1336	Avago Technologies	Singapore	15	2.7	16.2
19	1385	Innolux	Taiwan	7	14.2	3.2
20	1401	AU Optronics	Taiwan	21	14	11.4
21	1492	Compal Electronics	Taiwan	8	23.1	3.1
22	1553	Wistron	Taiwan	9	22	2
23	1572	Hikvision	China	22	1.5	11.4
24	1668	BOE Technology Group	China	25	5.4	4.8
25	1740	Great Wall Technology	China		15.1	0.5
26	1822	Inventec	Taiwan	11	14.9	3.5
27	1862	TPK Holding	Taiwan	28	5.9	1.9
28	1865	WPG Holdings	Taiwan	29	13.7	2
29	1947	Acer	Taiwan	12	12.1	1.6
30	1968	Inotera Memories	Taiwan	29	2	5

Source: compiled from http://www.forbes.com/global2000 (20.04.2014).

In the Forbes magazine list of 2000 global companies and banks in 2014 there were 96 ICT goods producing companies (they are divided into several subsections: hardware, semiconductors, electronics, consumer electronics, telecommunication equipment). This division is rather arbitrary. For example, Samsung Electronics is regarded as semiconductors producing company, though it is famous for its mobile phones, television sets, personal computers and other equipment. In fact, many companies operate in several subsectors of ICT goods production and in ICT services production as well (IBM, Fujitsu). We have compiled a unified table of Asian ICT goods producing companies (excluding companies from Japan) of the Forbes list. Among 96 ICT goods producing companies about 1/3 were from Asia. The most numerous were the companies from Taiwan, they were 17, South Korea had only 4 companies, but one of the world leading electronic TNCs Samsung Electronics was among them. There were 6 companies from China (including Hong Kong), the first of which was Lenovo created in 1984 by employees of the China Academy of Sciences.

The companies from Taiwan were numerous, but they operated mostly not in Taiwan, but in continental China.

One of the biggest electronics companies is Hon Hai (Foxconn), second after Samsung Electronics, with sales of $ 127 B in 2013. But its brand is not well-known as it is engaged mainly in contract manufacturing (one of non-equity modes of international production). According to UNCTAD, non-equity modes of international production in electronics industry generate about 1/2 of world electronics exports[7]. Hon Hai had 1.2 million employees in 2012, mostly not in Taiwan but in China where its factories assembled iPhones and iPads for American company Apple. Work conditions at Hon Hai factories in China were poor, discipline severe, conditions of life miserable, wages low, while iPods and iPads were well sold in international markets and Apple enjoyed high profits; this situation caused workers' suicides and provoked strikes, for these reasons the Hon Hai factories in China were the object of discussions in mass media"[8]. Hon Hai is also a subcontractor of Apple's competitor — Samsung Electronics. And it works under contracts for HP, Microsoft, Intel, Dell, Sony-Ericsson and other TNCs. Samsung Electronics was one of subcontractors of Apple in production of transistors.

Second place among leading contractors is occupied by Flextronics from Singapore (160000 workers in 2009, sales, $25 B in 2013), and its main customers are Alcatel, HP, Microsoft, Intel, Dell, Sony-Ericsson, and also Chinese Lenovo and Huawei.

Among main subcontractors working under contract manufacturing system we also see such TNCs from Taiwan as Quanta, Compal, Wistron, Inventek. Each subcontractor has more than dozen customers, and each customer — a TNC from USA, Europe or Asia — has more than dozen subcontractors that are not small companies oriented to serve one big client, but transnationals with sales of more than $ 10 B. These subcontractors organize production units not only in their home countries (Taiwan, South Korea, Singapore), but abroad, mostly in continental China, but also in Vietnam, Malaysia, Philippines, Czech Republic, Hungary, Poland[9].

We observe the formation and functioning of global network systems global production chains or chains of value added creation, with relations of cooperation and competition closely interwoven. To find a place in such a chain is a chance for a country or a company.

"The Economist" authors ("The World Turned Upside down", a special report) consider that a peculiar feature of Asian transnationals is that they introduce technological and business management innovations. Some technological innovations are called "frugal or reverse" innovations as they are aimed at producing goods and services affordable for low income strata of population. For instance, a cheap ap-

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[7] World Investment Report, 2011, UN, N. Y. — Geneva, 2011, p. 154.

