



Outsourcing Industry in Ukraine 2007

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Introduction

This report covers the current trends of the Ukrainian economy, in relation to the offshore outsourcing industry.

It focuses on the specifics of Ukrainian towns: the capital of Ukraine Kyiv (Kiev) and the provinces, to identify the most attractive destinations for establishing an outsourced or a captive software development centre.

This report provides information on education, transport infrastructure, developer's salaries, property prices and other parameters to help readers make an informed decision whether to choose Ukraine as a location for its software development function, and if so, where.

The names of towns used in this report are based on Ukrainian transliteration, (whilst Russian transliterations are provided in parentheses). It is useful to know the spelling of both versions for flight booking.

Summary

In the past three years Ukraine has undoubtedly become the most attractive outsourcing destination in Eastern Europe. With the second largest population after Russia, a legacy of Soviet science and success-hungry entrepreneurs, the country boasts the fastest-growing software development industry.

The offshore outsourcing market in Ukraine has reached \$246 million in 2006. It grew 47% in 2006 with 30 000 IT graduates arriving into the workforce each year. A lack of the integration with the EU keeps the prices in check and IT professionals from leaving the country. It is not unheard of for Poland and other new EU member states seek qualified IT resources in Ukraine. And Germany recognizes the outsourcing opportunity in Ukraine-- German customers (60 in total) employ 6% of all offshore outsourcing resources in Ukraine.

The industry benefits from visa-free regime with European Union and North America and geographical proximity to Europe, but has recently had frequent changes in the government. Whilst changes in the government do not affect the outsourcing businesses, its policies such as increase of education budget to 6.5% of GDP play a positive role in the long-term prospects of the software development industry.

The industry is well established in Kyiv, where more than 50% of all software development professionals are employed, but is simultaneously rapidly expanding into Lviv and Kharkiv. The outsourcing industry is quite fragmented. Of the 70 companies interviewed, only seven of them employed more than 300 people in 2006 whilst 21 companies had 100 employees or more.

Ukraine: A Snapshot

Geography



Area: 233,000 sq. mi., by area, the largest country wholly in Europe.

Cities: Capital—Kiev, often transliterated as Kyiv from Ukrainian, has a population of 2.8 million. Other cities, covered in this report include Kharkiv, Dnipropetrovsk, Donetsk, Odessa, Zaporizhia, Lviv, Krivyi Rih, Mykolaiv, Mariupol, Luhansk, Sevastopol, Winnytsia, Kherson, Symferopol, Poltava, Chernihiv, Cherkassy, Sumi, Zhytomyr, Dniprodzerzhynsk, Kirovohrad, Khmelnytskyi, Chernivtsi, Rivne.

Terrain: A vast plain mostly bounded by the Carpathian Mountains in the southwest and by the Black Sea and the Sea of Azov in the south.

Climate: Continental temperate, except in southern Crimea (Sevastopol, Symferopol), which has a sub-tropical climate.

People

Population (est.): 46.9 million.

Languages: Ukrainian (official), Russian, others. According to the constitution, Ukrainian is the only official state language. In Crimea and some parts of eastern Ukraine -- areas with substantial ethnic Russian minorities -- local and regional governments permit Russian as a language for local official correspondence.

Education: Literacy--98%.

Health: Life expectancy--61.6 yrs. males, 72.8 yrs. females.

Work force: 23 million. Industry and construction--32%; agriculture and forestry--24%; health, education, and culture--17%; transport and communication--7%.

Government

Type: Parliamentary-presidential.

Administrative subdivisions: 24 provinces ("oblasts"), and two cities with special status - Kyiv and Sevastopol (Crimea). Crimea was ceded by the Russian Federation to the Ukrainian Soviet Socialist Republic in 1954, in recognition of historic links and for economic convenience, to mark the 300th anniversary of Ukraine's union with Russia. Crimean autonomous republic remains under Ukrainian jurisdiction.

Principal Government Officials: President--Viktor A. Yushchenko, Prime Minister--Viktor Yanukovych, Foreign Minister--Borys I. Tarasyuk

Orange Revolution

Leonid Kuchma was Ukrainian president since 1994 until 2004. His re-election was criticized by the international observers. Freedom of speech and press are guaranteed by law and by the constitution, and authorities generally respect these rights. Prior to the "Orange Revolution," however, authorities sometimes interfered with the news media through intimidation and other forms of pressure. In particular, the failure of the previous government to conduct a thorough, credible, and transparent investigation into the 2000 disappearance and murder of independent journalist Heorhiy Gongadze, in which then-government officials have been credibly implicated, negatively affected Ukraine's international image. Freedom of the media and respect for citizens' rights have increased markedly since the government of President Yushchenko took office in January 2005.

The campaign leading to the October 31, 2004 presidential election was characterized by widespread violations of democratic norms, including government intimidation of the opposition and of independent media. The November 21 runoff election was marred by credible reports of widespread and significant violations. Hundreds of thousands of people took to the streets of Kiev and other cities to protest electoral fraud and express support for Yushchenko, and conducted ongoing peaceful demonstrations during what came to be known as the "Orange Revolution." It is also alleged that Russian tycoons opposing Russian government-supported Ukrainian candidate, have provided significant funding to enable Orange revolution.

On December 3, Ukraine's Supreme Court invalidated the CEC's announced results and mandated a repeat of the second round vote to take place on December 26. Yushchenko won 51.99% of the votes, with 44.20% voted for Yanukovych.

Following four months of difficult negotiations, a government led by Prime Minister Yanukovych and including representatives from the Party of Regions, Our Ukraine, and the Socialist Party took office on August 4, 2006.

