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## The State of Game Development in Eastern Europe

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### Introduction

Eastern Europe hasn't historically exhibited the most inviting image to outsiders, and until recently, hasn't been considered as a possible source for technological competitiveness or innovation. But the landscape of video game development has changed significantly over the past few years. Nowadays, it's possible to see a competitive game that's been developed in Brno, Czech Republic, instead of London, England, or Los Angeles, California.

So, perhaps it's surprising that these games were developed in the countries where, before the collapse of communism, game consoles and computers had been extremely uncommon. There were no state-owned development companies (and no companies at all besides state-owned companies), and no video or computer game markets.

On the other hand, however, all of these Eastern Bloc countries possessed fully developed film industries with big studios generously financed by the government, official music markets, and lively alternative music scenes. At present, both film and music industries are facing fundamental financial problems, on the local level, and can only dream about competing with Hollywood or seeing their artists on MTV (although Eastern Europe is increasingly used as a filming location for big-budget Hollywood movies, a somewhat different matter.)

It can perhaps be argued that a handful of Eastern PC and video games are the only Eastern European products that have genuinely succeeded in the global entertainment industry on its own merits. But who are the important Eastern European development houses, what's happening to the market, and what are the significant positive and significant negative factors affecting Eastern European development?

### Game development in the former Eastern Bloc

In the former Communist countries, it's currently estimated that there are more than a hundred different professional game development teams. However, only a few of them have managed to create games that have made the charts, or have grown into companies exceeding 100 or more employees.

One of the most successful game development countries in the former Eastern Bloc is the Czech Republic, where two companies have managed to establish a strong presence on the Western

market. The first to join the ranks of leading game developers was Illusion Softworks, which in 1999 completed PC military action title *Hidden and Dangerous* (published by Take-Two).

That year, sales of this title surpassed the 400,000 mark and, including the expansion pack and Dreamcast version, eventually exceeded 1 million copies sold worldwide. In September 2002, Take-Two released *Mafia*, a game which spent several weeks on the European and U.S. PC Top 10 charts. Within one year the game sold over 800,000 copies. At the beginning of 2004, PS2 and Xbox versions of *Mafia* were released. Illusion Softworks is now home to six development teams totalling around 190 members. Illusion Softworks closely co-operates with Pterodon, whose latest PC title, *Vietcong* (Take-Two), entered at number two and remained in the Top 20 of the U.K. PC game charts for over 4 months.

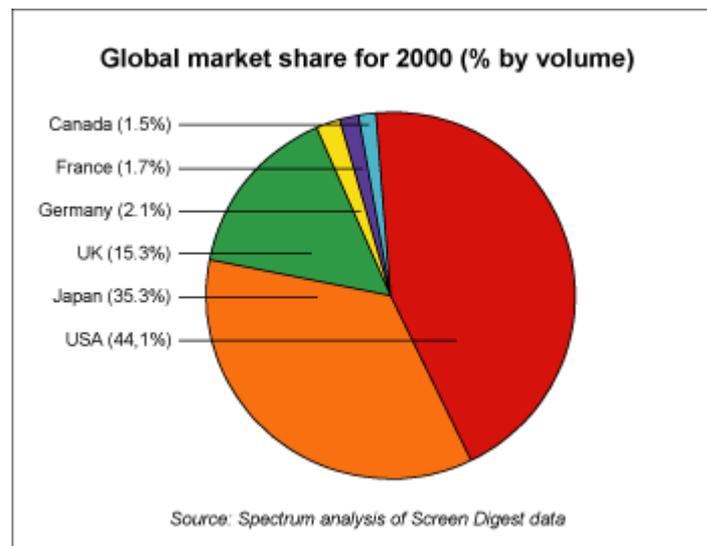
The second company to become prominent on the Western market was Bohemia Interactive, with its military simulation title *Operation Flashpoint* (published by Codemasters). The game was released in 2001 and has since sold more than 1 million copies. An Xbox version is scheduled for release in summer 2005 and the sequel, *Operation Flashpoint II*, in spring 2006. Together with its U.S. partner, Bohemia Interactive has even succeeded in licensing their military simulation technology to the U.S. Marine Corps.

