

4. The Economic and Business Dimension of the Information Revolution

Moderator: C. Richard Neu

Rapporteurs: Richard Hundley and C. Richard Neu

The Virtual Conference

The moderator began the session by summarizing the discussions that took place during the virtual conference.²³ Four main topics were raised in the course of the virtual conference.

The “new economy.” There was general consensus among participants in the virtual conference that discussion of a “new economy” and debate about whether information technology is creating an economy that is “new” in some meaningful sense is not particularly helpful. All participants acknowledged that information technology is indeed affecting the economy – creating new opportunities, allowing old tasks to be done in different ways, shifting relative costs, etc. But there seemed to be little sympathy for the notion that we have witnessed or will witness some discontinuous change in economic processes, economic behavior, or fundamental economic laws. Indeed, during both the virtual conference and the physical conference that followed, participants were able to discuss the consequences of new information technologies for business quite comfortably using the language and the broad conceptual framework of traditional economics.

What is driving or shaping change in business and economics? There was some discussion during the virtual conference about the factors that are really driving change in the business and economic environments. Some participants warned against a technological determinism that places excessive emphasis on new technologies as the principal causes of changes in business practices and economic interactions. They noted in particular that technology, by itself, is

²³ The virtual conference on this discussion track was moderated by Colin Crook, of the Wharton School and formally Chief Technology Officer at Citigroup. Illness prevented Mr. Crook from attending the physical conference.

unlikely to provide satisfactory explanations for *differences* among advanced industrial economies – between, say, the United States and Western Europe. Advanced economies have access to the same technologies, they noted. Yet the degree to which these technologies have been adopted, the purposes to which they are put, and their apparent consequences for business and economic life vary significantly from one country to another. Some participants, for example, suggested that differences in national policies – encouraging or discouraging private investment in information technology, facilitating or hindering economic restructuring to take advantage of new technologies, shaping private attitudes towards risk-taking, and so on – may be the underlying reasons that different economies have exploited technology in different ways and that technology has affected economies differently.

The nature of European and American markets. In a similar vein, others emphasized differences in the character and the structure of U.S. and European markets, noting that European firms are only now beginning to recognize the advantages and the challenges that come with doing business in a very large and increasingly competitive market. American firms, of course, have faced these advantages and challenges for years. It is perhaps no surprise, therefore, that American firms seem to have been quicker to exploit technologies that support efficient large-scale operations. Alternatively, the very diversity of European tastes and requirements may make Europe particularly fertile ground for information technologies that support easy customization of products and services. Participants in the virtual conference also took note of differences between European and American labor markets and capital markets. No clear conclusions were reached during the virtual conference on how these differences have influenced the use or the consequences of information technology in Europe and the United States. All of these subjects, though, attracted attention during the physical conference.

The influence, dominance, and control of the United States in information technology. Virtual conference participants emphasized the degree to which the United States, U.S. culture, U.S. business practices, firms with strong U.S. bases of operations, and English dominate international business – and, increasingly, European business – today. Some saw information technology as contributing to U.S. dominance by facilitating the spread of all things American and by strengthening the economies of scale enjoyed by large – i.e., American – firms. The question lying beneath this realization is whether Europe will or should find a different way to exploit the advantages of new technologies. Is the American way of modern business the best way or the only way? Must or should the broader social and economic consequences of the information revolution in

America be repeated in Europe? Will the advantages that accrue to first-movers be such that Europe cannot chart a different course as it incorporates information technology into its business and economic life.

The Physical Conference

A few major themes dominated face-to-face discussion of the business and economic consequences of new information technologies. As is often the case in conference discussions, these major themes appeared and reappeared in a somewhat disjointed fashion. In this summary, we have grouped comments thematically rather than chronologically. In doing so, we have imparted a sense of orderliness that was missing from the conference itself. While this may aid the after-the-fact reader, it fails to capture the pleasant and creative anarchy of the actual event.