Current political climate in Ukraine is dominated by the power struggle between the President Yushchenko and the Prime Minister Yanukovych. Each player has a support of various Ukrainian business groups ensuring their access to power. This power struggle doesn't go further than the occasional staged protests. The only noticeable impact of the government policies on the outsourcing industry was a change in VAT taxation, increase of an education budget and a visa-free regime.

The resulting struggle led to the announcement of the current parliament illegitimate by President Yushchenko, and a call for new parliamentary elections scheduled to take place on the 30 September 2007.

Economy

Nominal GDP (2006, source: Economist Intelligence Unit): \$101.1 billion.

Natural resources: Vast fertile lands (which has been the historical "bread basket" for Russia), coal, ironstone, complex ore, various large mineral deposits, timber.

Agriculture: Products--Grain, sugar, sunflower seeds.

Industry: Types--Ferrous metals and products, oil and gas transport, coke, fertilizer, airplanes, turbines, metallurgical equipment, diesel locomotives, tractors.

Trade (2005): Exports of goods and services--\$40.4 billion: Ferrous and non-ferrous metals, mineral products, chemicals, energy transport services, machinery, transport equipment, grain, and textiles. Imports--\$39.05 billion: Energy, mineral fuel and oil, machinery and parts, transportation equipment, chemicals, textiles, and paper.

With rich farmlands, a well-developed industrial base, highly trained labour, and a good education system, Ukraine has the potential to become a major European economy. After eight straight years of sharp economic decline from the early to late 1990s, the standard of living for most citizens declined more than 50%, leading to widespread poverty.

Beginning in 2000 economic growth has averaged 7.4% per year, reaching 12.1% in 2004, but falling to 2.6% in 2005. Now again, according to EBRD statement in February 2007, the Ukrainian economy is experiencing rapid growth while personal incomes are rising, and Victor Yushchenko predicts the GDP growth at 8% in 2007.

Ukraine is rich in natural resources, with exception of oil, for which it relies on Russia. It is seventh largest steel producer, with giant steel manufacturer Mittal Steel located in the Kriviy Rih oblast. Ukraine has coal, natural gas, hydroelectricity and nuclear fuel raw materials. Ukraine's chemical industry is well developed, and so is its heavy machinery sector.

"Today we have the [fastest growth rate] in Europe. We didn't have that before. As a whole we were in depression for 13 years. Today the GDP growth is estimated at 8 per cent. The industrial growth is 13. Agriculture growth is 6. For the past two years, Ukraine received \$10-billion in [foreign direct investment]. More than the previous 15 years altogether. For the last two years, we've had our lowest unemployment rate ever. The real incomes of the population have increased by 21 and 18 per cent respectively. Salary growth is estimated at around 34 per cent. Every year, we're creating a million new [jobs], and not a single social strike has taken place in the past two years."

*The President of Ukraine Victor Yushchenko
 in his interview to Canadian Globe and Mail
 12 June 2007*

Most of its economic strength resides in the eastern regions of Ukraine – Donetsk, Dnipropetrovsk, Luhansk and Kharkiv oblasts, which provide over 50% of all industrial production of the country and 50% of export products, machinery remaining main industrial specialisation.

Western Ukraine has experienced a significant decline over the first 10 years of independence. Hundreds of thousands of people became unemployed. However the situation has changed in the past few years. Now, the region is becoming a centre for the automotive industry. Krono has invested over 3 million dollars into a wood-processing plant in Lviv. There are also special economic zones set to attract investments in the region in exchange for tax breaks.

Foreigners are allowed to buy businesses, property and to repatriate revenue and profit. According to Economist Intelligence Unit, in 2006, FDI was 4.1% of GDP or US\$ 4.2 Billion. The majority of FDI (20%) comes from Russia, with Germany and US taking the second place. According to the President of Ukraine Victor Yushchenko, the FDI since the Orange Revolution were \$10 Billion, or more than that over the 15 previous years.

Ukraine's has inherited a nice majority of the USSR's space and rocket industry. Now its space rocket building plants provide a base for wide range of high tech products, from commercial satellite launchers to wind turbines.

The problems of Ukrainian economy are export of capital, with \$1.5 to \$2 billion leaving the country each year; excessive government regulation; increasing tax debts; and unpaid salaries in the Eastern regions; according to the ministry of economy. A high level of corruption in the legal system results in weak contract enforcement, deterring foreign investors.

Ukraine's currency, the hryvnia, was introduced in September 1996 and has remained stable despite a small nominal appreciation in April 2005. Current exchange rate (February 2007) is approximately 5 hryvnia to 1 US Dollar.

Education

About 70% of adult Ukrainians have a secondary or higher education. The most important Ukrainian Universities are in Kyiv, Kharkiv, Lviv, Odessa, Dnipropetrovsk and Chernovtsy. There are about 70,000 scholars in 80 research institutes.

The country still benefits from a strong scientific capability, the aging legacy of the Soviet Union. The country is split into the regions, and the capital of each region has at least one or more universities, focusing on technical and social sciences, including foreign languages.

As far as the existing outsourcing industry preferences go, the following universities have earned reputation for a good education in computer sciences:

- National Taras Shevchenko University of Kiev
- National Technical University of Ukraine
- National University Kiev-Mohyla Academy
- Kharkiv National Technical University
- Kharkiv National University
- Kharkiv National Technical University of Radioelectronics
- National Aerospace University "Kharkiv Aviation Institute"
- Odessa I.I. Mecnikov National University
- Odessa National Technical University (incl. Ukrainian – German institute)
- Lviv Polytechnic National University
- Lviv National Ivan Franko University
- Donetsk National Technical University

The quality of education in other towns may not have been evaluated to the same extent, as the outsourcing companies have limited presence in the provinces.