Other companies to achieve some success on the level of their Czech counterparts are the Russian developer 1C: Maddox Games, with its aviation simulator *IL2-Sturmovik* (Ubisoft), or Croatia's Croteam with *Serious Sam* (Take-Two). Although headquartered in the U.S., Appaloosa Corporation has its major development offices in Hungary, and were responsible for developing both classic and recent Dreamcast/PlayStation 2 versions of *Ecco The Dolphin*, and are currently working on a *Jaws* console game for publishers Majesco. Recently, considerable attention has been paid to the game *S.T.A.L.K.E.R.: Shadow of Chernobyl* (THQ) by Ukrainian developer GSC Game World. There has also been some interest in the horror-themed, first-person shooter *Painkiller* (Dreamcatcher) by a Polish team called People Can Fly. It's noticeable, as we'll discuss later, that the majority of these titles are 'hardcore' PC military action or FPS games, however.

## Eastern European Developers' Share Of the Global Market?

Despite the success of Eastern European developers Western countries, especially the USA, Japan, and Britain, unequivocally dominate game development. However, no game analyst or researcher has publically mapped the market share of games produced in Eastern Europe recently, even if the statistics may be available in expensive, private paid reports somewhere. The most recent public survey of where game developers are located, released in 2000 and carried out by Screen Digest, describes the division of the market only among the six biggest players.

Market share according to origin of game creation in games sold in 2000:



**Global game market share in 2000**

Without a doubt, there are more games produced by developers from the Eastern Europe on the global market each year than there were in the previous years, but it's unclear of the exact current figures. Nonetheless, when quizzed about the trend, several game industry analysts considered Eastern European development to be on the rise.

Specifically, Nick Gibson of UK Games Investor Consulting commented: "In these risk-averse times, it is not surprising therefore that there has been a growing acceptance of central and eastern European development by the major North American and European publishers and I expect this region's development market share to increase rapidly over the next 5 years."

## Local Eastern European Publishers

Local publishers play an important role in the development of the game market in Eastern Europe. These companies originally started as distributors of Western games and local titles. Extending their activities from distributing and publishing on the local market to selling worldwide distribution rights to their games was a logical step.

The largest Eastern European publishers are the Russian companies 1C, Buka and Russobit-M, and the Central European firm Cenega, based in the Czech Republic. Both 1C and Buka, apart from working with external developers, also have in-house development teams. None of the Russian publishers has its own distribution network outside the country, which, compared to places like the U.S., Japan, Britain or Germany, at the moment is a much smaller market. These publishers therefore are happy to sell the worldwide rights to their titles to global publishers.

Cenega's strategy is to operate solely as a publishing company. The firm came into existence in 2002 when the largest Czech and Polish distributors joined forces with a venture capital fund. From the very beginning Cenega has acted as a global publisher with an emphasis on co-operation with Eastern European developers. The company has subsidiaries in Poland, Hungary, Slovakia and Britain, and plans to expand into other countries. Neither Cenega nor any of the Russian publishers has yet published a true worldwide hit.

It's obvious there is no publisher yet in Eastern Europe whose marketing and distribution strength can compete with the biggest Western publishing companies. Considering the fact that only very few developers from the Eastern Europe are lucky to have direct contract with a strong Western publisher, it is important that there is another publishing network that allows local developers to operate. This provides the Eastern European game development market with potential to further grow and mature.

## Western Publishers in Eastern Europe

Among the companies that co-operate with developers from Eastern Europe, British-headquartered publisher Codemasters is one of the more notable. The million-selling PC hit *Operation Flashpoint*, developed by Czech studio Bohemia Interactive, ranks among the publisher's most successful titles. In one particularly successful month it was the number 1 PC game in the UK, Germany, France and the U.S. American-based publisher Take-Two has been similarly successful with games from Czech developer Illusion Softworks. It will be seen at the beginning of 2005 whether THQ is equally successful with the Ukrainian title *S.T.A.L.K.E.R.: Shadow of Chernobyl*, developed by GSC Game World.

However, the biggest players in the game industry, like EA, Nintendo, Microsoft, or Sony, have not yet published a game from Eastern developers. But EA will change this soon. A real time strategy game, *Armies Of Exigo*, from Hungarian developer Black Hole Games is planned to be released this year.