[8] http//www.nytimes.com/2012/01/26/business/ieconomy-apples-ipad-and-the-human-costs-for-workers-in-china.html?_r=2 (access date: 02.06.2012).

[9] Цветкова Н.Н. ТНК в странах Востока: прямые иностранные инвестиции и глобальные производственные сети // Восточная аналитика. Ежегодник 2012 г. М.: ИВ РАН, 2012, с. 63–75.

paratus for making electrocardiograms that is placed in a back sack and that costs about $800 was invented. It can become a real revolution for medical services not only in developing countries of Asia and Africa, but in the Moscow region as well. Indian Tata Consultancy Services and Tata Chemical have developed a cheap water filter working on rice straw. Indian Godrej has developed a cheap refrigerator ($70) that can work on batteries[10]. In this connection I recall Soviet meat mincing manual devices which were extremely popular in African markets, as they were cheap and could be used without electricity (which is not always supplied everywhere and anytime in Africa and is rather expensive). If you are short of money you don't need to use most sophisticated up-to-date things. These innovations can be also regarded as intermediate technologies.

IT services production and exports

As for India, it has found another niche in the global system. India has become the first world exporter of computer services and business proceedings outsourcing services (BPO), having replaced Ireland[11]. In 2012 exports of computer and information services (without BPO) from India amounted to $47B, 18.0% of world total. China was fifth with $14.5B, 5.5%. In general, the volume of IT services produced in China is much higher than that in India, but it is used for internal market, it is embedded in ICT equipment produced in China.

Table 3

Exports of computer and information services, 2000–2012

	2000, *$B*	**2006,** *$B*	**2010,** *$B*	**2012,** *$B*	**2012,** *%*
India	4.0	21.4	40.2	47.3	18.0
Ireland	5.5	23.0	36.9	46.9	17.9
Germany	3.8	10.0	16.5	19.4	7.4
United States	6.9	5.6	14.0	15.5/2011/	5.9
United Kingdom	4.3	12.4	13.5	14.4	5.48
China	0.36	3.0	9.3	14.5	5.5
Russia	0.06	0.6	1.4	2.1	0.8
Philippines	0,08	0,1	1,50	2,0	0.8
Hong Kong	0,06	0,2	0,68 (2009)	0,9 (2011)	0.4
Singapore	0,25	0,6	1,8	...	-

[10] The World Turned Upside down. A special report on innovation in emerging markets. The Economist, L. April, 17, 2010. www.//economist.com (access date: 12.05.2010).

[11] Цветкова Н.Н. ТНК и развитие информационно-коммуникационных технологий в странах Востока // Восточная аналитика. Ежегодник 2011 г. М.: ИВ РАН, 2011. С. 39–47.

Malaysia	0,08	0,6	1,45	2,0	0.8
South Korea	0,01	0,25	0,30	0,46	0.2
Taiwan	0,12	0,19	0,22	0,5	0.2
Sri Lanka	0,07	0,1	0,27	0,44	0.2
Morocco	...	...	0.30	0.4	0.2
South Africa	0.05	0.1	0.29	0.3	0.1
Egypt	0.02	0.05	0.15	0.16	0.05
Tunisia	0.02	0.02	0.04	0.041	...
Developing countries	5.8	29.2	62.0	78.3	29.8
Transition economies	0.2	1.1	2.4	4.4	1.6
Developed countries	39.7	98.2	153.6	180	68.6
World	45.7	128.5	218.0	262.7	100

Source: http://unctadstat.unctad.org (14-04-2014)

In 2009 India was the first by AT Kearney offshore services location index, it was followed by China, Malaysia, Thailand, Indonesia, Egypt (6th), Philippines, Chile, Jordan, Vietnam, USA (14th), Ghana (15th), Sri Lanka, Tunisia, Mauritius (25th), Senegal (26th), Morocco (30th), Czech Republic (32d), Russia — (33d), South Africa — 39th (in total 50 countries). There are three groups of indicators: financial attractiveness — 1, people's skills and availability — 2, business environment — 3[12].