In the past years due to high demand and low level of control from the government, many non-government universities and academia have sprung up, with less than adequate standards of teaching. Currently out of 670 Ukrainian colleges, 13% are private, and out of 337 Universities 30% are outside of government control.

As of 2007, there are 2.72 million students in Ukraine, and 88% of them study in governmental institutions. Amongst the student body there are 670 thousands technical students. About 30 000 students theoretically suitable for software development jobs, enter the job market each year, although sometimes their level of knowledge is inadequate for the required profession and requires additional training.

This dynamic led the Ministry of Education to rank the existing higher-education institutions, although the ranking has not been released to the general public.

Some of the main reasons for deteriorating quality of education are low salaries of the teaching personnel and outdated theoretical knowledge, as well as the inflexibility of many universities in preventing the practitioners of software development from teaching additional courses in those universities.

According to the Ukrainian Minister of Education Stanislav Nikolaenko, the government plans to spend 6.52% of its GDP for the education, compared to 3-4% of the GDP spent 7-8 years ago (or around 4% of GDP spent by the countries such as Romania). The number of scientists in Ukraine has increased from 13 000 people in 2000 to 17 600 in 2006, however the average age of the



scientists with a PhD degree is 50-60 years. The minister has acknowledged an importance of the high tech industry in Ukrainian economic growth. He said: "Our potential is in innovation-focused development model. We do not have a global resource base of oil and gas, that's why we should grow through use of intellectual potential".

Offshore Outsourcing Industry

Ukrainian offshore outsourcing companies have been providing software development services since early 1990s. Main factors contributing to the development of the industry included availability of the highly-educated engineering and scientific workforce that had to refocus its profile when the Soviet Union fell apart, and government investment in science shrank as a result of the shift to a market economy.

According to goaleurope.com study conducted in 2007, the offshore outsourcing industry in Ukraine in 2006 accounted for \$246 Million in revenue, and employed over 7500 people. Advocates of outsourcing to Ukraine name a number of advantages; they are:

Abundant Resources

There is still a significant availability of the highly-qualified resources, since Ukraine was a major hub of scientific research for Soviet Union, especially for its Space Programme. Ukrainian National Academy of Sciences has accounted for up to 40% of all Soviet research. With a population of almost 50 million people, and over 30 000 computer graduates, it offers a strong potential for supplying qualified workforce. A challenge is in matching the ever growing demand of the outsourcing industry in software developers experienced in the new technologies, and a lag of educational system disinclined in employing practitioners to teach new courses in Computer Sciences. The gap between the education and the needs of outsourcing suppliers is not always in the number of graduates the education system supplies each year. It is in what is being taught. Fortunately software development companies teach specific courses to the university students, offer them practical placements during the study period, and have an option to offer permanent jobs to the best of them.

Ukraine and other Eastern European Outsourcing Destinations

Ukrainian population is second largest in the Eastern European region after Russia. It beats Poland by almost 10 million, and more than twice bigger than the fourth biggest country Romania. Whilst the size of population is significant, the corresponding education budget was the smallest per capita in 2006. However with the decision of the Ukrainian government to increase the education spending to 6.52% of GDP, the percentage will be highest in Eastern Europe. Also, it lags behind the newly elected EU members in receiving FDI, which reflect a risk and downside associated with the investment outside of the EU.

Certainly, with the large population and poor economic conditions Ukrainian standards of living are much lower than those in the well-developed countries (Table 1). This again suggests availability of labour arbitrage opportunities in outsourcing industry, provided that the educational system is reformed to satisfy demands of the outsourcing companies.

Geographical Location

Ukraine is located close to Europe, within 2 hour direct flight from the main European cities. There is a small time difference with Western Europe (GMT +2 Time Zone) which allows more opportunities between the on-site and offshore development teams to collaborate. The lack of visa requirements for the visitors to Ukraine creates an additional freedom when arranging a trip to Ukraine on the short notice, unencumbered by endless visits to the consulate, unavoidable for example, when visiting Russia. At the same time, Ukrainians still need a visa when visiting most of the countries, where users of offshore outsourcing are based, which is not a requirement for the newly-elected members of the EU such as Romania or Bulgaria.

Table 1: Ukraine and Other Eastern European Outsourcing Destinations

Eastern European Country	Population, M*	GDP, \$B*	GDP per capita	Ed. Budget, \$B	Ed budget, % of GDP 2006 **	Inward FDI, 2005, \$B***
Russia	143	733	5,130	27.9	3.8%	14.6
Ukraine	47	82	1,746	4.4	5.4%	4.2
Poland	39	337	8,753	18.9	5.6%	7.7
Romania	22	79	3,550	2.8	3.5%	6.4
Belarus	10	29	2,776	1.7	6.0%	0.3
Czech Republic	10	119	11,617	5.2	4.4%	11.0
Hungary	10	113	11,333	6.2	5.5%	6.7
Bulgaria	7	28	3,774	1.0	3.5%	2.2
Slovakia	5	47	8,685	2.1	4.4%	1.9
Croatia	4	37	8,309	1.7	4.5%	1.7
Moldova	4	3	579	0.1	4.9%	0.2
Lithuania	4	30	8,422	1.8	5.9%	1.0
Latvia	2	16	7,106	0.9	5.8%	0.6
Slovenia	2	38	18,726	2.3	6.1%	0.5
Estonia	1	14	10,287	0.8	5.7%	2.9
United Kingdom	61	2,341	38,630	124.1	5.3%	154.5
Germany	82	2,890	35,073	132.9	4.6%	32.7
USA	298	13,220	44,303	753.5	5.7%	99.4

* Source: CIA World Factbook 15 March 2007

** Source: CIA World Factbook 22 August 2006

*** Source: United Nations Conference on Trade and Investment

Economic Situation

Ukrainian GDP per capita was US\$7213 compared to the Russian US\$11041. The Ukrainian economy, stifled by the 8 years of continuous decline and limited natural resources industry has a lesser need for the software development resources internally (unlike Russian economy). Therefore a significant number of the software development pool is focused in the offshore outsourcing industry. The lower cost of living compared to European Union member states, puts a lesser pressure on the salary growth.