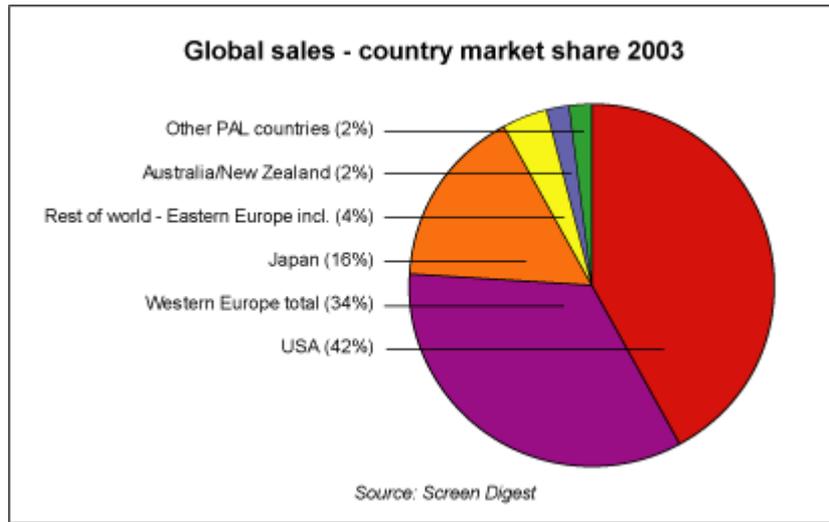
Apart from the biggest Western publishers and local companies, the most active co-operators with the East are German company CDV and Austrian publisher JoWood, both large players in PC gaming circles within German-language territories, although much less well-known outside these.

## Retail Sales in Eastern Europe

Much as there is no recent public research data on the global market share of developers from Eastern Europe, there are also no studies on the volume of game sales in the region. In the 2003 Global Sales Record, Eastern European sales are only included as part of the Rest of the World figure (4.3%). Even if this percentage represented Eastern Europe alone, with its more than 300 million inhabitants, it would be a very small number compared to, for example, France, with 60 million inhabitants and 5.7% of global sales.

This low share is attributed to rampant piracy (67%, compared to 23% in the US or 26% in the UK), a still-emerging market and low purchasing power. The difficult situation in Eastern Europe can also be illustrated by the fact that Microsoft has not yet distributed Xbox outside of the traditional Western European countries. In Eastern Europe it is possible to buy both the Xbox console and games for it, but only as so-called "grey imports" without official support from the company. This is probably one of the reasons why console sales are still relatively repressed within Eastern territories.

Nevertheless, the game market in Eastern Europe is quite similar to that of the West. For example, there are several distribution companies in the Czech Republic which supply games to specialized game retail networks. They also distribute to supermarkets, computer retail outlets and game e-shops. Among the best-selling games are products by local developers, released with the support of relatively big promotional campaigns.



**Global sales - country market share**

**Cost Differences For Eastern European Developers**

Low cost is the fundamental difference and competitive advantage enjoyed by developers in Eastern Europe, though the region obviously also has significant minuses that may offset those low costs. But nonetheless, the salaries for game developers, which represent a substantial cost item, are roughly three times lower than in the U.S.

**Comparison of income in the US and the Czech Republic (USD)**

Annual salary	US	Czech	Czech salaries as % of US salaries
Average national salary	36,210 [1]	7,333 [2]	20%
Computer programmers	64,510 [3]	11,797 [4]	18%
Multi-media artists and animators	52,880 [5]	10,358 [6]	20%
Lead game programmer (2-5 years exp.)	76,904 [7]	22,238 [8]	29%
Lead Game artist (2-5 years exp.)	53,636 [9]	16,173 [10]	30%

On the other hand, in Eastern Europe, personal income tax is higher, and employee and employer social security contributions are more burdensome than in the U.S. or UK . Even though this difference can increase the cost of an employee by a few percentage points, however, the huge difference in pre-tax salary compensates for this disadvantage.

Among other similarly low-cost items are office rental, and accounting, legal and IT services. However, the purchase of hardware, software, and telecom and Internet services can be more expensive by as much as 20%. In comparison with the overall low cost of game development, a very expensive item for developers from the East is travelling expenses - visits to the West are necessary to present individual projects and boost business activities. Also, travelling costs add to a project's expense if a publisher from the West has to visit Eastern developers regularly.

The total cost of game development can vary, even within Eastern Europe . Development teams in Russia and Ukraine can have costs several percentage points lower than those in the Czech Republic, Poland and Hungary.

**Effect of Low Costs in Publishing Model**

The model of advances for development against future royalties can represent a substantial

competitive advantage for developers in Eastern Europe compared to their Western counterparts.

Low costs result in a situation whereby Eastern developers can receive their royalties at the volume of sales at which Western developers can only dream of getting such monies.

