Introduction

Public Utilities: Management Challenges for the 21st Century was developed from a base of knowledge gained as a member of citizens' committees regulating municipal and investor-owned utilities, from experience gained during employment in municipal industrial development, and from academic studies in organizational development. Those experiences brought to light a need for a survey text that would give new advisory committee members, directors, employees, and students an introductory overview of the industry and some of the current issues facing utility management. Like most industries, the public utility sector has devolved into a number of different application fields, including electric energy, natural gas, water, wastewater, telecommunications, and cable television. In some locations, the utility industry sector also includes public transportation, heating oil delivery, public warehousing, and other public services. For each of these fields, a number of texts are available that address specific issues in the specific utility. However, little current written material that covers common industry issues and challenges seemed available. This text was written to help fill this need. It includes issues faced individually and in concert by the electricity and natural gas energy sectors, and the water and wastewater sectors.

The management topics addressed in this text evolved from a series of organizational development team projects conducted for public and private, profit and nonprofit organizations. My interest in public utility management challenges began in Orange County, California, where I worked with investor-owned public utility managers and local government officials to promote economic development. That experience led me to research the history and development of the sector for a thesis on arguments between the supporters of public and investor-owned public utilities.

The time to continue my interest in public utilities became possible with early retirement from the management faculty of Pacific Lutheran University. After leaving PLU, I was invited to spend nearly three years as a visiting instructor in the graduate public administration program at the Evergreen State College of Olympia, Washington. A number of my students were employed in various aspects of local or state utility administration, including public utilities. Subsequently, I was privileged to spend periods over the course of three years as a visiting professor at the Stockholm

School of Economics in Riga, Latvia, where I was able to investigate the way a newly democratic society went about developing local government institutions. Several jointly written papers on portions of that research were presented at public management conferences and published in several journals.

SCOPE OF THE BOOK

Two major themes are reflected in this study of management in public utilities. The first theme is associated with the New Public Management (NPM) approach to the managing of public services and the challenges that this concept presents managers in publicly and investor-owned utilities. The fundamental management paradigm shift associated with NPM involves replacing an older bureaucratic approach, which once characterized most of the publicly and investor-owned public service industries, with a new, 'reformed' approach constructed from four main building blocks. These building blocks include: (1) limits to civil service autonomy, thereby making government more responsive to political influence; (2) introduction of performance-based management principles and practices from the private sector to improve management efficiency, effectiveness, and accountability; (3) greater transparency in operations, with increased participation by individuals, consumer groups and local communities in the design and delivery of all public services; and (4) widespread deregulation of investor-owned utilities. Each of these plays an important role in public utility management as we embark on this new century.

Unlike other industries, the public utility sector of the economy includes both public and investor-owned organizations, some of whom compete with one another. Despite the few victories of public power interests during the years of the Great Depression, more than three-quarters of the U.S. electrical power industry has remained in the private sector. The reverse was true in most of Europe, however, where national, regional, or local governments owned and operated all electric power grids, water systems, telephone, and even radio and television broadcasting. Beginning in the 1970s, however, the European utility industry began to be turned upside down. Privatization of many nationalized utilities and deregulation of the private sector began during the 1980s and 1990s in much of the world, including New Zealand, the United Kingdom, Norway, Sweden, Australia, Canada, Brazil, and Chile, among others. It has taken hold in the United States as well.

The privatization and deregulation movements were part of a larger NPM revolution in public administration. The key components of NPM are the sale of many nationalized industries, deregulation of much of the

once-tightly controlled economic structure of the countries involved, and a reduction in the size and scope of national government in general. It also had a large impact on the way that investor-owned utilities are managed, as the movement came to include the break-up of vertically integrated utilities and interjection of market competition into what had been a closely regulated industry. Although much of the public utility industry remains in the hands of private investors, the concepts that underlie the NPM public sector are relevant to all public service organizations, regardless of their ownership structure. Therefore, discussion of the changes in the fundamental management tasks that NPM has brought about in the public sector is applicable in investor-owned utilities.

The second theme is the concept of strategic management and all that it entails. Strategic management is the name given to the set of decisions and actions that result in the formulation and implementation of plans designed to achieve an organization's objectives. The process involves identifying long-term objectives for the organization, developing strategies for meeting those objectives, and selecting a mix of resources to use in a system of related tasks (tactics). The first two tasks are closely related: the first says what the company *does*; the second says what the organization *is*.

The strategic approach to management involves a number of related actions that lead managers through a process of identifying strategic opportunities, environmental threats, evaluation of organizational strengths and weaknesses, and developing functional objectives, tactics, and performance measurements and adjustments. The strategic management approach includes environmental analysis, policy analysis, opportunity analysis, mission and vision development, integrated planning programs, and other management activities.