At the same time a high demand and rising property prices result in necessary growth of software developers' salaries. The differences in property cost across Ukrainian towns are far greater than in salaries (Table 3), making living in Kyiv less financially attractive.

For example, the average salaries in Kharkiv are 57% of Kyiv salaries, whilst the property price per square meter is only 45%. This causes two trends: salary increases in Kyiv-based development base, and migration of outsourcing projects into the provinces. Based on goaleurope.com findings, only 53% of all development resources were concentrated in Kyiv, with Lviv and Kharkiv accounting for 18% and 13% of the outsourcing business (Table 2).

Table 2: The Distribution of Outsourcing Resources, By City

City	Developers %
Kyiv	53%
Lviv	18%
Kharkiv	13%
Dnipropetrovsk	5%
Winnitsia	4%
Odessa	2%
Donetsk	2%

Political Stability

The Outsourcing industry has a stronger argument to attract new customers, as the democratic pro-Western government took hold after the Orange revolution. Indeed, foreign direct investments in 2005 have grown by 81% and in 2006 have reached a total of over US\$23 Billion (over the period of 1991 – 2006). Kyiv has received US\$5.5 Billion, Dnipropetrovsk – US\$2.3 Billion, and Kharkiv – US\$1 Billion.

There is a significant number of the Western companies establishing their presence in Ukraine. Amongst them are Hewlett-Packard, Johnson & Johnson, Ericsson, Siemens, Kraft Foods, Cisco Systems, Deloitte, PwC, KPMG, GE, Mittal Steel and many others.

Table 3: Ukrainian cities: population, salaries (incl. IT), property prices, and distance from Kyiv

City	Distance from Kyiv. Km	Population, millions	Average (highest) salary, developer, US\$, 2006*	Average salaries in the region in 2006, US\$**	Property prices in 2006, US\$ per m ² ***	Rank, population	rank, salaries	rank, property prices (01/2007)
Kyiv	-	2.800	\$862 (\$3500)	329	2,600	1	1	1
Kharkiv	486	1.700	\$600 (2800)	186	1,170	2	12	5
Dnipropetrovsk	537	1.200	600 (2700)	226	1,340	3	4	3
Odessa	480	1.100	600 (1700)	190	1,820	4	10	2
Donetsk	729	1.100	475 (950)	232	865	5	2	14
Lviv	544	0.900	550 (2500)	178	1,100	6	16	8
Zaporizhia	568	0.856	340 (700)	210	900	7	7	13
Krivyi Rih	600	0.690	250 (500)	226	n/a	8	5	n/a
Mykolaiv	517	0.512	400 (800)	183	1,100	9	14	7
Mariupol	839	0.490	500 (n/a)	232	n/a	10	3	n/a
Luhansk	398	0.469	500 (800)	198	800	11	8	19
Sevastopol	928	0.400	300 (n/a)	193	1,275	12	9	4
Winnysia	266	0.390	350 (600)	152	1,000	13	24	10
Kherson	584	0.356	400 (n/a)	190	750	14	11	21
Simferopol	852	0.339	425 (1200)	183	1,120	15	13	6
Poltava	343	0.315	235 (600)	181	820	16	15	16
Chernihiv	151	0.310	400 (1500)	153	840	17	22	15
Cherkasy	201	0.309	450 (n/a)	163	820	18	19	17
Sumi	339	0.298	575 (700)	166	760	19	18	20
Zhytomyr	140	0.282	500 (n/a)	153	910	20	23	12
Dniprodzerzhynsk	550	0.278	n/a	226	n/a	21	6	n/a
Kirovohrad	299	0.268	n/a	158	645	22	20	22
Khmelnitskiy	348	0.261	n/a	150	1,050	23	25	9
Chernovtsy	538	0.258	n/a	157	820	24	21	18
Rivne	324	0.245	500 (600)	169	925	25	17	11

* Source: www.developers.org.ua and various job websites with advertised vacancies for the particular city

** Source: State Statistics Committee of Ukraine

*** Association of Real Estate Professionals, Ukraine

Methodology

GOAL interviewed more than 70 companies in February 2007 to identify the number of people employed by the industry in the period from 2004 to 2006, and used a number of market estimates to establish a number of employees in small independent teams of developers, to arrive to the total number of people employed.

Then, the average hourly rates were applied to the resource pool in each individual city, to arrive to the dollar value of the market size. For the estimated small business resource pool a blended rate was used.

Market Size

The Ukrainian Outsourcing industry has been growing at a high rate over the past 3 years. The market size of Ukrainian outsourcing industry in 2006 accounted for \$246 Million, and employed over 7500 people.

The outsourcing industry growth rate in terms of available IT professionals in 2006 was just under 50% (Table 4).

Table 4: Outsourcing Market Size 2004-2006

Table	2006	2005	2004
Market, \$ Million	246	156	101
Market growth rate, (in employment)	47%	41%	
Number of IT professionals	7,639	5,201	3,692
Total German customers	62	39	20
% of employees serving German customers	6.1%	4.4%	2.7%

Outsourcing from Germany

To compensate for a lack of the statistical data on the outsourcing tendencies on the German offshore outsourcing market, we have specifically asked all the companies about providing their services to German customers. According to our research findings, 6% of the Ukrainian developers worked for the German customers in 2006, in comparison with 4% in 2005 and 3% in 2004. **Over 60 German companies are currently outsourcing their software development to Ukraine.**

Over 50% of all offshore software developers are based in Kyiv, but over the past three years many outsourcing suppliers have set up their operations in the regions (Table 2). The leading regional outsourcing centres are based in Lviv and Kharkiv, as both cities have strong Universities such as Lviv Polytechnica and Kharkiv Institute of Radio Electronics.

