

## FOREWORD

This issue of the *Houston Journal of International Law* deals with the application of law to new technology. As society has developed technology, law has always evolved to come to terms with it. Attempting to analyze the interaction of law and technology seems particularly appropriate for the Spring 1984 *Journal*. What is the relationship between legal analysis and the introduction of technology into society?

In this century, technological innovations have proceeded at a faster rate than at any other time in human history. The present level of industrialization in Europe, Japan, and North America took place over a century and a half, from the last quarter of the eighteenth century until the middle of the twentieth. Most of the law with which we are now familiar is devoted to rationalizing the impact of that industrialization on Western and, particularly, American society.

One consequence of industrialization was the transformation of the societies involved, from their rural agricultural bases to urban mechanization. In 1800, the United States was a minor nation having a population of 5.3 million people, of which only about six percent lived in cities. The Revolutionary War was over, the new nation established, and most of the nation's energy was devoted to farming the land and opening up the Western frontier. "Business" as we know it today was virtually nonexistent; with most manufacturing and trading conducted by individuals. The law of the 19th century was devoted to this rural agricultural society and its corresponding issues.

By 1950, the United States was one of the world's leading industrial nations. Its manufacturing and technological competence had recently been responsible for winning a massively destructive world war. Out of a total population of 150 million, 96 million, or 64%, lived in cities; and almost 80% of the labor force was engaged in non-agricultural occupations. Around 60% of all workers employed in business worked for organizations having more than 100 workers. The law of this emergent nation was increasingly devoted to the issues of an urban industrialized society.

The writers of the last quarter of the twentieth century have been chronicling the transition of American society to yet another type of social condition, the post-industrial society. Daniel Bell, in his seminal

work *The Coming of Post-Industrial Society*<sup>1</sup> defined and named the new condition. In a later work, Professor Bell pointed out that:

The post-industrial society centers on the technology, the kind of *work* people do (though there are political implications in the relative decline of the working class) and the organization of *knowledge*.<sup>2</sup>

Herman Kahn and his co-workers at the Hudson Institute have described the new society as one of economic growth and increasing human well-being.<sup>3</sup> At the same time, John Naisbitt has shown that in the post-industrial society the basic commodity is not manufacturing but information. In this regard, Mr. Naisbitt reports that while in 1950, only about 17% of the American labor force worked in information jobs, in 1982 more than 60% of the labor force works with information and only 13% is engaged in manufacturing operations.<sup>4</sup>

The change in the nature of society can be attributed to a number of factors, among which advancing technology is perhaps the most significant. Inexorably, the post-industrial society comes to us through technological change and we encounter new legal issues as these technologies emerge. In a 1974 essay on the post-industrial society, Daniel Bell identified five major international developments in technology which he believed sufficiently significant to affect the relative strength of nations. These were:

1. Changes in the nature of energy production,
2. The spread of international telecommunications through global satellites,
3. The development of marine resources,
4. The use of earth resource satellites for exploration, and
5. The prediction and possible control of weather.<sup>5</sup>

Each of these developments presents its own array of social and legal issues.

This technology issue of the *Houston Journal of International Law* attempts to further identify and address some of these emerging legal questions of our post-industrial society. In his article on ocean resource recovery and attendant marine pollution, John Kindt shows the conflicts encountered in the great development of submarine resources

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1. D. BELL, *THE COMING OF POST-INDUSTRIAL SOCIETY* (1983).  
 2. D. BELL, *THE CULTURAL CONTRADICTIONS OF CAPITALISM* 14 (1976).  
 3. H. KAHN, W. BROWN & L. MARTEL, *THE NEXT TWO HUNDRED YEARS* (1976).  
 4. J. NAISBITT, *MEGATRENDS* 13-14 (1982).  
 5. D. BELL, *THE POST-INDUSTRIAL SOCIETY—EXPECTATIONS FOR THE 1970'S AND 1980'S*, reprinted in H. KAHN, *THE FUTURE OF THE CORPORATION* 32-35 (1974).

and the need to control the consequences. As the increasing use of computers facilitate the movement of information across international borders, so will restrictions on such transborder data flow also increase as noted in Houston Lowry's article. The establishment of a manned orbital space station by the United States in the early 1990s, was recently identified as a national objective by President Reagan. Administration of United States commercial space activity, the evident counterpart of such a venture, is the subject of Arthur Dula's article.

The three comments and the two book reviews in this issue also discuss new technologies and the new law involved. Kelly Chaves' comment on acid rain reminds us that human decision-making is one of the factors in weather formation. Kevin Golden's comment treats the issues surrounding the dissemination of personal information in transborder data flows. Opening up the Western American frontier in the 19th century carried with it its own 19th century problems; Christie Condera's comment outlines the issues provoked by attempts to open the space frontier in the late 20th and early 21st century. A provocative memorandum concerning the Unispace '82 conference, and proposed by the United States Office of Technology Assessment (OTA), is discussed by Arthur Dula. Both the OTA report and its review, note that the use of space technology and the conduct of foreign policy are inseparable. David Burnham's new book, which discusses the danger posed to individual freedom by bureaucratic application of computers, is reviewed by René Zentner.

In the past, the rate of introduction of new technology into society was determined by the rate at which that technology could be developed. There was a general belief that new technology was beneficial, and historically, (with a few exceptions in the 19th century Luddites and *saboteurs*) technological advances were happily absorbed by industry. During those days, society got its new technology first and the law relating to that technology later.

In the late twentieth century, the rules have been changed. The rate-controlling step in the introduction of new technology is now not technological development, but social acceptance. From bitter experience, we have learned that not all technologies have desirable consequences. Society has increasingly decided that it will no longer accept new technology without question. In the last several decades we have watched the expansion of legal restrictions on the building of nuclear power stations, the combustion of gasoline and coal, the manufacture of chemical products, and the experimentation on gene manipulation. Technology assessment is a growing discipline, and has even been institutionalized since 1972 by the United States Congress. It is beginning to look as though examination of the legal and social consequences of new

technology, while not actually preceding that technology, will at least come earlier in its integration process. That is what this issue of the *Houston Journal of International Law* is all about.

*René D. Zentner*  
*Associate Dean*  
*University of Houston Law Center*