STRUCTURE OF THE BOOK

The book is organized into three parts. Part I, *Fundamental Issues in Public Utility Management*, establishes the framework for subsequent discussions of management practices in public utility organizations. This section includes four chapters that frame the fundamental concepts included in the remainder of the text. Chapter 1, 'Public utilities: shaped by challenge and conflict,' introduces the reader to the scale and scope of the public utilities industry. The chapter includes a brief historical review of the growth of the industry in the United States and goes on to suggest a version of how and why the utilities industry developed its special character as a 'natural monopoly' committed to servicing the public interest. Chapter 2, 'Policy challenges facing public utilities,' presents an overview of the role of public

policy and traces some of the major utility policy changes that have taken place in the last 100 years. The chapter includes brief introductions to government policy pertaining to electric power, natural gas, and drinking water and wastewater treatment. Chapter 3, 'The public utility ethics challenge,' presents a brief introduction to what happens when organizations fail to produce and employees fail to follow standards of ethical behavior. It is followed by an overview of the several bases for ethical behavior among workers and organization leaders. Chapter 4, 'The public utility regulatory challenge,' begins with a rationale for utility regulation, and then discusses some of the major regulatory issues in the electric power, natural gas, and water and wastewater industries. The chapter and section concludes with an overview of some conflicting views on utility deregulation and/or reorganization.

Part II of the book, *Public Utility Management Challenges*, contains eight chapters which focus on some of the chief challenges extant today in the management of public utility functions and activities. The section begins with Chapter 5, 'Meeting challenges in public utility planning.' This chapter begins with a review of the fundamental concepts that underlie the strategic planning process. In addition to defining strategic planning, the discussion then leads the reader through a brief review of the steps involved in applying strategic planning and how this results in the application of strategic management. The chapter concludes with a discussion on how utilities apply federal government-recommended 'Integrated resource planning', a type of strategic planning with particular relevance for utilities. Chapter 6, 'Utility management and leadership challenges,' begins with a quick review of some management fundamentals before moving on to discuss issues particularly relevant to utility managers. Chapter 7, 'The challenges of utility pricing and rate setting,' covers one of the least understood concepts in utility management: setting prices at the wholesale and retail levels in a mixed regulated and unregulated industry. The material in this chapter is very basic; it introduces readers only to key concepts in rate-making. Readers wishing to delve deeper into this sub-section of economics are encouraged to seek further explanation in the many economics texts that deal specifically with the rate-making problem.

Chapter 8, 'The public utility marketing challenge,' might also appropriately be subtitled 'Demand analysis and management.' Today, most utilities are less interested in increasing demand for their products than they are in managing existing demand. In this instance, managing demand can mean slowing growth as well as inducing greater consumption. Slowing growth reduces the need to install additional production, to add new distribution capacity, or to locate new sources of supply. It also helps managers in their attempts to level out demand across more supply periods. An important

part of this process is the forced requirement to develop and adhere to expensive conservation, security, and environmental protection programs that have been mandated by the federal government.

Chapter 9, 'Information challenges for public utility managers,' deals with information technology, including real-time metering, and other important communications and management information system concepts. Chapter 10, 'Utility financing and accounting challenges,' discusses some of the major challenges facing utility managers today as they seek financing for the large investments needed to replace worn out and obsolete systems. Recent bankruptcies of portions of the industry after the crisis that resulted from the implosion of the California reorganization process have raised the cost of capital to more closely reflect the perceived risk associated with utility securities. Chapter 11, 'Challenges in managing utility human resources,' focuses on problems utilities face in replacing the many skilled and professional workers who are approaching retirement age; it then includes a discussion of the changing nature of the workforce that is resulting from greater cultural and ethnic diversity in the population of the United States. Chapter 12, the final chapter in this section, covers 'Challenges in public utility governance.' This chapter looks at both regulatory and corporate governance and the governance challenges resulting from reorganization of the industry.

Part III, *Public Utility System Challenges*, contains chapters on some of the key challenges facing three specific sectors of the industry, including a look at some of the emerging challenges facing all managers in both the investor-owned and publicly owned segments of this industry. Chapter 13 deals with 'Challenges in the electric energy industry.' Chapter 14 covers 'Challenges in the natural gas industry.' Chapter 15 focuses on 'Challenges in the water and wastewater industries.' Topics addressed in Chapter 16, 'Future challenges facing utility industry managers,' include globalization, security, the hiatus of deregulation, and such NPM issues as privatization and outsourcing, and managing the introduction of technology and innovation.

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