Differences between Europe and the United States

Conference participants explicitly recognized that the advanced economies of the European Union and the United States are more like each other in their use of information technology and in the business and economic consequences of this use than either is like any other region of the world. All participants also recognized that the advanced economies of the EU do not constitute all of Europe – in economic, demographic, political, or social terms. Nonetheless, most of the conference discussions focused on differences between Western Europe and the United States. This focus was not surprising, of course, in light of the issues raised during the virtual conference. Many conference participants found interesting the fact that two regions with such similar endowments are nonetheless responding differently to emerging technological opportunities.

The most prominent subject of discussion was the difference between **American and European approaches to economic and social change**. Various commentators noted that substantial changes in patterns of economic activity are required to take full advantage of new information technologies. Firms must be restructured. Sometimes firms or pieces of firms have to be closed or sold. Entirely new firms must be created to pursue new lines of business. Many firms will face a need for substantial investment in new equipment, new processes, new products, and new kinds of human capital. Demand for particular kinds of workers changes. Some workers will be laid off while other kinds of workers will be in short supply. Some traditional jobs will become dead ends, but other workers will see expanded opportunities.

Considerable attention was focused on the relative difficulty of such change in Europe, compared to the United States. Several commentators noted, for example, that labor mobility is low in Europe. European labor laws make it difficult or expensive for firms to lay off redundant workers. These same laws discourage employers from hiring new workers when business prospects are uncertain. European workers show little willingness to move from one region to another (even within the same country) to take advantage of employment opportunities. Because academic and professional credentials are not fully standardized yet, employers sometimes find it difficult to identify satisfactory workers who come from different parts of Europe. The consequence of all of this is that the labor market “churning” associated with economic change, as workers leave old jobs and find new ones, is more painful in Europe than in the United States.

Some participants saw information technology as providing increased opportunities for “virtual mobility” that will allow workers to take new jobs without leaving areas where they are linguistically, culturally, or socially at home. Others, however, pointed out that the physical location of firms and their workers seems to remain important, as evidenced by the persistence of geographically concentrated industrial “clusters.”²⁴

Some participants noted that European corporation law and patterns of shareholding complicate mergers, acquisitions, divestitures, and other changes of corporate control. Gaps in European financial markets, especially the absence of a robust venture capital market, hinder start-ups of new firms. Other participants noted that formal European bankruptcy law and informal social norms attach severe penalties to business failures and therefore discourage risk taking.

More broadly, participants noted a general distrust in Europe of major economic or social changes. One commentator noted that Europeans tend to consider carefully and to engage in lengthy debates about the consequences of potentially important new technologies or economic arrangements before adopting such changes. He contrasted this with what he saw as an American penchant simply to leap into such changes confident that ways will eventually be found to manage any negative complications that may arise. Voicing a similar sentiment, another commentator noted that the best-selling books on information technology in the United States tend to emphasize the wonderful new opportunities afforded by this technology. In contrast, best-selling European

²⁴ One participant cited several relevant references in this regard: Porter (1998); Braczyk, Fuchs, and Wolf (1999); and Micklethwait and Wooldridge (2000), especially pp. 210-214.

books on the same subject dwell on the potential for new technologies to disrupt or to undermine established social patterns.

The net result, several commentators noted, was that the process of “creative destruction” by which new technologies and business paradigms replace their predecessors proceeds more slowly in Europe than in the United States. One commentator, however, noted the irony of this situation. Europe, he pointed out, had suffered enormous destruction during the last century and had been rewarded with very creative and effective social, political, and economic mechanisms.

Another key theme in conference discussions was the relative importance attached to **equity and efficiency** in Western Europe and in the United States. Several participants questioned whether European concerns for equality of outcomes was consistent with the kinds of risk-taking and the occasionally large rewards associated with a dynamic information technology sector. Others noted Europe’s search for *win-win* applications of information technology, which allow everybody to be better off. They contrasted this with American willingness to accept *trade-offs* of benefits for some groups against losses for other groups and noted that the American approach is likely to result in a more aggressive pursuit of new technologies.

