

PETER F.
DRUCKER

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—*Wall Street Journal*

Innovation
and
Entrepreneurship

Peter F. Drucker

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INNOVATION
AND ENTRE-
PRENEURSHIP

Practice and
Principles



HarperBusiness

A Division of HarperCollins Publishers

A hardcover edition of this book was published by Harper & Row, Publishers, Inc.

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First Perennial Library edition published 1986. First HarperBusiness edition published 1993.

Designed by: Sidney Feinberg

Library of Congress Cataloging-in-Publication Data

Drucker, Peter Ferdinand, 1909-

Innovation and entrepreneurship.

"Perennial Library."

Includes index.

1. Small business—United States. 2. New business enterprises—United States.
3. Entrepreneur.

I. Title.

HD2346.U5D78 1986 658.4'2 84-48593

ISBN-13: 978-0-06-085113-2 (pbk.)

ISBN-10: 0-06-085113-9 (pbk.)

07 08 09 10 RRD 40 39 38 37 36

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Preface

This book presents innovation and entrepreneurship as a practice and a discipline. It does not talk of the psychology and the character traits of entrepreneurs; it talks of their actions and behavior. It uses cases, but primarily to exemplify a point, a rule, or a warning, rather than as success stories. The work thus differs, in both intention and execution, from many of the books and articles on innovation and entrepreneurship that are being published today. It shares with them the belief in the importance of innovation and entrepreneurship. Indeed, it considers the emergence of a truly entrepreneurial economy in the United States during the last ten to fifteen years the most significant and hopeful event to have occurred in recent economic and social history. But whereas much of today's discussion treats entrepreneurship as something slightly mysterious, whether gift, talent, inspiration, or "flash of genius," this book represents innovation and entrepreneurship as purposeful tasks that can be organized—are in need of being organized—and as systematic work. It treats innovation and entrepreneurship, in fact, as part of the executive's job.

This is a practical book, but it is not a "how-to" book. Instead, it deals with the what, when, and why; with such tangibles as policies and decisions; opportunities and risks; structures and strategies; staffing, compensation, and rewards.

Innovation and entrepreneurship are discussed under three main headings: The Practice of Innovation; The Practice of Entrepreneurship; and Entrepreneurial Strategies. Each of these is an "aspect" of innovation and entrepreneurship rather than a stage.

Part I on the Practice of Innovation presents innovation alike as purposeful and as a discipline. It shows first where and how the entrepreneur searches for innovative opportunities. It then discusses the

Do's and Don't's of developing an innovative idea into a viable business or service.

Part II, *The Practice of Entrepreneurship*, focuses on the institution that is the carrier of innovation. It deals with entrepreneurial management in three areas: the existing business; the public-service institution; and the new venture. What are the policies and practices that enable an institution, whether business or public-service, to be a successful entrepreneur? How does one organize and staff for entrepreneurship? What are the obstacles, the impediments, the traps, the common mistakes? The section concludes with a discussion of individual entrepreneurs, their roles and their decisions.

Finally, Part III, *Entrepreneurial Strategies*, talks of bringing an innovation successfully to market. The test of an innovation, after all, lies not its novelty, its scientific content, or its cleverness. It lies in its success in the marketplace.

These three parts are flanked by an Introduction that relates innovation and entrepreneurship to the economy, and by a Conclusion that relates them to society.

Entrepreneurship is neither a science nor an art. It is a practice. It has a knowledge base, of course, which this book attempts to present in organized fashion. But as in all practices, medicine, for instance, or engineering, knowledge in entrepreneurship is a means to an end. Indeed, what constitutes knowledge in a practice is largely defined by the ends, that is, by the practice. Hence a book like this should be backed by long years of practice.

My work on innovation and entrepreneurship began thirty years ago, in the mid-fifties. For two years, then, a small group met under my leadership at the Graduate Business School of New York University every week for a long evening's seminar on Innovation and Entrepreneurship. The group included people who were just launching their own new ventures, most of them successfully. It included mid-career executives from a wide variety of established, mostly large organizations: two big hospitals; IBM and General Electric; one or two major banks; a brokerage house; magazine and book publishers; pharmaceuticals; a worldwide charitable organization; the Catholic Archdiocese of New York and the Presbyterian Church; and so on.