By AT Kearney offshore services location index 2011, India was the 1st, China 2rd, Malaysia — 3rd, Egypt — 4th , Indonesia — 5th, Russia — 20th, Sri Lanka — 21st, Tunisia — 23d, Ghana — 27th, Senegal — 29th, Mauritius — 36th, Morocco — 37th, 38 — Ukraine — 38th , 45 — South Africa — 45th. By people's skills and availability in 2011 US was the 1st, India — 2nd, China — 3rd, Russia — 8th, Ireland — 9th, Egypt — 16th, Israel — 17th. By financial attractiveness in 2011 Vietnam was the first, Senegal — 3d, Ghana — 5th, Egypt — 9th, Tunisia — 10th, Ukraine — 13th, Morocco — 15th, Russia — 25th [13].

India, with its first-mover advantage and deep skill base, remains the unquestioned leader in the Index — a half-point ahead of China and a full point in front of Malaysia — and still maintains the lion's share of the IT services market. On top of that, India's IT services stalwarts are moving up the value chain. Companies such as Infosys and Wipro are pursuing their own R&D capabilities and expanding well beyond their traditional vendor roles.

[12] http://www.slideshare.net/ashamlawi/outsourcing-global-services-location-index-2009 (access date: 20.04.2014).

[13] http://vinaoutsourcing.com/vietnam-lead-financial-kearney-2011/ (access date: 15.05.2014).

China has begun offering specialized skills not only in Chinese and English, but also in Korean, Japanese. Its most attractive areas are high-end analytics and advanced IT, where it is an alternative to Russia and Eastern Europe, and BPO, where it can be competitive with India. China is now developing R&D capabilities as a necessary adjunct to its manufacturing capabilities, which creates a strong foundation for knowledge process outsourcing, also called KPO services.

Foreign affiliates play an important role in ICT services in India. But the share of "the big three" companies: Tata Consultancy Services (TCS), Infosys, Wipro is rapidly increasing. There are also such actors as Mahindra Tech (former Satyam bought by Mahindra Group after financial scandal), HCL and a lot of small and medium-scale businesses.

The "Big three" Indian IT services companies and other IT Indian companies have started making foreign direct investments (FDI). They invest in USA and Europe for receiving orders and promoting their services. Their investment activities in Asian countries — Sri Lanka, Bangladesh, China — are considered as "near-shoring", as they offshore their operations to neighbour countries to use lower wages, tax benefits and other advantages. They use additional language skills (knowledge of German) in their affiliates in Poland, Hungary, Czech Republic to serve European markets.

At present Indian IT services companies are moving to Africa. Wipro has already begun to offshore some of its contract work to Egypt. Ghana has emerged as a pole of attraction for graphic and web design and data entry. AT Kearney offshore services location index was the highest in 2009 by such an indicator as wages costs for Ghana (7.12 points), India had 6.86 points, USA 0.54 points. Wages in Ghana are 25–30% of those in India[14].

Indian IT services companies such as Infosys, Wipro and Tech Mahindra have been partnering in Africa with universities and offering internship programmes to expand the talent pool. Indian IT companies have been winning contracts from enterprises that focus on mobile technologies, e-governance, skill development and social media. Software services companies from India are expanding in Africa. Countries such as South Africa, Kenya are seen as the next frontiers of growth for Indian software outsourcers.

India's top software services companies are investing big in Africa, eager to win customers and market share in a continent that is home to fast-growing enterprises and under-developed technology infrastructure. India's software provider Finacle (Infosys related company), which has 32 clients in Africa, won business from Kenya's Equity Bank in February 2014.

While most technology companies have chosen South Africa as their African headquarters, many are expanding in fast-growing economies such as Uganda, Kenya, Nigeria and Ethiopia. HCL Tec is present in eight of the 54 countries. Wipro,

[14] http://www.slideshare.net/ashamlawi/outsourcing-global-services-location-index-2009 (access date: 20.04.2014).

which has 1,100 employees in Africa, will hire 1,000 people at its three centers in South Africa, Tech Mahindra too is betting big on Africa[15].

The IT and BPO services industry has grown significantly. The part of the value chain that can be performed offshore has increased in value-added and complexity as new types of services are being handled remotely and across borders. At the same time, the geography of offshore delivery has expanded to include a large number of countries specializing in different parts of the service-production ecosystem.