Closely related is a European desire for **convergence** among the countries of Europe, including those not yet admitted to the European Union. No one at the conference questioned the political value of efforts to reduce gaps in the prosperity of different European countries, but some wondered if pursuit of such objectives is consistent with full exploitation of the opportunities afforded by new technologies.

One participant noted that although Europe is and will likely remain attached to the ideals of social equity and inter-European convergence, influences already afoot will inevitably make Europe more like America--more tolerant, that is, of disparities in income and wealth within nations and more realistic about the fact that all nations cannot achieve similar rates of economic development. The completion of the European market will increase competition within Europe, eroding previously protected markets.²⁵ The Stability Pact will limit

²⁵ "Completion of the European market" is a phrase that is commonly applied (in Europe) to a constellation of public- and private-sector actions that will eventually result in the EU becoming a single market — for goods, services, labor, and finance. Most official barriers to the flow of goods, services, and labor within the EU were eliminated in 1992. The fixing of exchange rates in 1998 removed further barriers to intra-European transactions. The imminent arrival of the Euro currency will be yet another step in this direction. European governments continue to harmonize national policies to make commerce and finance increasingly borderless. And private companies are gradually realigning and relocating operations to take advantage of the opportunities afforded by the

government deficits, and competition for employment and investment will restrain taxation. EU enlargement will only heighten this competition. Similarly, adoption of a common currency will speed the integration of European financial markets and intensify competition for investment. The result of these forces will be to limit the capacity of European governments to pursue social equality. Although European governments will remain “officially” committed to equality of outcome among their citizens, the “reality” will be increasingly laissez-faire policies that will hasten the incentives for and increase the rewards accruing from successful exploitation of information technology. Other participants warned against generalizations that suggest that Europe shares a single approach to preserving social equity. In fact, there are many models within Europe, and these models will find themselves increasingly in competition.

Some Common Challenges

Despite the emphasis on differences between the United States and Western Europe, there was some discussion of challenges that both societies face with regard to information technology. Both societies, for example, will have to arrive at workable methods for allocating and protecting intellectual property rights in an information age. One participant noted different European and American perspective on this issue. Europeans, he asserted, have tended to emphasize the *non-exclusivity* of information (one person can use information without diminishing its value or availability to another) and to seek equitable ways of sharing information. Americans, on the other hand, have tended to emphasize private rights to intellectual property in the hopes of encouraging innovation and creation. Although some participants stressed the difficulty of reconciling these two points of view, there was general consensus that America and Europe will have to come to some common understanding of the appropriate meaning of intellectual property rights and of appropriate measures to safeguard these rights.

Other participants emphasized the common problems faced by firms in both the United States and Europe in managing payments for content delivered through the agency of new information technologies. No one, it was noted, has yet developed a satisfactory approach to micro-payments for small quantities of information. Without such a payment mechanism, some argued, the full

expanded European market. The full implications of economic and financial liberalization that has swept Europe in recent years have not yet been felt, and it is in this sense that the single European market is not yet “complete.”

potential of new technologies to deliver large amounts of information is unlikely to be realized.

Another participant expressed the view (apparently widely accepted among participants) that threats to privacy constitute a “time bomb” for businesses seeking to utilize new information technologies. He noted serious differences between America and Europe over citizens’ rights to privacy and over what constitutes adequate protection of these rights. The seamless nature of the information environment, however, will eventually force American and European users of new technologies to adopt common standards.

Some participants expressed the notion that differences in government policies and national cultures as they relate to business and the exploitation of information technology will eventually become irrelevant. The imperative of doing business globally will eventually force firms to adopt more or less similar business models. Consumers who wish to avail themselves of the benefits of global commerce will eventually adjust to a global way of doing business. Differences between Europe and the United States in the ways that information technology shapes the business and economic environments may be important – economically, socially, and politically – in the medium term. But eventually – and perhaps not too far in the future – these difference may be rendered insignificant.