Practically speaking, this could mean that, given the same agreement conditions, a Western developer could receive royalties with the sale of 1.2 million copies of a game. Meanwhile an Eastern developer, which costs three times less, will receive royalties with the sale of only 400,000 copies. Of course this results in the same rate of return for the publisher.

#### A model case:

	Western developer	Eastern developer
Development costs	6,000,000 USD	2,000,000 USD
Remaining costs - marketing, testing, production	4,000,000 USD	4,000,000 USD
Total costs	10,000,000 USD	6,000,000 USD
Gross profit for each unit sold	30 USD	30 USD
Royalties	15%	15%
Break- even point – (units necessary to sell for royalties payment)	1,333,333	444,444
<b>Publisher</b>		
Break - even point – (sold units for Publishers ROI)	333,333	200,000
Publisher ROI for 400k units sold	20%	100%

Although the cost difference is a major incentive for companies to invest in Eastern European game development, the game development business in Eastern Europe is yet not fully mature. There is a chronic lack of talent for positions that require specialized experience, for example a project manager with experience in game development, a business development manager with working knowledge of the game industry, and particularly, for anyone experienced in console development. Since the majority of games developed in Eastern Europe are for PC only, as we'll discuss later, the specialized knowledge needed for console art and especially console programming is unfortunately not yet fully developed. Unfortunately, low salaries in the region make it practically impossible to utilize human resources from Western countries to fill these positions.

### Global Labour Market and Eastern Europe

The Czech Republic, Slovakia, Poland, Hungary and three Baltic states joined the European Union<sup>[11]</sup> on May 1, 2004. Russia and Ukraine are not EU members and their accession is not currently planned.

Joining the EU has given the citizens of the new member states an opportunity to become part of the European labor market; an opportunity that had previously been severely limited by bureaucratic obstacles. However, working legally in the U.S. is still very difficult for these people, and even to visit the country as a tourist requires a visa, which is still by no means easy to obtain.

As for the prospect of a 'brain drain' from Eastern Europe, it might be expected that the opportunity to work anywhere in Europe will attract young and educated citizens from the new EU member states. The German government, for example, already introduced "technology work permits" four years ago to react to the lack of qualified programmers on the local job market.

At that time, Czech programmers were expected to be the ones who would answer the call, but their interest was very limited.

Considering this specific experience, and also considering the traditionally low mobility of the Czechs, neither an outflow of qualified Czech workers nor an increase in salaries due to a wish to keep them in the country can be expected. According to an OECD study from May 2004, it may take between 29 and 40 years before the economies of the new EU members reach 50% of the economic level of their Western counterparts. Therefore, it is not likely that these countries will lose their cost advantages any time soon.

## Eastern Europe Development Platforms

As mentioned briefly elsewhere, the game development industry in Eastern Europe is based on the PC platform. This is mainly due to the fact that console games have no tradition in the region, and therefore the automatic platform for start-up developers is PC. In addition, the expense of buying console development kits is also an issue for relatively young developers. Game development overall is a young industry in the region - the oldest development companies are not much older than five years. As these companies grow, mature and come to understand the structure of the global market, they can be expected to start developing games for consoles as well.

In the area of mobile phone games, developers from Eastern Europe may currently be on a technical par with their counterparts in the West. This is because, unlike console games, they already have several years of exposure to and familiarity with the technology. As the mobile games market is developing rapidly and, at the same time, is relatively scattered and influenced by various business models, it is difficult to assess the position of developers from Eastern Europe in this market at the moment. However, there are relatively few studios that have achieved any major position in the development of games for Game Boy console.

On the budget PC gaming market, some success has been had by those who have managed to develop a game for an already-existing brand of a given publisher (for example Hungary's Funlab, who took part in the development of the car series *Cabela's 4x4 Off-Road Adventure* for Activision). Other budget games were originally local projects that were introduced to the Western market by less prominent distributors.

Some developers have also been successful with games for their local markets. The instances of such success, however, are rather isolated and connected with the beginnings of the game development business in Eastern Europe. Due to the small national game markets in the region, it is highly risky to develop games only for domestic consumption. At the moment, there seems to be no development company focused exclusively on a local market.