Table 4

Top established Global Outsourcing Cities by Functions

Functions	Established Cities
Applications Development and Management	Bangalore, Mumbai, Hyderabad, Chennai, Dublin
Animation/Game Development	Shanghai, Beijing, Moscow, São Paulo
Business Analytics	Delhi, Mumbai, Bangalore, Chennai, Toronto
Contact Centers (English)	Delhi, Manila, Dublin, Bangalore, Mumbai, Toronto
Contact Centers (Multilingual)	Mexico City, Cairo, Krakow, Buenos Aires, Dalian
Engineering Services	Bangalore, Chennai, Pune, St. Petersburg, Guangzhou
Finance and Accounting	Bangalore, Mumbai, Manila, Krakow, Shanghai, Dublin
Healthcare Services	Hyderabad, Bangalore, Makati City, Budapest
Human Resources	Prague, Bucharest, Bangalore, Makati City, Budapest
Infrastructure Management Services	Bangalore, Dublin, Delhi, Toronto, Kuala Lumpur
Legal Services	Manila, Mumbai, Chennai
Product development	Bangalore, Moscow, Chennai, Shanghai, Ho Chi Minh
R&D	St. Petersburg, Bangalore, Moscow, Shanghai, Ho Chi Minh
Testing	Bangalore Chennai, Hyderabad, Ho Chi Minh Toronto, Shanghai

Source: Top 50 emerging global outsourcing cities. The Gateway to the Global Sourcing of IT and BPO services. A Global services — Tholons study. October, 2009. (globalservicesmedia.com), p. 38.

[15]http://economictimes.indiatimes.com/articleshow/34909633.cms?utm_ source=contentofinterest&utm_medium=text&utm_campaign=cppst (access date: 15.05.2014).

In 2009 of the top 8 global IT-BPO outsourcing cities 6 were Indian cities: Bangalore, Delhi, Mumbai, Chennai, Hyderabad and Pune, and the other 2 cities were Dublin, Ireland, and Manila, the Philippines. Top 5 offshore nations were India, the Philippines, China, Ireland and Brazil[16].

As Tholons, an Indian consulting group experts, say, India's IT services industry was born in Mumbai in 1967 with the creation of Tata Consultancy Services (TCS). The first software export zone SEEPZ was set up in Bombay in 1973. There was a period when more than 80 percent of India software exports came from that zone. In 2000s top IT services providers in Mumbai were the Indian Big Three (software companies): TCS, Infosys, Wipro, and also Mahindra Satyam and HCL, the only Indian company included in the Forbes-20002014 list operating in the field of programming company. Western companies: IBM, CSC, ACS, Convergys, Genpact, Cognizant also operate in IT-BPO sphere in Mumbai. Mumbai — financial center of India with its Bombay Stock Exchange — is the preferred choice of outsourcing buyers for financial services BPO sector, marketing and financial analytics, contract research, legal services, but also for applications development and management, engineering services, research and development[17].

For example, WNS company has its headquarters in Mumbai, though the parent company of the Group — WNS (Holdings) Limited — is registered in Jersey in the Channel Islands (UK), a well-known offshore territory. WNS at first was created as a "captive" affiliate of British Airways in India for offshoring IT and BP to India using its relatively cheap workforce. Later on in 2002 the company began performing BPO for third parties; WNS has in Mumbai over 23000 full time employees. In 2014 WNS had over 27,760 professionals across 35 delivery centers world-wide, including China, Costa Rica, India, the Philippines, Poland, Romania, South Africa, Sri Lanka, UK and US[18].

While at first IT industry came into existence in Mumbai, Bangalore is considered its main center, it is known as the Silicon Valley of India. It figures almost in every category of functions performed by established global outsourcing cities (10 out of 14) (Table 4). The city came into focus in 1991 (about 20 years after Mumbai) as an IT hub with the support by the government of software technology parks of India. Bangalore has grown from low end ITO and BPO such as coding and data entry processes to doing high-end ITO and BPO such as embedded systems and voice based technical support. Wipro, TCS, Larsen and Turbro Engineering Solutions, Infosys, Mahindra Satyam, HCL, IBM perform design automation CAD and

[16] Top 50 emerging global outsourcing cities. The Gateway to the Global Sourcing of IT and BPO services. A Global services Tholons study. October, 2009. (globalservicesmedia.com), p. 11.

