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Book Review International Trade in Computer Software. By Stephen E. Siwek and Harlod W. Furchtgott-Roth

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The Economic Transformation of Eastern Europe: Views from Within

EDITED BY BERNARD S. KATZ AND LIBBY RITTENBERG, Praeger Publishers, 1992.

Reviewed by W. Eric McElwain*

The fall of Communism in Eastern Europe at the end of the last decade presented the leaders of Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and Yugoslavia with unprecedented challenges. Each of these nations had to determine a way to transform its economy from one based on the Soviet model and characterized by state ownership and central planning, to one based on the Western model of private ownership and free markets. Not only did methods have to be devised to allow decisions about production to be determined by the market rather than by a central authority, but new institutions had to be created which would assist the transition to an economy driven by the private sector.

The Economic Transformation of Eastern Europe: Views from Within, edited by Bernard S. Katz[1] and Libby Rittenberg,[2] is a compilation of essays written by scholars and economists from Poland, Czechoslovakia, Hungary, and Yugoslavia. The first three countries are considered to be farther along the path to capitalism and democracy than are other Eastern European nations. Yugoslavia, on the other hand, is in a state of disintegration and chaos, but is included because it has pursued a distinct form of socialism since the end of World War II. The authors write about their respective countries' experiences in transforming their social and economic systems, and each offers suggestions and opinions about how to deal with the difficulties that still lie ahead.

The book is divided into three sections. In the first, four different authors trace the history of private property ownership and transfer in their own countries, and each discusses the impact that this history has had on the effort to reprivatize the means of production. Hungary, for example, has done more than any other Eastern European country to achieve privatization, thanks to the creation during the 1980s of a system called "spontaneous privatization." Under this system, inefficient state enterprises transferred their property rights to shareholders, even though there was neither a change in the organization of the enterprise nor a market for the shares thus transferred. Czechoslovakia and Poland, on the other hand, both of whose systems allowed almost no private ownership, are still struggling to find equitable methods to privatize their economies.

The section on privatization is followed by several essays about the macroeconomic policies that each country is pursuing during the transition to a market economy. The authors discuss how an ideological system which encouraged waste and inefficiency must

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now be replaced by one which provides incentives to increase efficiency and productivity. Under the old system, enterprises were tacitly discouraged from meeting production quotas, since achievement of quotas resulted in the quotas being raised in subsequent years. The managerial class must now be retrained in the subtleties of a market system, and at the same time, the societies must learn to survive the turmoil caused by inevitable rises in the rates of inflation and unemployment.

The final section of the book looks at the microeconomics of transition. As large inefficient state enterprises are allowed to fail instead of being artificially supported by the government, Eastern European nations must look to small private ventures as the means to rebuild their shattered economies. The authors describe the problems faced by such ventures and the outlook in each country for their emergence and their long range success. Again, Hungary finds itself in a relatively advantageous position because free enterprise was never totally eliminated there as it was in most of Eastern Europe. In Poland, the agricultural sector was the area most resistant to state planning, and therefore it is now the area where a transition to private ownership and free enterprise is most likely to be achieved.

The essays in this book were written in 1990 and 1991, during the early stages of economic transition. Each author writes from an historical perspective unique to each country, and each is cautiously optimistic about the future. Perhaps the most valuable information for the reader is that each country in Eastern Europe possesses its own distinct economy. In turn, each economy has its own distinct problems arising from the country's particular historical development. Just as the Soviet Bloc was never a monolith in reality, so too Eastern Europe should not be viewed as a single entity which is trying to impose common solutions on common problems.

Legal practitioners looking for a guide book for doing business in Eastern Europe should look to this volume as background reading only. While it provides a solid historical perspective for the problems which these countries are facing, it is not intended as a "how to" book for lawyers or businessmen engaging in ventures within the former Soviet Bloc. Nevertheless, the practitioner who is dealing with this region for the first time may find that the book provides insights into why legal theory and reality have not yet merged in Eastern Europe. The practitioner may gain an understanding of why a knowledge of the newly reformed commercial laws in these countries is not enough to be able to function effectively. By understanding the historical background of each country's economy and the difficulties in changing fifty years of outmoded thinking, the practitioner may find it easier to interact productively with his counterparts in this region and to take advantage of the many emerging opportunities in this dynamic and rapidly changing part of the world.

International Trade in Computer Software

BY STEPHEN E. SIWEK AND HAROLD W. FURCHTGOTT-ROTH, Quorum Books, 1993.

