
**THE INFORMATION REVOLUTION IS FOLLOWING A
SOMEWHAT DIFFERENT AND MORE DELIBERATE
COURSE IN EUROPE**

Because of differences in the underlying social, political, and economic climate, the information revolution is following a somewhat different and more deliberate course in Europe than in America, even though the underlying technology is largely the same.¹

EUROPEANS PLACE MORE EMPHASIS ON WIRELESS

In the technology arena, the European view of the information revolution is similar but not identical to the American view. The Europeans place much more emphasis on wireless technology as enabling mobile gateways to the Internet and as an area where they feel they are currently in the lead.

This European enthusiasm for wireless has been tempered somewhat by Europeans recent experience with “third-generation” (3G) wireless.² Many Europeans have been counting on their current lead in 3G technology to give Europe an edge in the next set of information society developments.³ Whether this will turn out to be true remains to be seen, in view of the market uncertainties and financial difficulties currently facing the leading European wireless and telecommunications companies engaged in 3G development. Simply put, the initial market projections for 3G telephony appear to have been considerably overblown, and the European telecommunications companies appear to have paid excessive amounts for their 3G licenses.⁴ This could well thwart Europe’s 3G ambitions.⁵

THE INFORMATION REVOLUTION IN EUROPE IS DEVELOPING IN A DIFFERENT CLIMATE

While the technology underpinnings are largely the same, the social, political, and economic climate in which the information revolution is developing in Europe differs in important ways from that in America.⁶

Differing European and American Approaches to Economic and Social Change

Economic and social change seems to come easier in America than in Europe, sometimes much easier.⁷ As individuals, Europeans are on average much more risk averse than are Americans when it comes to economic change.⁸ As a society, Europe is generally distrustful of major economic or social changes. As a result, many more obstacles to change have arisen in Europe than in America, including a financial sector that is less supportive of small startup companies.

The Greater Importance Europeans Attach to Economic and Social Equity

Another key difference between Europe and America emphasized in the conference discussions is the much greater importance Europeans attach to economic and social equity. Europeans place a much greater value on equality of outcomes than do Americans, who value equality of opportunity rather than of outcomes and are more accepting of “winner takes all” situations. This greater European concern for economic and social equity may be inconsistent with the large rewards often associated with successful risk-taking in dynamic business sectors.

The European Desire for “Convergence”

Closely related to the European desire for economic and social equity is a desire for “convergence” among the countries of Europe, where by convergence is meant the reduction of differences in economic prosperity among the various European nations—including those not yet admitted to the European Union. This is another area in

which America clearly differs from Europe. Most American states don't want to "converge" with other states; they want to get ahead of those states.

Some observers, Europeans as well as Americans, wonder if the pursuit of economic convergence is consistent with full exploitation of the opportunities afforded by the new information technologies.⁹

Differing Trade-Offs Between Market Forces and Government Policies

Europe and America take differing approaches to balancing these factors: the United States gives market forces more of a free rein; Europe leans harder on government policy to produce socially desirable ends. This is clearly related to the U.S. emphasis on economic efficiency versus the European emphasis on economic and social equity.

A Greater European Emphasis on Top-Down Planning

Closely related to this is a greater European emphasis on top-down planning by governmental and business elites (often working in close conjunction), both on a national basis and by the European Union. The United States relies much more on bottom-up, market-driven, private-sector planning, with the government role limited to preparing the playing field and providing ground rules for competition and innovation, but not trying to second-guess where the breakthroughs and developments will occur.

The European Emphasis on Sustainability

A recurring theme in Europe today is the question of sustainability: whether the information revolution will hinder or enhance sustainable—in environmental and economic terms—development.¹⁰ Most Europeans attach considerable importance to achieving sustainable development.¹¹ Many also acknowledge, however, that such a future is unlikely to come about without significant intervention by governments and other agents of stability and social change.