Outsourcing Companies

Out of more than 70 companies identified and interviewed, 30 of them had their offices in Kyiv, 12 – in Kharkiv, and 10 in Lviv. Other popular destinations included Dnepropetrovsk and Odessa.

There are only 7 companies in Ukraine with a number of employees exceeding 300 (2006 count) and 21 companies with 100 employees and more.



The billing rates charged by the outsourcing providers ranges between \$13 and \$30 per hour, based on a number of conversations the client's specific needs. The rates depend significantly on the location of the outsourcing provider, and on a particular experience of the software developer sought.

Case Study 1: ISM eCompany

Company profile

Dutch ISM eCompany is a full service provider of Internet solutions, mainly for companies in retail, (whole) sale, government, financial services, other business consulting services and the small and medium enterprise sectors. The company was founded in 1992. For the fifth time in a row, ISM eCompany was ranked among the top 50 fastest growing technology companies in the Netherlands, in the Deloitte Technology Fast 50. For ongoing product development, a Ukrainian location was opened in 2005.

Reasons to Outsource to Ukraine

In the Netherlands, where ISM eCompany is based, the number of IT students declines every year. This creates a significant recruitment problem for technology companies. The company started to look for a location to outsource its development capabilities, and analysed 20 countries. Russia was on the short list, but Ukraine was seen as more Western Europe-oriented including government policies. India, China and Ukraine came up as Top 3 Outsourcing Destination. There were a number of reasons why Ukraine was selected as a destination.

1. The availability of a large pool of highly-educated people, so the supply was there (more than the supply of the IT resources in India), according to the company's estimates (although it was difficult to find the exact figures).
2. Geographical location is within a short flight and the absence of time difference.
3. The level of English was found to be better than in China, a fact which frequently shifted the outsourcing decision in favour of Ukraine.
4. Cultural differences were less noticeable compared to those in India and China.

Once the decision about the country was made, the company analysed a few Ukrainian cities and decided to set up its development centre in Zhitomir, a town located 140 kilometres from Kyiv. The reasons behind choosing Zhitomir included availability of a technical university, which, according to the company's finding, provided a high quality of education. At the same time, the company had to invest in the training of its employees as many of them were hired straight from the university.

The company did not want to establish an office in Kyiv as the office rent and salaries were much higher. Now the company is looking at other cities in Ukraine to further expand its activities.

The Development Centre

ISM eCompany set up a fully own subsidiary in Ukraine. Most employees are software developers, who concentrate on developing core products. The office in the Netherlands develops functional designs which are then sent to Ukraine for development. There are approximately 50 people employed in the Ukrainian office.

The Set Up

A formal part of the company set-up was completed in a week with a help of a local law firm. The difficult part was to find a suitable office building. The property rental prices are very volatile and change on a monthly basis, whilst buying a property is complicated with many difficulties. Ultimately after the company bought its office it took over a year to complete registration and approval procedures, set up internet connection and complete construction works.

Communication Challenge

One of the biggest challenges is the communication in a broader sense. "At first we must learn how we can understand each other. In practice it can be really complicated. Some tasks here are often clear, whilst to the Ukrainians they are not clear at all", says Michiel Schipperus, the COO of ISM eCompany. "People who face the Ukrainian team must understand what Ukrainians think, and how they can explain something to get the results they want". To improve communication between the teams, the representatives of the Ukrainian office work at the Dutch office for a few months.

Result

The company's office in Zhitomir now employs 50 people, developing the company's core applications.

Case Study 2: eZ Systems

Company Profile

eZ Systems is an Open Source Content Management software company. The company has a global presence with 85 employees from 23 nationalities and offices in Norway, Denmark, Germany, Ukraine, France and North America as well as an international team operating from the headquarters in Norway. eZ Systems is the creator of eZ Publish, an award-winning Open Source Enterprise Content Management System, with 2 million downloads; more than 150 thousand installations; and registered users in more than 130 countries. The company has established a development centre in Ukraine three years ago.

The Reasons to Outsource to Ukraine

The decision to set up its development centre in Ukraine has been driven by an opportunity. eZ Systems together with Opera Software are the largest recruiters of AIESEC students in Norway. Sergei Pushkin, an AIESEC trainee from Odessa, Ukraine was hired to work in the eZ Systems' Norwegian headquarters. He spent two years with the company after which the company has given him a choice of staying in Norway, or going back to Odessa to establish a team around him there. Sergei used his network to identify the right people to join the team. Now, three years later the Ukrainian office employs ten people.

Retention Approach

"We follow the same employment standards as for our employees in Norway. We pay "white" salaries to all employees. It's now just lower cost level that is important", says Alexander Farstad, the company's CEO. "We organise an annual conference when everybody comes in, so does a Ukrainian team. We are really involving people and that has been very successful as we had a high stability of the team."

Cultural Perception

The location – Odessa, from the company's point of view, is a large town and it has many technical universities. "It is a great city. To get there I need to fly with a one stop-over in Warsaw or Vienna. Honestly one thing amazed me first time when I was there - it feels much further away than Spain. But it didn't take me longer to go to Odessa than to go to Madrid. It's the same distance, and when I come there the people are there are very much like us", adds Farstad.

Travelling to Ukraine

Once a decision has been made to outsource software development or to establish a captive outsourcing centre in Ukraine, it is definitely worth visiting the country, and the respective city chosen as a possible outsourcing destination.