[17] Top 50 emerging global outsourcing cities. The Gateway to the Global Sourcing of IT and BPO services. A Global services Tholons study. October, 2009. (globalservicesmedia.com), p. 32.

[18] http://www.wns.com/About-Us.aspx
http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?casestudyid=4000010494 (access date: 10.11.2014).

other engineering services. Bangalore has the highest number of "captives" (foreign affiliates performing IT and BPO services for exports to their corporations or to third parties): Intel, Microsoft, Oracle, SAP, Cisco, Google, Yahoo, HP, Motorola, Samsung, Siemens in the ITO sector and Citigroup, Reuters, HSBC, Goldman Sachs, Dell, JP Morgan in BPO/KPO (knowledge processes outsourcing)[19]. Big Three Indian services providers — TCS, Infosys, Wipro — and other Indian companies, big, medium and small — attract global buyers.

Indian Big Three companies figure on the Forbes list and they occupy important positions among the leading world companies of their industry.

Table 5

Companies on the "Forbes 2000 List", 2014, programming and computer Services

Rank in the industry	Company	Country	Rank in Forbes 2000	Sales 2013, *$B*	Market capitalization 2013, *$B*
Programming, total 17; US — 12, India — 1, Germany — 1, Israel — 1					
1	Microsoft	United States	32	83.3	343.8
2	Oracle	United States	94	37.9B	185
3	SAP	Germany	207	22.3	97.1
8	HCL Technologies	India	1153	4.7	16.6
11	Check Point Software	Israel	1353	1.4	13.1
12	Adobe Systems	United States	1417	4	32.8
Computer services. Total — 23, US — 9, France, China, India — 3, Russia — 1, Netherlands — 1, Ireland — 1					
1	IBM	United States	35	99.8	202.5
2	Google	United States	52	59.7	382.5
3	Accenture	Ireland	339	30.6	52.7
4	Tencent Holdings	China	426	9.8	135.4
5	Facebook	United States	510	7.9	159.7
6	Tata Consultancy Services	India	542	13.1	71.2
7	Yahoo	United States	715	4.7	36.8
8	Baidu	China	723	5.2	55.8
9	Infosys	India	726	8.1	31.7
10	Cognizant Technology	United States	772	8.8	31.4
11	Capgemini	France	798	13.4	11.8

[19] Top 50 emerging global outsourcing cities..., p. 30.

12	Wipro	India	849	7.1	23.1
15	NHN	South Korea	999	2.3	24.3
16	ATOS	France	1198	11.4	8.9
17	Mail.ru Group Ltd.	Russia	1392	0.7	7.7
19	Netease	China	1456	1.5	9.1
20	Yandex NV	Netherlands	1651	1.2	10.2

Source: compiled from http://www.forbes.com/global2000/#page:3_sort:0_direction:asc_search:_filter:Computer%20Services_filter:All%20countries_filter:All%20states; http://www.forbes.com/global2000/#page:2_sort:0_direction:asc_search:_filter:Software%20%26%20Programming_filter:All%20countries_filter:All%20states (10.10.2014).

In the Forbes 2000 companies list published in 2014 there are 40 companies of programming and computer services. Among 17 companies in programming from the Forbes list the overwhelming majority are American companies, they are 12, starting with famous Microsoft and Oracle. There is one Indian company on the list, it is HCL. But the origin of 23 computer services companies is more varied: there are 9 companies from U. S., 3 from France, 3 from China, 3 from India, 1 from Ireland (the famous Accenture), 1 from Russia (Mail.ru), and 1 from Netherlands (which is Yandex operating in Russia).

Indian Tata Consultancy Services (TCS) is the 6th on the list of computer services companies from the Forbes 2000 list, it comes after such giants of the industry as IBM, Google, Facebook (U. S.), Irish Accenture and… Chinese Tencent Holdings (No. 4). In 2013 TCS had sales of $13.1 billion and market capitalization of 71.2 billion. And if we take into consideration that TCS is also only one of the companies comprising Tata Group (along with Tata Motors and Tata Steel famous for their acquisitions of Western companies Corus, Jaguar and many other companies) its weight in the economy seems more significant.