THE COURSE OF THE INFORMATION REVOLUTION IN EUROPE IS SOMEWHAT DIFFERENT

As a result of this different climate, the information revolution is following a somewhat different course in Europe than in America:

- Because substantial change in the patterns of economic activity is required to take full advantage of the new information technologies, with new companies arising and some old companies falling by the wayside, with new jobs appearing on the scene and some old jobs disappearing, the differing European and American attitudes toward such change could be quite consequential. In particular, the process of “creative destruction” by which new technologies and business paradigms replace their predecessors as the information revolution progresses is likely to proceed more slowly in Europe than in the United States.¹²
- The “winner takes all” mentality in the United States has led to a very aggressive pursuit of new IT-related business opportunities, particularly by small startup companies financed initially by venture capital. The European economic and social equity emphasis is leading to a more subdued approach to these same opportunities in much of Europe.¹³
- The top-down planning mentality in Europe, with governments playing a major role, reinforces this slower approach because deliberate, top-down planning almost always takes longer, particularly when governments are involved.¹⁴
- As a corollary to all of the above, when a new technology opportunity or economic arrangement manifests itself, the American approach is to try it out and see what happens. The European approach is to first assess the likely consequences, to make sure nothing bad—or at least not too bad—will happen, before trying it out.¹⁵

All of this means that up to now the information revolution has been proceeding more deliberately in Europe than in America, with the United States in the vanguard in most (but not all) IT-related areas and Europe following along somewhat behind. This is likely to continue for at least the next few years, if not longer, Europe’s current lead in wireless telephony notwithstanding.¹⁶

WILL, OR MUST, EUROPE BECOME MORE LIKE AMERICA? MAYBE YES, MAYBE NO

Given all these differences between Europe and America, what does the future hold? Driven by the forces of the information revolution and globalization, will Europe become more like America? To succeed in the information age, must Europe become more like America? There is no consensus on these questions among knowledgeable observers, European or American.¹⁷

Some observers—notably European—feel 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 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.¹⁸ The European Union Stability Pact will limit government deficits, and competition for employment and investment will restrain taxation. European Union 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.

In this view, 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 accelerate the incentives for and increase the rewards of successful exploitation of information technology. In short, Europe will become more like America.¹⁹

Other observers strongly reject this view, warning against generalizations that suggest that Europe shares a single approach to preserving social equity. In fact, they say, there are many social-economic models within Europe, and some of them, at least, will prove able to withstand the American challenge.²⁰ In these observers' view, Europe will be able to maintain its cherished differences.

SOME EUROPEANS VIEW AMERICAN DOMINANCE AS PART OF THE “DARK SIDE” OF THE INFORMATION REVOLUTION

The U.S. dominance of the information revolution is brought up frequently by European observers. Many instances of this dominance are cited, including U.S. control of the development of the Internet, the procedures for assignment of Internet domain names, and Hollywood’s dominance of film and television entertainment and its effect on European and other non-U.S. cultures.

Directly related to this U.S. dominance are issues of trust in and dependence on the United States—in European eyes, there is too much need for trust and too much dependence. According to observers, many Europeans are worried about their increasing need to trust information systems built (or integrated) in the United States on which their business and governmental operations and critical infrastructures depend. Europeans wonder if deliberate security “back doors” or flaws are inserted into these U.S.-supplied information systems to facilitate U.S. governmental and commercial intelligence collection.

Because of these trust and dependency issues, many Europeans view the United States as part of the “dark side” of the information revolution.²¹ This could have important implications for future U.S.-European relations.

NOTES

¹The picture of the information revolution in Europe presented here is based largely on material presented during the RAND/NIC conference on the information revolution in Europe, held in Belgium in April 2001. The proceedings of this conference are presented in Hundley et al. (2001).