Ukraine is relatively well-connected to the rest of the world, as it has international airports in Kyiv, Kharkiv, Dnepropetrovsk, Donetsk, Odessa and Lviv.

Kyiv: direct flights come from Amsterdam, Athens, Barcelona, Beijing, Berlin, Brussels, Budapest, Dubai, Düsseldorf, Frankfurt, Hamburg, Helsinki, Leipzig, Lisbon, London, Luxembourg, Milan, Munich, New York, Paris, Prague, Riga, Salzburg, Stockholm, Tel-Aviv, Warsaw, Vienna, and Zurich. There is also a direct train to Berlin, which takes over 24 hours.

Kharkiv, Dnepropetrovsk, Donetsk, Odessa and Lviv are connected with air links to such international hubs as Vienna, Warsaw, Munich and Tel Aviv (for more details see the individual cities profiles).

The remaining towns, discussed in this report can be reached by taking an internal flight from Kyiv, or via Ukrainian railway, a slow and inconvenient option. However, with the strategic locations of the Ukrainian international airports, the rest of the provincial towns can be easily reached by driving a distance of 80km (Dnipropetrovsk - Zaporizhia) to 278 km (Lviv – Chernovtsy).

Air Transport

If the travelling around Ukraine requires using local airlines, the following information may be of use to assess reliability of their fleet. The flight information and reservation can be found at www.kiyavia.com/.

International Ukrainian Airlines, an international airline has a fleet of Boeing 737. Further information can be found on its English version of the company's [website](#).

Aerosvit, also an international airline, has a fleet of Boeing 737 and 767. Further information can be found on its English version of the company's [website](#).

Lviv Airlines is a domestic airline, which connects Western city Lviv with the rest of the country. It deploys L-76MD and AN12BK. Information on their [website](#) is available only in Ukrainian.

Nikolaev Aero is a local airline, which connects a town of Mykolaiv, situated near Odessa. The fleet includes plans AN-2 and helicopters KA-26. Further information can be found on their English [website](#).

Aerostar is an avia taxi. Their fleet includes Yak-40, Falcon 20F and King Air 350 Super, but the [website](#) caters to the local business community (Russian version).

DonbassAero is based in Donetsk, the coal capital of Ukraine, and has a fleet of Airbus A320, Yakovlev-42 and Antonov-24. Their [website](#) is available in English.

Dnepravia is an airline local to Dnepropetrovsk, and has a fleet of Yakovlev-42D and Yakovlev-40. The company's [website](#) is in English.

Other ways to reach provincial towns in Ukraine would include the national railway or road transport. For distances between cities please refer to the Table 5.

Car rentals

The most efficient way of travelling is to fly to one of the international airports of Ukraine and then rent a car with a driver – interpreter to reach the final destination. For example, Winnitsia (256 km), Cherkasy (190 km), Zhytomyr (131km) and Chernihiv (149 km) are best accessed from Kyiv, whilst Kharkiv provides a good connection to Poltava (141 km) and Sumi (190 km).

Car rental companies in Kyiv include [Kiev2000](#), [Arocars](#), [Car Rental Ukraine](#). Usually you would expect to pay a car rental fee depending on the class, Euro 0.3 per kilometre, 60 Euros per day for the English speaking driver, as well as driver's accommodation if you are travelling for more than one day.

Railway

The Ukrainian railway is still relatively slow, although a few semi-express lines have been built between Kyiv and Lviv (6 hours), Kharkiv (6 hours) and Dnipropetrovsk (5.5 hours), whilst Odessa and Donetsk can be reached by an overnight trains only. The Ukrainian railway [website](#) is provided in Ukrainian and Russian only.

Table 5: Distances between Major Cities

Town	Vinnitsa	Dnepropetrovsk	Donetsk	Zhitomir	Zhaporozhye	Ivano-Frankovsk	Kyiv	Kirovograd	Lugansk	Lutsk	Lviv	Nikolaev	Odessa	Poltava	Rovno	Simferopol	Sumi	Terнопole	Uzhgorod	Kharkov	Kherson	Khmelnitky	Cherkassy	Chernovtsi	Chernigov
Winnitsia		571	812	126	637	373	266	317	972	387	369	466	429	576	313	801	611	239	593	720	533	122	340	312	423
Dnepropetrovsk	571		250	630	89	952	479	246	401	888	948	329	463	183	814	458	366	818	1172	222	316	701	326	891	585
Donetsk	812	250		880	243	1202	729	496	151	1138	1198	579	713	391	1064	571	488	1068	1422	283	535	951	576	1141	826
Zhitomir	126	630	880		719	459	140	434	987	261	407	592	555	494	187	927	485	325	679	638	659	208	352	398	297
Zhaporozhye	637	89	243	719		1018	568	314	394	977	1014	352	486	277	903	371	460	884	1238	303	292	767	415	957	674
Ivano-Frankovsk	373	952	1202	459	1018		599	698	1353	273	135	785	658	953	292	1124	944	137	301	1097	856	251	721	143	756
Kyiv	266	479	729	140	568	599		299	836	398	544	517	480	343	324	852	339	465	819	487	584	348	201	538	151
Kirovograd	317	246	496	434	314	698	299		647	692	694	180	337	251	618	524	434	564	918	395	251	447	126	637	436
Lugansk	972	401	151	987	394	1353	836	647		1245	1349	730	864	493	1171	722	535	1219	1573	330	686	1102	727	1292	873
Lutsk	387	888	1138	261	977	273	398	692	1245		152	853	816	752	70	1188	743	164	432	896	920	268	610	336	555
Lviv	369	948	1198	407	1014	135	544	694	1349	152		843	793	898	215	1178	889	127	278	1042	910	247	717	278	701
Nikolaev	466	329	579	592	352	785	517	180	730	853	843		134	488	779	339	671	713	1067	551	71	596	368	642	671
Odessa	429	463	713	555	486	658	480	337	864	816	793	134		596	742	473	779	676	959	685	205	559	453	515	634
Poltava	576	183	391	494	277	953	343	251	493	752	898	488	596		678	631	183	819	1173	144	499	702	271	892	412
Rovno	313	814	1064	187	903	292	324	618	1171	70	215	779	742	678		1114	669	158	495	823	846	195	536	331	481
Simferopol	801	458	571	927	371	1124	852	524	722	1188	1178	339	473	631	1114		814	1048	1402	657	279	931	649	981	959
Sumi	611	366	488	485	460	944	339	434	535	743	889	671	779	183	669	814		810	1164	185	682	693	343	883	338
Terнопole	239	818	1068	325	884	137	465	564	1219	164	127	713	676	819	158	1048	810		353	963	780	117	587	176	622
Uzhgorod	593	1172	1422	679	1238	301	819	918	1573	432	278	1067	959	1173	495	1402	1164	353		1317	1134	471	941	976	444
Kharkov	720	222	283	638	303	1097	487	395	330	896	1042	551	685	144	823	657	185	963	1317		538	846	415	1036	523
Kherson	533	316	535	659	292	856	584	251	686	920	910	71	205	499	846	279	682	780	1134	538		663	411	713	738
Khmelnitky	122	701	951	208	767	251	348	447	1102	268	247	596	559	702	195	931	693	117	471	846	663		470	190	505
Cherkassy	340	326	576	352	415	721	201	126	727	610	717	368	453	271	536	649	343	587	941	415	411	470		660	311
Chernovtsi	312	891	1141	398	957	143	538	637	1292	336	278	642	515	892	331	981	883	176	976	1036	713	190	660		695
Chernigov	423	585	826	297	674	756	151	436	873	555	701	671	634	412	481	959	338	622	444	523	738	505	311		