In mainland China there is a new generation of billionaires who are relatively young and who have made money on information technologies, more particularly on services related to information technologies. A new "star" is Jack Ma (No. 37 on the Forbes list, $19.8, age: 50; source of wealth: e-commerce), the founder of Alibaba company; the Initial Public Offer (IPO) of which was a great success in September, 2014. Alibaba was not included on the Forbes companies list as before IPO it was not a public company.

Authors of the Forbes magazine web-site analyze the reasons of Alibaba's (NYSE:BABA) triumphal IPO on Wall Street, "as where the stock rocketed higher in the first day of trade. That's certainly brought back the good old days of the late 1990s, and raised the old questions: what happens beyond the IPO buzz? Is Alibaba's stock a long-term buy?". To answer these questions, the author considers Alibaba's competitive advantages and tries to determine whether they are sustainable. The first advan-

tage is location — China. With 560 million Internet users spending 20 hours a week online, China is by far the largest Internet market in the world — twice the size of the US market. And notably, China is skipping traditional retailing in favor of e-tailing. The second advantage is economies of scope; the cost savings associated with the offering for sale of different products by a single corporation through the same sales channels. In this case, sites. Alibaba has two retail sites — Taobao, which features thousands of non-brand name products sold by smaller-unknown merchants; and Tmall, for brand name products. The variety of products offered on each site, especially Taobao, is astonishing. The third advantage is scale, the cost savings associated with a larger volume of sales. "What sets Alibaba apart is size," — writes Juro Osawa. — "The company has said that Taobao and Tmall account for more than half of all parcel deliveries in China. In 2012, the combined transaction volume of Taobao and Tmall topped one trillion yuan ($163 billion), more than Amazon and eBay combined." The fourth advantage, and perhaps the most important, is networking, the benefits arising from an expanding network of users of a product or service. The larger the network, the more valuable the product becomes to each user. Alibaba is a form of "collective entrepreneurship" between the company and thousands of merchants that join the network — Alibaba provides the platform, and the merchants provide the products. This model, which relies on revenue sharing rather than listing fees, makes it easier for additional merchants to join the network. And the larger the network, the greater the benefits for each merchant, as it attracts a large volume of customer traffic. The fifth advantage is Alibaba's good relations with the Chinese government. Though such relations are important in every country, they are particularly important in China, where the government is the gatekeeper of the economy, deciding who will be in what business and for how long.

These are significant competitive advantages for Alibaba — but are they sustainable? The Forbes web-site author gives a negative answer to this question for three reasons: First, Alibaba's model charges no listing fees and has no warehouses to keep inventories, which makes it very likely to be replicated by others — much easier than Amazon's model. Second, China's Internet economy is highly competitive, with new competitors entering quickly and eroding operation margins. Baidu's operating margin, for instance, dropped from 39.30% in 2011 to 30.10% by 2014 and Sohu.com's from 19.59 to 13.10. Third, government regulations are in a state of flux in China. This means that the government can quickly turn from a friend to an enemy; it can put a company out of business as quickly as it put it in business. Final conclusions: an early mover into China's large and fast growing Internet economy, Alibaba has been enjoying a number of competitive advantages that propelled its growth. That certainly fueled a great deal of buzz when the company's IPO made its debut on Wall Street, and helped its stock open well-above the pre-debut price. But the company's advantages aren't sustainable[20]. It is difficult to make projections. What is important is that Alibaba

[20] http://www.forbes.com/sites/panosmourdoukoutas/2014/09/20/beyond-the-ipo-buzz-alibabas-advantages/9/20/2014 (access date: 5.10.2014).

uses the principle of networks that is very important in Asian economy, co-operates with small businesses, serves low income customers and takes advantages of economy of scale. On November 11, 2014, Alibaba got revenue of $2 billion during one hour, the first hour of sale on the occasion of Lonely people Day (an alternative to St. Valentine Day) when unmarried and lonely girls and men buy presents for themselves, not for anybody else[21]. And if there are other competitors it will contribute to advantages of Chinese consumers by reducing costs.