The concepts and ideas developed in this seminar were tested by its members week by week during those two years in their own work and

their own institutions. Since then they have been tested, validated, refined, and revised in more than twenty years of my own consulting work. Again, a wide variety of institutions has been involved. Some were businesses, including high-tech ones such as pharmaceuticals and computer companies; "no-tech" ones such as casualty insurance companies; "world-class" banks, both American and European; one-man startup ventures; regional wholesalers of building products; and Japanese multinationals. But a host of "nonbusinesses" also were included: several major labor unions; major community organizations such as the Girl Scouts of the U.S.A. or C.A.R.E., the international relief and development cooperative; quite a few hospitals; universities and research labs; and religious organizations from a diversity of denominations.

Because this book distills years of observation, study, and practice, I was able to use actual "mini-cases," examples and illustrations both of the right and the wrong policies and practices. Wherever the name of an institution is mentioned in the text, it has either never been a client of mine (e.g., IBM) and the story is in the public domain, or the institution itself has disclosed the story. Otherwise organizations with whom I have worked remain anonymous, as has been my practice in all my management books. But the cases themselves report actual events and deal with actual enterprises.

Only in the last few years have writers on management begun to pay much attention to innovation and entrepreneurship. I have been discussing aspects of both in all my management books for decades. Yet this is the first work that attempts to present the subject in its entirety and in systematic form. This is surely a first book on a major topic rather than the last word—but I do hope it will be accepted as a seminal work.

Claremont, California
Christmas 1984

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Introduction:

The Entrepreneurial Economy

I

Since the mid-seventies, such slogans as “the no-growth economy,” the “deindustrialization of America,” and a long-term “Kondratieff stagnation of the economy” have become popular and are invoked as if axioms. Yet the facts and figures belie every one of these slogans. What is happening in the United States is something quite different: a profound shift from a “managerial” to an “entrepreneurial” economy.

In the two decades 1965 to 1985, the number of Americans over sixteen (thereby counted as being in the work force under the conventions of American statistics) grew by two-fifths, from 129 to 180 million. But the number of Americans in paid jobs grew in the same period by one-half, from 71 to 106 million. The labor force growth was fastest in the second decade of that period, the decade from 1974 to 1984, when total jobs in the American economy grew by a full 24 million.

In no other peacetime period has the United States created as many new jobs, whether measured in percentages or in absolute numbers. And yet the ten years that began with the “oil shock” in the late fall of 1973 were years of extreme turbulence, of “energy crises,” of the near-collapse of the “smokestack” industries, and of two sizable recessions.

The American development is unique. Nothing like it has happened yet in any other country. Western Europe during the period 1970 to 1984 actually *lost* jobs, 3 to 4 million of them. In 1970, western Europe still had 20 million more jobs than the United States; in 1984, it had almost 10 million less. Even Japan did far less well in job creation than the United States. During the twelve years from 1970 through 1982,

jobs in Japan grew by a mere 10 percent, that is, at less than half the U.S. rate.

But America's performance in creating jobs during the seventies and early eighties also ran counter to what every expert had predicted twenty-five years ago. Then most labor force analysts expected the economy, even at its most rapid growth, to be unable to provide jobs for all the boys of the "baby boom" who were going to reach working age in the seventies and early eighties—the first large cohorts of "baby boom" babies having been born in 1949 and 1950. Actually, the American economy had to absorb twice that number. For—something nobody even dreamed of in 1970—married women began to rush into the labor force in the mid-seventies. The result is that today, in the mid-eighties, every other married woman with young children holds a paid job, whereas only one out of every five did so in 1970. And the American economy found jobs for these, too, in many cases far better jobs than women had ever held before.

And yet "everyone knows" that the seventies and early eighties were periods of "no growth," of stagnation and decline, of a "deindustrializing America," because everyone still focuses on what were the growth areas in the twenty-five years after World War II, the years that came to an end around 1970.

In those earlier years, America's economic dynamics centered in institutions that were already big and were getting bigger: the Fortune 500, that is, the country's largest businesses; governments, whether federal, state, or local; the large and super-large universities; the large consolidated high school with its six thousand or more students; and the large and growing hospital. These institutions created practically all the new jobs provided in the American economy in the quarter century after World War II. And in every recession during this period, job loss and unemployment occurred predominantly in small institutions and, of course, mainly in small businesses.