Cheap development is probably also the reason why Eastern developers are employed to work on games with expensive licenses. For example the million-dollar licensed game based on the film *Terminator 3: Rise of the Machines* (published by Atari) was developed by the Hungarian company Clevers. Another Hollywood film accompanied by a game developed by a company from Eastern Europe was *Pirates of the Caribbean* (Bethesda Softworks), engineered by Russian developer Akella, and based on the already in-development original title *Sea Dogs 2*. However, a development "factory", capable of producing a new AAA hit title on all the main platforms within two years, is not yet a common or even uncommon occurrence in Eastern Europe.

## Partial Outsourcing To Eastern Europe

Instances where publishers from the West outsource only part of a game's development are not very common. Most outsourcing takes the form of art-related work, executed mostly by Russian studios. Developers that focus exclusively on outsourcing are rare, at least in many parts of Eastern Europe. The reason for this is probably motivation. Many Eastern European game developers simply seek creative self-realization, whereas other software developers in the IT industry have more business-like ambitions.

However, the development of games based on original concepts that are not created on direct order from Western publishers represent the bulk of development activities in the East. This model therefore differs from the IT model, in which Western companies seek partners for their software projects. Projects that are suitable for these kinds of services, e.g. game porting, so far most likely exceed the capacity of developers in the East. This may be changing relatively soon, however.

So far, it doesn't seem likely that the Western publishers want to compete against developers in Eastern Europe by opening their own development branches in the region. One of the few exceptions is Ubisoft, which has its own development branch in Romania . But for the future, Western publishers will most likely rely on carefully thought-out acquisitions, and this trend is likely to be seen also in the Eastern Europe as well.

## **Governments and the Eastern European Game Development Industry**

Unlike their Western counterparts, developers from Eastern Europe cannot rely on specific support from their respective governments, be it in the form of subsidies for specific projects (France, Norway, recently even China), development kit financing (Australia), or a unified, state-supported presentation of developers from a certain country at international trade fairs (France, UK). They also cannot count on the support of the education system, as in the U.S. where game development has become part of the paid curriculum. On the other hand, they can enjoy lower corporate taxes, which is a solace for Eastern developers - in the Czech Republic the rate is currently 28%, in Russia 24%, Poland 19% and Hungary 16%. This compares favorably to 30% in the UK, 40% in the US and as much as 42% in Japan.[12]

## **Conclusion**

The distinct disadvantages of developers from Eastern Europe are their lack of experience in creating games for consoles, possible language barriers, and a physical absence from the Western market. There is also a risk of instability in specific economies (the Russian currency crisis in 1998) and a possible mistrust by Westerners of doing business in Eastern Europe. However, now that a group of nations in the region have joined the European Union, developers from these countries will be in a better position vis a vis the West.

But at the end of the day, there is definitely some strong potential in the game development industry of Eastern Europe. The most striking reason is the significant cost advantages, but with the prominence of several well-established studios and their increasingly competitive technical expertise, it's likely that we'll see more major console games produced in Eastern Europe over the next few years.

Still, there remain a few reasons why it is unlikely that the East will threaten the dominant position of the West in the game development industry. These include the small market share of Eastern companies, the increasing costs of establishing new studios, difficulties in entering the Western market, the lengthy project completion time of 2-3 years (which is not particularly ideal for company growth), often limited business skills, and poor access to funding.

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1. U.S. Department of Labor Bureau of Labor Statistics, May 2003 National Occupational Employment and Wage Estimates

2. Ministry of Labour and Social Affairs Czech Republic - Q1 2003 (for conversion to US dollars was used an exchange rate of Czech national bank of 30 March 2003)

3. U.S. Department of Labor Bureau of Labor Statistics, May 2003 National Occupational Employment and Wage Estimates

4. Ministry of Labour and Social Affairs Czech Republic - Q1 2003 (for conversion to US dollars was used an exchange rate of Czech national bank of 30 March 2003)

5. U.S. Department of Labor Bureau of Labor Statistics, May 2003 National Occupational Employment and Wage Estimates

6. Ministry of Labour and Social Affairs Czech Republic - Q1 2003 (for conversion to US dollars was used an exchange rate of Czech national bank of 30 March 2003)

7. 2003 Game Development Salary Survey, CMP Media Inc.

8. Author's estimation

9. 2003 Game Development Salary Survey, CMP Media Inc

10. Author's estimation

11. EU countries : Austria, Belgium, Cyprus, Denmark,, Germany, Greece, Finland, France, Ireland, Italy, Luxembourg, Malta, Portugal, Spain, Sweden, The Netherlands, United Kingdom, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia

12. KPMG's Corporate Tax Rate Survey - January 2004

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