City Profiles

Kyiv (Kiev)

General Information

<http://en.wikipedia.org/wiki/Kiev>

Population: 2.8 million

FDI, US\$ billion, 2006: 5.5

Property prices, US\$ per m²: 2600

Average salaries, US\$, 2006: 329

Kyiv is the capital of Ukraine, with 18% of GDP concentrated in the city. The main industries in the city include financial industry, equipment manufacturing, aerospace (Antonov, rocket industry), chemical industry.



Offshore Outsourcing Industry

Number of people employed (based on identified companies): 3474

Offshore outsourcing market, US\$ million, 2006: \$141

Average salaries for software developers, US\$ median (maximum)¹: 862 (3500)

Number of outsourcing companies identified: 30

Universities with technical faculties: main universities providing graduates for the IT industry include National Taras Shevchenko University of Kyiv, National Technical University of Kyiv and National University Kyiv-Mohyla Academy. Other universities with a potential to provide technical graduates include National Aviation University of Kyiv, International Science and Technology University of Kyiv, Kyiv International University.

Travel Plans

Transport: there are many direct flights to Kyiv, including flights from Amsterdam, Athens, Barcelona, Beijing, Berlin, Brussels, Budapest, Dubai, Dusseldorf, Frankfurt, Hamburg, Helsinki, Leipzig, Lisbon, London, Luxemburg, Milan, Munich, New York, Paris, Prague, Riga, Salzburg, Stockholm, Tel-Aviv, Warsaw, Vienna and Zurich. There is also a direct train from Berlin which takes over 24 hours, and train connections to Bulgaria, Poland, Italy and Hungary.

Hotels: there are a few hotels in Kyiv, but the practice of renting well furnished apartments which offer more value, can be found on the following websites:

<http://www.rentapartments.kiev.ua/kyiv-hotels.html>

<http://www.apartment-plus.com/ENG/index.htm>

<http://www.kievrent.net/> - this website also offers apartments throughout Ukraine.

Tourist attractions:

¹ These figures are indicative only. The information was collected from the website www.developers.org.ua or from recruitment websites, where the advertised position contained salary information for the particular city.



Kiev is located on Dnieper River, and has picturesque parks, beautiful churches and cathedrals such as Kiev-Pechorsk Lavra, St. Sophia Cathedral, as well as impressive city centre, dominated by a broad renovated Khreschatyk Street and Independence Square. Outside of Kyiv, Alexandria – a historical landscape park is situated in Bila Tserkva.

Kharkiv (Kharkov)

General Information <http://en.wikipedia.org/wiki/Kharkiv>

Population: 1.7 million

Property prices, US\$ per m²: 1170

Average salaries, US\$, 2006: 186

Kharkiv is one of the main industrial, cultural and educational centres of Ukraine. Its industry and research specialize on arms production and machinery. There are hundreds of industrial companies in the city. Among them are world famous giants Morozov Design Bureau and Malyshev Tank Factory (Zavod Malysheva, a leader in tank production since the 1930s), Hartron (aerospace and nuclear electronics) and Turboatom (turbines producer).



Offshore Outsourcing Industry

Number of people employed (based on identified companies): 864

Offshore outsourcing market, US\$ million, 2006: 22.8

Average salaries for software developers, US\$ median (maximum)²: \$600 (2800)

Number of outsourcing companies identified: 12

Universities with technical faculties: Kharkov National University, National Technical University (Kharkiv Polytechnical Institute), National Technical University of Radio Electronics, National Transport Technical University, National Aerospace University "Kharkiv Aviation Institute".

Travel Plans

Transport: There is a direct flight from Vienna as well as frequent daily flights from Kyiv. Car rental can be arranged from S.B. Rent <http://www.sbrent.com.ua/eng/>

Tourist attractions: landmark of Kharkiv is its Freedom Square (Ploshcha Svobody) is the largest city centre square in Europe, and the 4th largest square in the world.