Reviewed by Peter C. Schreiber*

> *It is possible to fail in many ways . . . while to succeed is possible only in one way (for which reason also one is easy and the other difficult—to miss the mark easy, to hit it difficult).*
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> —Aristotle[1]

If Aristotle in his infinite wisdom could have foreseen the advent of the computer age and its pervasive impact on our society, then his philosophical insight would have had prophetic applicability to the high-technology industry that has developed centuries later. In particular, the possibilities for failure have been many for the U.S. computer software industry, but it has succeeded at least in the short run. Stephen E. Siwek and Harold W. Furchtgott-Roth, both Washington, D.C.-based economists, have attempted to document and examine through detailed economic analysis the historical, current, and future outlook for the U.S. computer software industry in this compact and well researched work entitled *International Trade in Computer Software.* The authors freely admit that their approach to all the issues surrounding the U.S. computer software industry is an economic one. Given the authors respective backgrounds, it is not surprising that the book's economic bias and perspective leaves little room for more than a cursory legal analysis on the subject. For example, the authors throughout the book incorrectly characterize computer software licensing transactions as "sales" which is legally undesirable under section 109(a) of the Copyright Act. Nevertheless, the transactional attorney should find this book of value because with an improved understanding and appreciation for the business, economic, and marketing factors that impact this industry, they can better counsel and advise their high-technology clients who have to operate in this global marketplace.

The authors lay a strong foundation with facts and statistics supporting their thesis that the U.S. computer software industry has succeeded despite many reasons that it should be doomed to failure or mediocrity at best. In 1990, the core computer software industry accounted for 0.6 percent of gross domestic product (approximately more than $45 billion in revenues) and employed more than 360,000 people. The domestic success of the U.S. computer software industry is not an inconsequential achievement given the fact that the federal government had not even granted a separate Standard Industrial Classification (SIC) code related to computer software until 1972. In this era of global competitiveness, the U.S. computer software industry is viewed by many as vital to the U.S. economy because of its size, its importance as a source of critical inputs for other industries, its influence on American culture, and its prominence in strategic considerations.

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1. BARTLETT'S FAMILIAR QUOTATIONS 78 (John Bartlett & Justin Kaplan eds., 16th ed., Little, Brown & Co. 1992).

On the international side of the equation, foreign licensing revenues are not only coincidental but vital to the overall success of U.S. software companies because it represents additional revenue, market growth, possibilities to capture economies of scale, and opportunities to compete in many different markets. In 1990, U.S. software companies captured approximately fifty-seven percent of the $110 billion world market for software and related services. In prepackaged software particularly, U.S. software companies virtually dominate the globe. While the North American market remains the largest market for computer software and services, the growth rate in European and Asian markets is expanding rapidly. The authors proceed to then analyze the U.S. computer software vendor's most important non-U.S. markets, the revenues, market shares, and growth rates to name a few attributes.

It is also quite clear that U.S. software vendors lose substantial licensing revenues in these foreign markets as a result of unauthorized copying, counterfeiting, and other forms of software piracy. In many countries, the software pirates command market shares in excess of sixty percent which translates into an estimated $9 billion loss in licensing revenues. The authors argue that software piracy is a function of national intellectual property laws and the degree to which those laws are enforced.

The authors then introduce and review three economic theories that explain international trade patterns in computer software: comparative advantage, economies of scale, and first-mover advantages. The discussion relating to these economic concepts then provides the building blocks for the intervening chapters. Government intervention in the form of "strategic" trade policy is then explored relative to these economic theories where government intervention may take several forms including protective tariffs, import restrictions, subsidies and preferences for domestic industries, or special tax incentives.

With that understanding of economic theory in place, the authors then consider the reasons why the U.S. computer software industry should not have succeeded in international trade. Their analysis identifies several factors including very high labor and capital costs, regulatory barriers, exceedingly low levels of government support, generally unfavorable tax treatment, disincentives to export as a result of export control laws, and economic growth that has slowed in recent decades.

In spite of these disadvantages, the authors examine the historical market and industry characteristics that have led to the domestic and international success of the U.S. computer software industry. The United States developed the world's first computer hardware industry and the world's first computer software industry. The authors explain that countries that develop new industries often gain what economists call "first-mover advantages." In doing so, the U.S. computer software industry established many standards and conventions that will have a lasting impression on the global market for software for many years to come.