But since the late 1960s, job creation and job growth in the United States have shifted to a new sector. The old job creators have actually *lost* jobs in these last twenty years. Permanent jobs (not counting recession unemployment) in the Fortune 500 have been shrinking steadily year by year since around 1970, at first slowly, but since 1977 or 1978 at a pretty fast clip. By 1984, the Fortune 500 had lost permanently at least 4 to 6 million jobs. And governments in America, too, now employ fewer people than they did ten or fifteen years ago, if only because the

number of schoolteachers has been falling as school enrollment dropped in the wake of the "baby bust" of the early sixties. Universities grew until 1980; since then, employment there has been declining. And in the early eighties, even hospital employment stopped increasing. In other words, we have not in fact created 35 million new jobs; we have created 40 million or more, since we had to offset a permanent job shrinkage of at least 5 million jobs in the traditional employing institutions. And all these new jobs must have been created by small and medium-sized institutions, most of them small and medium-sized businesses, and a great many of them, if not the majority, *new* businesses that did not even exist twenty years ago. According to *The Economist*, 600,000 new businesses are being started in the United States every year now—about seven times as many as were started in each of the boom years of the fifties and sixties.

II

"Ah," everybody will say immediately, "high tech." But things are not quite that simple. Of the 40 million-plus jobs created since 1965 in the economy, high technology did not contribute more than 5 or 6 million. High tech thus contributed no more than "smokestack" lost. All the additional jobs in the economy were generated elsewhere. And only one or two out of every hundred new businesses—a total of ten thousand a year—are remotely "high-tech," even in the loosest sense of the term.

We are indeed in the early stages of a major technological transformation, one that is far more sweeping than the most ecstatic of the "futurologists" yet realize, greater even than *Megatrends* or *Future Shock*. Three hundred years of technology came to an end after World War II. During those three centuries the model for technology was a mechanical one: the events that go on inside a star such as the sun. This period began when an otherwise almost unknown French physicist, Denis Papin,* envisaged the steam engine around 1680. They ended when we replicated in the nuclear explosion the events inside a star. For these three centuries advance in technology meant—as it does in mechanical processes—more speed, higher temperatures, higher pressures. Since the end of World War II, however, the model of technology

*The dates of all persons mentioned in the text will be found in the Index.

has become the biological process, the events inside an organism. And in an organism, processes are not organized around energy in the physicist's meaning of the term. They are organized around information.

There is no doubt that high tech, whether in the form of computers or telecommunication, robots on the factory floor or office automation, biogenetics or bioengineering, is of immeasurable qualitative importance. High tech provides the excitement and the headlines. It creates the vision for entrepreneurship and innovation in the community, and the receptivity for them. The willingness of young, highly trained people to go to work for small and unknown employers rather than for the giant bank or the worldwide electrical equipment maker is surely rooted in the mystique of "high tech"—even though the overwhelming majority of these young people work for employers whose technology is prosaic and mundane. High tech also probably stimulated the astonishing transformation of the American capital market from near-absence of venture capital as recently as the mid-sixties to near-surplus in the mid-eighties. High tech is thus what the logicians used to call the *ratio cognoscendi*, the reason why we perceive and understand a phenomenon rather than the explanation of its emergence and the cause of its existence.

Quantitatively, as has already been said, high tech is quite small still, accounting for not much more than one-eighth of the new jobs. Nor will it become much more important in terms of new jobs within the near future. Between now and the year 2000, no more than one-sixth of the jobs we can expect to create in the American economy will be high-tech jobs in all likelihood. In fact, if high tech were, as most people think, the entrepreneurial sector of the U.S. economy, then we would indeed face a "no-growth" period and a period of long-term stagnation in the trough of a "Kondratieff wave."