² These figures are indicative only. The information was collected from the website www.developers.org.ua or from recruitment websites, where the advertised position contained salary information for the particular city.

Dnipropetrovsk (Dnepropetrovsk)

General Information <http://en.wikipedia.org/wiki/Dnipropetrovsk>

Population: 1.2 Million

Property prices, US\$ per m²: 1340

Average salaries, US\$, 2006: 226

A vital industrial centre of Ukraine, Dnipropetrovsk was one of the key centres of the nuclear, arms, and space industries of the former Soviet Union. In particular, it is home to Yuzhmash, a major space and ballistic missile designer and manufacturer. Because of its military industry, the city was a closed city (no foreigners were allowed there without official permission) until the 1990s.



Offshore Outsourcing Industry

Number of people employed (based on identified companies): 320

Offshore outsourcing market, US\$ million, 2006: 8.45

Average salaries for software developers, US\$ median (maximum)³: 600 (2700)

Number of outsourcing companies identified: 7

Universities with technical faculties: Dnepropetrovsk National University (incl. foreign languages faculty), National Technical University of Railway transport, National Mining Academy of Dnepropetrovsk.

Travel Plans

Transport: There are direct flights from Vienna and Tel Aviv as well as frequent daily flights from Kyiv. There is also a direct train from Kiev (5.5 hour journey).

Tourist attractions: The compact "old town" does not exist in Dnipropetrovsk anymore. Many historic buildings and churches were destroyed in the Second World War and in Stalin's communist times in the 1930s. The Dnieper River is visible from many points in Dnepropetrovsk. From any hill (there are 3 in the city) you will find a beautiful view of the river, islands, parks, outskirts, river banks and hills.

³ These figures are indicative only. The information was collected from the website www.developers.org.ua or from recruitment websites, where the advertised position contained salary information for the particular city.

Donetsk

General Information <http://en.wikipedia.org/wiki/Donetsk>

Population: 1.1 Million

Property prices, US\$ per m²: 865

Average salaries, US\$, 2006: 232

Donetsk is a capital of a coal mining region.

Offshore Outsourcing Industry

Number of people employed (based on identified companies): 112

Offshore outsourcing market, US\$ million, 2006: 2.4

Average salaries for software developers, US\$ median (maximum)⁴: 475 (950)

Number of outsourcing companies identified: 3

Universities with technical faculties: Donetsk National University, Donetsk National Technical University, Donetsk National Institute of Artificial Intelligence, Computer Academy "Shag" (Step)



Travel Plans

Transport: there are direct flights from Munich, Vienna as well as frequent daily flights from Kyiv. There is also an overnight train from Kyiv(11 hour journey).

Tourist attractions: Although Donetsk is a centre of the coal-mining region; it has its share of onion-roof churches. On the borders of this oblast there is a steppe nature reserve called Stone Graves, where the caves carry pre-historic wall paintings. The oblast also contains access to Azov Sea, which offers attractive sandy beaches, despite pollution from the steel plant Azovstal.



⁴ These figures are indicative only. The information was collected from the website www.developers.org.ua or from recruitment websites, where the advertised position contained salary information for the particular city.

Odessa (Odesa)

General Information <http://en.wikipedia.org/wiki/Odessa>

Population: 1.1 Million

Property prices, US\$ per m²: 1820

Average salaries, US\$, 2006: 190

Odessa is a major seaport on the Black Sea, the largest port in Ukraine.



Offshore Outsourcing Industry

Number of people employed (based on identified companies): 127

Offshore outsourcing market, US\$ million, 2006: 3.35

Average salaries for software developers, US\$ median (maximum)⁵: 600 (1700)

Number of outsourcing companies identified: 5

Universities with technical faculties: I.I. Mecnikov National University of Odessa, National Technical University (contains Ukrainian - German Institute)

Travel Plans

Transport: there are direct flights from Warsaw, Vienna, Budapest, Riga, Tel Aviv as well as frequent daily flights from Kyiv. There is also an overnight train from Kyiv (9.5 hour journey).

Tourist attractions: Odessa has a large variety of architectural landmarks, an Opera house and a waterfront of the Black Sea.

⁵ These figures are indicative only. The information was collected from the website www.developers.org.ua or from recruitment websites, where the advertised position contained salary information for the particular city.

Lviv (Lvov)

General Information <http://en.wikipedia.org/wiki/Odessa>

Population: 0.9 Million

Property prices, US\$ per m²: 1100

Average salaries, US\$, 2006: 178

Offshore Outsourcing Industry

Number of people employed (based on identified companies): 1211

Offshore outsourcing market, US\$ million, 2006: 32

Average salaries for software developers, US\$ median (maximum)⁶: 550 (2500)

Number of outsourcing companies identified: 10

Universities with technical faculties: Lviv Polytechnic National University, National Ivan Franko University (including faculty of foreign languages, centre of Italian language and culture)



Travel Plans

Transport: There are direct flights from Frankfurt, Vienna, and Warsaw as well as frequent direct flights from Kyiv. There is also a direct train from Kiev (6 hours journey) as well as a direct train from Berlin (1.5 day journey).

Tourist attractions: The city is regarded as one of the main cultural centres of Ukraine. It has a philharmonic orchestra and the Lviv Opera and Ballet Theatre. The historic city centre is on the UNESCO World Heritage List and has many architectural wonders and treasures. Lviv celebrated its 750th anniversary in September 2006. Lviv's historic churches, buildings and relics date back to the 13th century. It however retains a rich representation of structures built in the renaissance, baroque, and classic styles.

⁶ These figures are indicative only. The information was collected from the website www.developers.org.ua or from recruitment websites, where the advertised position contained salary information for the particular city.