Historically, the authors attribute the emergence of the U.S. computer software industry not to private industry but rather to the demands of the U.S. government, particularly for defense-related applications. In 1945, the ENIAC, the first modern digital computer, was built under a U.S. Army contract. The military-industrial complex of the World War II era fostered the innovation in computer technology, thus driving U.S. government demand for the development of computer software. In the early decades of electronic computing, computer hardware manufacturers increasingly sought to sell computers not only to the military but also to businesses, which in turn drove the demand for the devel-

opment of business-specific software applications. Since most computer hardware manufacturers were U.S. companies, its not surprising that the computer software industry emerged in the United States. Most of the early software was developed and supplied by either the computer hardware manufacturers such as IBM, the U.S. government, or university computer facilities. Thus, the early development of the computer hardware industry in the United States conveyed significant first-mover advantages to the U.S. computer software industry. Other first-mover advantages cited by the authors included the fact that the programming languages and supporting documentation for the computer hardware were English-based, compatibility between the computer hardware and software, intellectual property protection, strong cooperative arrangements between the computer industry and institutions of higher education, and the creation of a computer culture that spawned today's generation of computer entrepreneurs like Steven Jobs and Bill Gates.

The legal analysis related to the role of intellectual property protection in this equation is disappointing and is dealt with in a single paragraph. On the other hand, the historical discussion on hardware and software compatibility relative to IBM's marketing strategies of the early 1960s and the resulting competitive advantages it produced is quite interesting and instructive. The authors mention that in 1968 IBM was forced to abandon its practice of freely "bundling" software with IBM hardware in a single transaction, and as a result, the independent "prepackaged" software industry was born. Some further discussion on the antitrust and unfair trade practices aspects of that historical decision would have provided the reader with a better overall legal understanding of the situation. Also, the authors note the birth of the "prepackaged" software industry, but fail to mention the explosive growth and viability of the personal computer (PC) industry that resulted due to the introduction of "prepackaged" PC software, specifically Visicorp's VisiCalc spreadsheet for the Apple II and Lotus 1-2-3 spreadsheet for the IBM PC in the late 1970s and early 1980s respectively.

The most glaring oversight in the book is the authors analysis relating to chronicling IBM's entrance into the PC industry with the introduction of its IBM PC. As the PC industry was experiencing explosive growth rates, IBM feared that its window of opportunity was rapidly closing and would be unable to set the de facto industry standards for this computing platform. So, in its haste to bring a product to market, IBM's flawed marketing strategy was to use standard, off-the-shelf, nonproprietary components, and publish the technical details of the computer's architecture. The authors correctly surmise that this blunder was as stunning in its ineptness as the earlier 1960's strategy was in its brilliance. But the authors attribute the downfall of IBM to its relationship with Microsoft Corporation who supplied the operating system software. Microsoft is given more credit for this downfall than it rightfully deserves, because the authors needed to trace back one more step in the decision making process.

For the first time in IBM history, IBM elected to use a non-IBM, nonproprietary microprocessor and chose Intel Corporation's 8088 16-bit microprocessor. This critical and basic element of the IBM-Intel-Microsoft triangle was not even discussed by the authors. Once IBM had selected a microprocessor vendor to supply the brain of the computer, IBM began shopping around for a vendor to supply the operating system software to control the various functions of the Intel 8088 microprocessor. IBM originally approached Digital Research, Inc. (DRI), the creators of the de facto industry standard operating system for Zilog Z-80 8-bit microprocessors. DRI was known to be working on an operating system for the next generation Intel 8088 microprocessor. For some

reason, DRI did not return IBM's calls, and Microsoft heard opportunity knocking on the door. Around the same time, a small, Seattle start-up software venture had written an operating system for the Intel 8088 microprocessor. Microsoft Corporation opportunistically acquired the small company, closed the deal to supply IBM with an operating system, and added further enhancements into what has become known today as MS-DOS. Microsoft's lack of savvy was only out done by IBM's self-inflicted, colossal blunders. In 1980, when Microsoft was only a thirty-three person start-up venture, Mr. Gates actually offered to let IBM buy the rights to DOS for $75,000, but IBM passed on the offer.[2] And opportunity knocked twice when in 1986, Microsoft made IBM another offer that might have given IBM an upper hand: buy a ten percent stake in Microsoft for around $70 million.[3] IBM declined.[4] In retrospect, Microsoft may never have evolved into the industry dominate player it is, but for the fact that IBM selected Intel as the microprocessor vendor, that DRI let the opportunity of a lifetime slip through its fingers, and that IBM did not accept the offers of a fledgling Mr. Gates and Microsoft. So in actuality, IBM's inability to control both Intel and Microsoft led to its demise and opened the IBM PC compatible clone market. As a result of IBM's miscue, both Intel and Microsoft have capitalized on this opportunity and vaulted themselves into multibillion dollar companies.

