

Chapter 9

Introduction: Industrial Policy

“The USA has become the technology colony for the rest of the world. We supply the raw materials (technology), they add the value and sell to us and keep the profits! We have to change that system if we want to be competitive.”

Jerry Caulder
president, Mycogen, February 1991.

“In some respects, American competitiveness and Yankee ingenuity are stronger than ever. True, many of the nation’s institutions have come up for a reappraisal. But what institution shouldn’t come up for appraisal every 50 years or so?”

David Warsh
Columnist, *Boston Globe*, June 1991.

“The most potent influences of government in advanced nations are often slow and indirect.”

Michael E Porter
The Competitive Advantage of Nations

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Introduction: Industrial Policy

INTRODUCTION TO PART II

Although the concept of industrial policy has been around in the United States since the New Deal of the 1930s, it has more recently returned to the national agenda as concern has risen about U.S. competitive status in a number of industries. Industrial policy, in broad terms, is the deliberate attempt by a government to influence the level and composition of a nation's industrial output. These actions can include improving the industrial infrastructure, training workers, shifting resources to activities that will use them more efficiently, or maintaining resources in existing activities deemed important for national or economic security. Industrial policies can be implemented through domestic measures such as: allocation of Federal funds, subsidies, tax incentives, regulation of industry, and protection of intellectual property; or policies can be affected through trade actions, such as tariffs and quantitative import restrictions (1). Government can also play a central role in productivity through its economic policies—the manner in which it deploys the Nation's resources (labor and capital) and assists industry in adjustment to change (3).

The science and technology policy of the U.S. Government has traditionally been concerned with basic science, health, energy, agriculture, and defense. It has been described as big science deployed to meet big problems (4) and as mission-oriented rather than diffusion-oriented (2). The U.S. Government, in contrast to other governments, rarely takes deliberate actions to improve the use of technology by U.S. manufacturers. Other government actions intended to improve industrial performance work more indirectly—tax and trade policies and intellectual property protection are examples of indirect actions. Industrial policies in technology-intensive industries, such as biotechnology, rarely fit easily into existing frameworks.

Industrial policies in the United States are complex, fragmented, continually evolving, and rarely targeted comprehensively at a specific industry. There is no industrial policy pertaining to biotechnology per se, but rather a series of policies

formulated by various agencies to encourage growth, innovation, and capital formation in all high-technology industries. And, just as there is no biotechnology policy in the United States, biotechnology companies tend not to behave as an industry, but rather as agrichemical, diagnostic, or human therapeutic firms. Biotechnology companies have been built on a unique system of financing, but they confront the same regulatory, intellectual property, and trade policies faced by other U.S. firms. There may be a need for the Federal bureaucracy to fine-tune its policies as biotechnology moves through the system with its unique challenges, but to date (with the possible exception of the Federal research system), Federal agencies have not seen the need to revolutionize their practices for biotechnology.

Part I of this report addressed commercial activity in biotechnology, recognizing that biotechnology has become an important tool in several traditional U.S. industrial sectors.

Part II addresses the actions, both direct and indirect, taken by the United States and other governments that have influenced the commercialization and integration of biotechnology. Specifically, the importance of developing a science and technology infrastructure, regulatory practices, intellectual property protection, and trade issues. Tax law, which is an expression of industrial policy, is discussed in Part I, chapter 4 because of the importance of tax laws on financial practices in biotechnology.

CHAPTER 9 REFERENCES

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