The Russian economist Nikolai Kondratieff was executed on Stalin's orders in the mid-1930s because his econometric model predicted, accurately as it turned out, that collectivization of Russian agriculture would lead to a sharp decline in farm production. The "fifty-year Kondratieff cycle" was based on the inherent dynamics of technology. Every fifty years, so Kondratieff asserted, a long technological wave crests. For the last twenty years of this cycle, the growth industries of the last technological advance seem to be doing exceptionally well. But what look like record profits are actually repayments of capital which is no longer needed in industries that have ceased to grow. This situa-

tion never lasts longer than twenty years, then there is a sudden crisis, usually signaled by some sort of panic. There follow twenty years of stagnation, during which the new, emerging technologies cannot generate enough jobs to make the economy itself grow again—and no one, least of all government, can do much about this.*

The industries that fueled the long economic expansion after World War II—automobiles, steel, rubber, electrical apparatus, consumer electronics, telephone, but also petroleum†—perfectly fit the Kondratieff cycle. Technologically, all of them go back to the fourth quarter of the nineteenth century or, at the very latest, to before World War I. In none of them has there been a significant breakthrough since the 1920s, whether in technology or in business concepts. When the economic growth began after World War II, they were all thoroughly mature industries. They could expand and create jobs with relatively little new capital investment, which explains why they could pay skyrocketing wages and workers' benefits and simultaneously show record profits. Yet, as Kondratieff had predicted, these signs of robust health were as deceptive as the flush on a consumptive's cheek. The industries were corroding from within. They did not become stagnant or decline slowly. Rather, they collapsed as soon as the "oil shocks" of 1973 and 1979 dealt them the first blows. Within a few years they went from record profits to near-bankruptcy. As soon became abundantly clear, they will not be able to return to their earlier employment levels for a long time, if ever.

The high-tech industries, too, fit Kondratieff's theory. As Kondratieff had predicted, they have so far not been able to generate more jobs than the old industries have been losing. All projections indicate that they will not do much more for long years to come, at least for the rest of the century. Despite the explosive growth of computers, for instance, data processing and information handling in all their phases (design and engineering of both hardware and software, production, sales and ser-

*Kondratieff's long-wave cycle was popularized in the West by the Austro-American economist Joseph Schumpeter, in his monumental book *Business Cycles* (1939). Kondratieff's best known, most serious, and most important disciple today—and also the most serious and most knowledgeable of the prophets of "long-term stagnation"—is the MIT scientist Jay Forrester.

†Which, contrary to common belief, was the first one to start declining. In fact, petroleum ceased to be a growth industry around 1950. Since then the incremental unit of petroleum needed for an additional unit of output, whether in manufacturing, in transportation, or in heating and air conditioning, has been falling—slowly at first but rapidly since 1973.

vice) are not expected to add as many jobs to the American economy in the late 1980s and early 1990s as the steel and automotive industries are almost certain to lose.

But the Kondratieff theory fails totally to account for the 40 million jobs which the American economy actually did create. Western Europe, to be sure, has so far been following the Kondratieff script. But not the United States, and perhaps not Japan either. Something in the United States offsets the Kondratieff "long wave of technology." Something has already happened that is incompatible with the theory of long-term stagnation.

Nor does it appear at all likely that we have simply postponed the Kondratieff cycle. For in the next twenty years the need to create new jobs in the U.S. economy will be a great deal lower than it has been in the last twenty years, so that economic growth will depend far less on job creation. The number of new entrants into the American work force will be up to one-third smaller for the rest of the century—and indeed through the year 2010—than it was in the years when the children of the "baby boom" reached adulthood, that is, 1965 until 1980 or so. Since the "baby bust" of 1960–61, the birth cohorts have been 30 percent lower than they were during the "baby boom" years. And with the labor force participation of women under fifty already equal to that of men, additions to the number of women available for paid jobs will from now on be limited to natural growth, which means that they will also be down by about 30 percent.

For the future of the traditional "smokestack" industries, the Kondratieff theory must be accepted as a serious hypothesis, if not indeed as the most plausible of the available explanations. And as far as the inability of new high-tech industries to offset the stagnation of yesterday's growth industries is concerned, Kondratieff again deserves to be taken seriously. For all their tremendous qualitative importance as vision makers and pacesetters, quantitatively the high-tech industries represent tomorrow rather than today, especially as creators of jobs. They are the makers of the future rather than the makers of the present.

But as a theory of the American economy that can explain its behavior and predict its direction, Kondratieff can be considered disproven and discredited. The 40 million new jobs created in the U.S. economy during a "Kondratieff long-term stagnation" cannot be explained in Kondratieff's terms.