²First-generation (1G) wireless denotes the voice-only analog cellular phones (and supporting networks) that have been around since the 1970s and were deployed widely in North America, Europe, and other areas in the 1980s and early 1990s. Second-generation (2G) wireless denotes the digital cellular phones and networks that were deployed beginning in the mid-1990s and are widespread throughout the world today. As well as voice, 2G wireless can provide limited data services (e.g., text messaging). Third-generation (3G) wireless is the designation applied to multimedia (voice, data, and video) cellular phones and networks that will be deployed over the next few years. These 3G cellular phones have a much larger bandwidth than the 2G phones and are expected to provide functionally useful Internet connectivity to mobile users. Between 2G and 3G wireless is enhanced second-generation (2.5G) wireless; these

cellular phones have a bandwidth between that of 2G and 3G and can provide more-advanced data services than does 2G.

³“Information society” is a loosely defined term used to signify a society in which networked information and communication media are having a profound effect on many aspects of life.

⁴Several European telecommunications companies are in considerable financial difficulty today because of the very large sums they paid for their 3G licenses. See, for example, *The Economist* (2001) and Baker and Clifford (2002).

⁵See *The Economist* (2002a) for a discussion of this point, and Connell (2002) for a status report on the difficulties facing Europe’s 3G efforts.

⁶This summary description of the social, political, and economic climate in Europe necessarily oversimplifies, for purposes of brevity, the nuanced discussion of the many “climatic” variations occurring across Europe that is contained in Hundley et al. (2001).

⁷This was repeatedly emphasized during RAND’s European conference discussions.

⁸In a recent article, Levine (2001) describes the American approach to economic change as emphasizing ambition over security, saying, “For many Americans—particularly the most competent—the hope of getting rich is a more compelling incentive than the fear of becoming poor.”

⁹This point was made by some participants, European as well as American, in RAND’s April 2001 conference.

¹⁰This was a recurring theme among the European participants in RAND’s April 2001 conference. No consensus was reached on this question.

¹¹Sustainable development is much less of a concern today in the United States. Hilsenrath (2002) summarizes current U.S. views, pro and con, on this subject.

¹²This was noted several times during RAND’s April 2001 conference.

¹³In much, but not all, of Europe. During the 1990s, for example, there was an explosion of startup IT companies in Sweden and Finland.

¹⁴Not all top-down, government-directed/influenced planning is bad. Historically, some has proven quite valuable and has actually sped up economic development: e.g., the U.S. interstate highway system, the benefits of the common-format VHS system in conflict with Betamax, the systematic creation of high-tech industrial parks in various nations, and the Asian government-directed/influenced growth rates that have averaged about three times Western growth rates (and except for Japan still do). (We thank RAND colleague William Overholt for this observation.)

¹⁵This point was made, in exactly these words, by one of the European participants in RAND’s April 2001 conference.

¹⁶As noted earlier, the leading European wireless and telecommunications companies attempting to exploit this lead face major market uncertainties and financial difficul-

ties. This could well thwart Europe's 3G ambitions. See, for example, *The Economist* (2001 and 2002a) and Baker and Clifford (2002).

¹⁷Participants in RAND's April 2001 conference discussed these questions intensely, with no consensus emerging among either the Europeans or Americans present.

¹⁸"Completion of the European market" is a phase that is commonly applied (in Europe) to a constellation of public- and private-sector actions that will eventually result in the European Union becoming a single market—for goods, services, labor, and finance. Most official barriers to the flow of goods, services, and labor within the European Union were eliminated in 1992. The fixing of exchange rates in 1998 removed further barriers to intra-European transactions. The arrival of the euro in January 2002 was 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 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."

¹⁹As an extension of this view, some participants in the April 2001 conference pointed out that the generation that will do the most to shape the course of the information revolution in Europe—today's young people—was not represented at that conference. Conference participants, they asserted, know little about the attitudes of young people toward information technology, work, or society. They speculated that members of the younger generation of Europeans will become (or already are) more like their American contemporaries than their elders are or will be.

²⁰As an extension of this view, many European participants in the April 2001 conference believed that although IT will increase homogeneity within Europe and between it and other developed nations in some respects, it will enhance heterogeneity in others (e.g., harmonized laws but mass customization).

²¹This "dark side" aspect of U.S. dominance of the information revolution was brought up frequently by European participants in RAND's April 2001 conference. This surprised many if not most of the U.S. attendees at the conference.