
Preface

Innovation is managed change. In this sense there is nothing new about it. Ideas about the beginnings of cultures may be based on divine revelation, traditional story, or scientific hypotheses. However based, all the myths postulate response to change as the beginning of things. The challenged organisms range from amoeba through wolf cubs to human beings, and those which prove best able to adapt to changed circumstances prevail.

At least since the early part of this century it has been recognized that capitalist societies depend on continuing innovation. More recently the collapse of the planned economies of Eastern Europe and the Soviet Union has demonstrated that no society can be immune to change and that the entrepreneurial approach seems the only one capable of increasing resources and opportunities at anything like the rate required to cope with world populations.

Innovation does not only refer to change based on advances in scientific and technological knowledge. Nor is it confined to changes in products and processes. Innovations in services are also important and often lucrative, and so are innovations in management. In fact many would argue that social innovations, within organizations and in the broader society, are the most important of all. These are the changes in attitudes, practices, and relationships that have to occur for any innovation, technical or otherwise, to be successful. It may be argued, for example, that recycling and the accompanying attitude changes will make more difference to United States society than any breakthrough in technology or advance in scientific knowledge.

Society's preoccupation with innovation, especially in industry and business, is reflected in the literature. In the past twenty years the steady stream of writings on innovation has turned into a raging torrent. There are books, journal articles, research reports, conference proceedings, papers from government and nongovernment commissions of inquiry, as well as courses of instruction at all levels and in all media, television features and audio productions. All urge innovation as a global good in the interest of economic productivity and many also see in it hope of ecological repair.

By no means do all the writings about innovation emanate from economists. Many of the writers are management consultants, and many others represent disciplines and interests as diverse as human communications, sociology of knowledge, engineering, science and technology policy, history of ideas, organization theory, technology transfer, and research management.

That there is a connection between innovation and information is obvious. News of new ways of doing things, of new forms of demand, and of new opportunities generally has to be encoded in messages of some kind and communicated. Empirical studies have repeatedly found that in more prosperous enterprises there is greater awareness of information and greater ability to manage it. There is also strong evidence that the quality, both of an organization's activities in the gathering and analysis of information and of the store of the information which it possesses, is reflected in the commercial success of its innovations. Information superiority has also been claimed to give nations as well as individual firms competitive advantage.

All organizations process information. They gather information from the environment, they generate much more in their own operations and they return some of that to the environment, whatever the products they make or the processes or services they perform. Information services may be parts of organizations, or independent service organizations, which aim to provide the information which would not necessarily reach individuals or organizations in the natural course of their operations, but which is nevertheless relevant to their objectives and may even be important for their survival.

There is an extensive literature on how to organize information services. These works are mainly about the organization and management of libraries, with a smaller literature on how to manage publishing enterprises and bookshops, and a yet smaller but growing segment on how to create, manage, and distribute electronic information services. A useful body of knowledge has also been gleaned from research in librarianship, information science, and communications about the information usage characteristics of various industrial, professional, demographic, and ethnic groups.

None of these works seeks explicitly to associate information services with the particular requirements of organizations which are focused on innovation. This book seeks to fill this gap in the literature. It is intended to provide a sound basis for the design and management of information services which will (1) give decision makers more help in the management of change; (2) make corporate decision makers more aware of information as an asset and of information management as a strategy for improved innova-

tion decisions; and (3) make information service providers potential sources of innovation for organizations of all kinds.

This book has been designed specifically to serve the needs of students of information services management, in schools of library and information science and in business information studies courses in schools of management. It is also intended for practitioners—librarians and other managers—who provide information services in business, industry, and government, either from within or as external consultants and contractors. This book also aims to assist those managers of computer and communications facilities whose opportunities for innovation will increasingly include the provision of information services. Digitization of information is erasing distinctions in the means, the places, and the occupations through which different types of information are handled. Already some university computer center managers find themselves networking CD-ROMs on campus, not necessarily unwillingly but perhaps unwittingly, becoming information service providers. This role will also become increasingly part of that played by the telephone companies in the United States and telecommunications companies everywhere.

This exploration of the connection between information services and innovation is built on the following plan. The introductory chapter examines the concept of innovation, and briefly indicates the importance of innovation to the nation and to the organization, whether it is a commercial firm, a professional association, or a public service institution. Preliminary examination of the innovation process reveals its dependency on information. Information and related concepts are defined, and indications are given of the pervasive nature of information-related activities in today's society.

Chapter 2 goes more deeply into the nature of innovation as a process. In so doing it categorizes more closely the kinds of information required for innovation, and places these requirements in the broader context of corporate planning. For an organization to be consistently successful at innovation, and thereby to survive in today's rapidly changing social and business environment, good information is only one of many requirements. The reasons why some organizations are better at innovation than others begin to emerge as helpful models of the process are analyzed.

It emerges from that analysis that one of the requirements of an appropriate corporate strategy is an information strategy. Chapter 3 looks generally at how information services, both in-house and external, fit into the information strategy of an innovative organization, and at times help shape it. The effects of digital information on both information specialists and information products and services are examined in some depth. The chapter also looks at evidence of the value of information services and how their value in an organization has been calculated.

Chapter 4 categorizes the information sources that are available, and gives many examples of each and how they have been applied in the innovation process. Emphasis is placed on the variety of sources available—personal, impersonal, formal and informal, individual and corporate—as well as on the circumstances and environments in which they appear to be most effective in the transmission and translation of information to useful knowledge.

In recent years, information technology has made possible a dramatic transformation in information services, which has yet to be fully appreciated or implemented. Chapter 5 reviews the nature of each of the relevant technologies and follows up on how the technologies can be integrated with each other and with human capability and work habits to produce useable and useful information systems.

Chapter 6 brings these threads together. The general reasons why all organizations need to innovate are summarized along with the particular reasons that apply to information services. A series of propositions is presented, derived from study of innovation as a phenomenon, of effects of technological change on information services, and of information user behavior. The propositions are then synthesized into a set of design and management principles for information services that contribute effectively to the innovation process. Strategies are also proposed by which information services may both exploit the sources of innovation available to them and act as sources of innovation for the organizations which they serve.

The authors hope that, like all successful innovations, their book will find wide acceptance and attract many imitators.

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