No. 56 on the Forbes 2014 Billionaires List is Robin Li ($15.6 B; age: 45; source of wealth: Internet media). Robin Li is the founder and CEO of Nasdaq-listed Baidu, China's No. 1 online search company, and he ranks No. 3 among mainland Chinese on 2014 billionaires list. Shares of Baidu have increased in 2013 on investor enthusiasm for acquisitions that have expanded the business beyond desktop search. In August 2014, Baidu bought app store 91 Wireless for $1.9 billion; and in the same month, it agreed to purchase 59% of group-buying website Nuomi for $160 million in cash. Robin Li is also a director of New Oriental Education, a New York-listed company that provides private educational services in China, and is the vice chairman of the Internet Society of China. He has a bachelor's degree in information science from Peking University in China and a master's degree in computer science from the State University of New York at Buffalo. After graduating, he worked for IDD Information Systems and Infoseek in the U. S. before going back to China to set up Baidu in 2000. Sales of Baidu, China's No. 1 search engine, jumped 47% in 2013. Making transition to mobile the company spent $650 million on research and development in 2013 and launched mobile-payment-system Baidu Wallet in April, 2014. Mobile made up a record 30% of revenue in the second quarter of 2014. The company is also expanding abroad: in 2014 it started a search-engine service in Brazil and opened a Silicon Valley, US, research center. Now it is applying for banking licenses and developing a driverless car.

No. 66 on the Forbes 2014 Billionaires List is Ma Huateng ($14.4 B; age: 43; source of wealth: Internet media). Ma is the founder and CEO of Tencent Holdings, China's largest publicly traded Internet company measured by market capitalization. Ma has ascended into the No. 2 spot among mainland China's wealthiest on the strength of Tencent's share price, which has doubled in 2013. The company's main website qq.com regularly ranks among the world's 10 most popular. Tencent makes most of its money from online games, but it pushed into search in September 2013 when it paid $448 million for a 36% stake in Sogou of China. It's also looking to boost its e-commerce revenues. A big star of the past year: its WeChat mobile communication service, which has attracted more than 270 million users. Internet giant keeps doing deals to fend off e-commerce company Alibaba. It acquired stakes in search engine Sogou and logistics outfit China South City Holdings. Its WeChat messaging app reached 438 million monthly active us-

[21] http://www.infox.ru/business/company/2014/11/11/Sokrovishca___Alibab.phtml (access date: 11.11.2014).

ers worldwide in June 2014. Sales ballooned 41% in 2013 and net profit rose by 25%. Tencent is a repeat member of the 2013 Forbes Asia Fab 50 list of the region's best big companies.

"Call them copy cats if you want, but the Asian tech giants from South Korea, Taiwan and China are fast becoming the new Cisco's and IBMs of the world. Industry leaders are taking notice"[22].

In ICT sphere new transnationals from Asian countries are successfully competing with transnationals from the USA, Europe and Japan. It is an inspiring fact that Moscow and St. Petersburg are included on the list of leading outsourcing cities for some functions (game development product development, R&D, engineering services) (Table 4). Russia has improved its position as computer services exporter (0.8% of world exports in 2012, while India had 18%) (Table 3). In 2012 the part of all transition economies in world computer services exports was 1.5%, in ICT goods exports it was 0.2% (Table 1). The only Russian company present among 136 companies of ICT goods and services production from the Forbes list is Mail.ru (there is also Yandex registered in Holland present in it) (Tables 2, 5). In fact, Russia has to do a lot to catch up with its Asian BRICS partners and other Asian economies in IT goods and services production.

What influence can have the rapid development of robotics on IT industry in Asian countries? First of all, information technologies are widely used in robotics. Second, some IT companies perform R&D in robotics (a recent example of Baidu, or Google in the USA). Reshoring and relocalization really take place: in 2012 international production (sales of transnationals' foreign affiliates) exceeded world exports by 16%, and in 2007 it was more than world exports by 60%. FDI flows are slowing down, but is it the influence of reshoring or of crisis trends in world economy? But in my opinion, in the near future both trends: using cheap workforce and robotics, will co-exist, and the vector from addition of these two forces operating in different directions will be the result. Besides that, IT goods and services production could be re-oriented to Asian countries' internal markets as there will still be millions (and billions) of low income consumers there. The prospects could be the following: robotics in some industries and segments and using cheap workforce in other industries including those oriented on large and growing internal markets of Asian countries.

[22] http://www.forbes.com/profile/ma-huateng; http://www.forbes.com/profile/robin-li (access date: 1.10.2014); http://www.forbes.com/sites/liyanchen/2014/08/27/asias-tech-takes-over-the-world/(access date: 1.10.2014)