Finally on this point, the authors could have applied some real economic analysis to explore whether IBM actually was hurt by the advent of the IBM PC clone industry. Arguably, IBM benefited from the market expansion at a time when it could not have supplied the market demands and by forestalling competitive entry of a different de facto industry standard (i.e. CP/M, Apple II, and Macintosh).

The historical analysis aside, the authors contend that the U.S. computer software industry would still have prospered in the United States in part because it is the largest software market in the world. Success in the United States is a cornerstone for success in the global market. The U.S. computer software companies have succeeded in the U.S. market in part because of the market's size, diversified sectoral demand, rapid technological change and innovation, U.S. intellectual property law protection, intensity of competition, established distribution channels, the use of the English language, and government demand. These factors have allowed U.S. computer software industry to exploit economies of scale in production in both domestic and international markets.

The authors argue that even if the United States had not been the location of the initial computer software industry, the United States would still have been an attractive location to develop computer software. The authors cite several reasons: the frontier of software technology is shaped in the United States, there is an attractive supply of resources for the industry including education, training, and a large base of skilled and flexible labor, the market structure appears to favor the industry and industry innovation, well-developed capital markets for investment, and the United States provides substantial legal protection and enforcement for computer software vendors.

An interesting comparative analysis between the software and motion picture industry is presented next, and stands for the authors proposition that, as a threshold matter, the

2. PAUL CARROL, BIG BLUES: THE UNMAKING OF IBM 24 (1993).
3. *Id.* at 119.
4. *Id.* at 24-25, 119.

differences between software and motion pictures are more important than the similarities. If software is truly "like" motion pictures, then the U.S. computer software industry can reasonably expect that its current world market shares will not erode any time soon. But the authors identify that the most obvious difference between motion pictures and applications software is that most software has a functional purpose beyond entertainment. There are arguably five categories that software could be divided into: systems software, business software, office automation software, educational software, and recreational software. Recreational software is clearly analogous to motion pictures. This may be true, but the lesson to be learned in the high-technology industry is that change is a constant and no theory or definition will last indefinitely. As the multimedia industry develops and evolves, and the various mergers and acquisitions amongst computer hardware and software firms, personal electronics firms, music firms, motion picture firms, and telecommunication giants continues to blur the lines, this proposition may need to be reexamined in the near future. If the proposed Bell Atlantic Corporation and TeleCommunications Inc. merger is any indication, then the electronic information highway will be arriving sooner rather than later.

The future of the U.S. trade in software is considered in light of two forms of competition now faced by U.S. computer software developers, specifically migration of software production to lower cost, English-speaking nations such as India, and alternative methods of software production from developed nations such as Japan. The authors address the question will U.S. programmers join the ranks of the U.S. steelmakers and automobile workers, and conclude that the basic answer is "no." Offshore migration will continue, particularly for more structured, separable tasks such as software maintenance programming, but true, high-value software development will remain U.S. based, at least through the next decade. In fact, the U.S. has enjoyed a steady flow of skilled programmers who have emigrated to the United States to greatly improve their standard of living through dramatic wage differentials. The brain drain continues to be a difficult problem for developing countries and adversely impacts their attempts to improve their own country's standard of living.

Finally, the authors discuss "industrial" policy issues and the role of U.S. government software initiatives in the success and competitiveness of the U.S. computer software industry. The authors compare that with government initiatives abroad including Japan's Fifth Generation Project and the European Strategic Program for Research and Development in Information Technologies (ESPRIT). The authors conclude that government involvement has had mixed results and recommends that this growth engine not be derailed by poor policy initiatives. The authors believe that the single most important policy initiative that can be adopted by the U.S. government in the software area is improving the degree of intellectual property protection afforded to software in foreign markets. As this last comment closes the book and the baton passes from the economists to the legislators, diplomats, and practitioners in the intellectual property area, it is this latter group's task to attempt to implement and enforce such a legal policy on a worldwide basis. Unfortunately, the daunting task of changing people's mindsets to respect another person's intellectual property rights through education remains long after the laws are on the books.

Overall, the authors have written a fine work and it should serve as a primer to the business person or new attorney entering this field and fill in any gaps or provide a different perspective for the seasoned practitioner who represents high-technology clients. In the long term, only time will tell if the U.S. computer software industry will maintain

its present success or find ways to fail like other previously dominate U.S. industries in this era of global competitiveness.