

“experts should be on tap not on top”? If they really understand the job of government, because power corrupts; if they are expert in limited fields — which is normally the case — because their judgments outside those fields are often very bad. Able political leaders and administrators will develop the capacity to make good use of the advice of experts, and policy research institutes are in a position to assemble groups of experts in the relevant specialities to analyse policy options and generate policy proposals. Some at least of these institutes ought to be able to bridge the gap between the language and experience of the academics, the politicians and the citizens, and thereby reduce the danger that worries Smith, that the experts’ use of “mystifying jargon and an array of bewildering models and specialised tools” create barriers between the citizenry and their elected leaders.

One of the many strengths of Smith’s book is the provision of an historical context. One telling example is Francis Bacon “who like many who now toil in Washington’s think tanks knew the enduring frustrations of the man of superior intellect who must court the high and mighty to win office” and who wrote after his fall from office that the best advisers are dead, for books “speak plain when counsellors blanch”. As Smith puts it, policy experts and advisers who aspire to influence “must speak a useful truth” and their claims to speak the truth must always be viewed in the light of their relationships with power. Academics no less than members of think tanks when advising ministers or shadow ministers are subject to the temptation to bend the truth to fit political programs and personal ambitions, and one of the useful roles of think tanks not discussed by Smith is to leave more academics with an interest in policy studies to concentrate on the search for truth, to treat political influence as incidental or accidental, and to identify the many failures of policies based on ‘expert advice’. If public policy has become the preserve of the expert elite, as Smith maintains but does not establish, making the idea of a public debate a somewhat anachronistic fiction, the case for more detached discussion of issues in higher education institutes is very strong, as also the case for more continuing education programs for the citizenry.

Sir Bruce Williams
London

Scale and Scope: The Dynamics of Industrial Capitalism by *Alfred D. Chandler Jr.* (Harvard/Belknap, Cambridge Mass., 1990), pp. xvi + 860, \$US35.00, ISBN 0-674-78994-6.

The Pulitzer Prize-winning author of the classic economic and business history book *The Visible Hand: The Managerial Revolution in American Business* has produced another monumental volume. Ten years in the researching and writing, this book continues Chandler’s explorations into the rise of salaried managers as the driving force of modern capitalism. At the heart of his model of industrial growth and competition in the United States, Britain and Germany from the 1880s to the 1940s, lies the capacity of managers to respond to numerous sources of changing technology and infrastructure developments. Chandler shows convincingly — if at times a little long-windedly — that there was a systematic

pattern of responses which separated successful firms from those which did less well. The key to success lay in adaptability and the development of the kind of management organisation within the firm which was capable of responding to the new corporate environment.

This book is first and foremost a business history book written in the finest standards of academic scholarship. It is meticulously researched, and Chandler's hypotheses are carefully spelled out and evaluated. But don't tune out here — this book, despite its length, and its massive collection of facts (the research considers the 200 largest manufacturing firms in each of the three countries at three different points of time in the overall period being considered), is compelling reading for any manager, administrator, academic, economist, accountant, lawyer, scientist or engineer who wants to understand the evolutionary process of managerial capitalism. Clearly evident throughout the book are many lessons for the high-flying Australian corporate entrepreneurs whose excesses in the eighties provided text-book copy of how not to expand.

With hindsight, Chandler's rationalisation of what was necessary for firms to grow and conquer, should have been self-evident to the managers of the time, even in the days of no formal training in management and when economics was largely an ivory-tower pursuit. But we all know that markets are not perfect, that information flows are far from ideal, that there are numerous lags in reacting to new stimuli (due to managerial conservatism, risk aversion and also plain short-sightedness), and that a whole host of impediments (regulatory, financial and social, to name but a few) exist to retard the speedy adoption of new ideas. It is interesting to note that the most successful competitors of the period being considered adopted new techniques and behaved generally in a manner which was not formally modelled by economists until the 1960s and 1970s!

It would be impossible for a reader of this book not to remember Chandler's main themes, as they are repeated time and time again. First-movers, that is, the firms which grabbed the newly-emerging opportunities quickly and ran with them, at the same time developing more appropriate managerial organisations to handle the changed trading and technological environment — became the stayers, acquiring significant competitive advantages which led to the creation of entrenched positions of leadership in their industries, taking market share from their rivals, and then diversifying into new product markets, as well as expanding into overseas markets. While challengers frequently appeared, they rarely were able to overcome the first mover superiority enjoyed by those firms which had moved quickest in markets where scale or scope economies had provided significant cost advantages. Chandler stresses repeatedly that the core dynamic in the development of modern industrial capitalism was the set of organisational capabilities (the collective human skills and physical facilities) found in the firm as a unified whole.

Chandler's thesis is that only if these skills and facilities were co-ordinated and integrated carefully could the firm take advantage of the available economies of scale and scope in order to grow on both the national and international stages. He stresses the important role played by middle-level management in this process. Thus, it was organisational capabilities which provided the central impetus to the growth of the firm, not only within its traditional markets, but also into new product and geographic markets both at home and abroad.

The recipe for success, according to Chandler, was for firms to take advantage of the cost savings available through scale and scope economies. To achieve these savings, however, a series of investments had to be made — in larger production

facilities incorporating the new technologies; in both national as well as international product-specific purchasing, distribution and marketing networks; and in an enhanced as well as expanded management organisation (organised on functional lines) which could efficiently control these growing industrial firms. Chandler argues forcefully that a critical source of opportunities to take advantage of scale and scope economies was the emergence in the 1870s of a revolution in transport and communications — the railroad, the cable and the telegraph in particular.

Of course, each firm did things differently (and Chandler pays particular attention to these differences), although there was a certain homogeneity of response within each of the three countries studied. Chandler is an unashamed supporter of the American managerial dynamic, and of the American willingness to bring in outside managers to build up the management team; he is equally strong in his criticism of British firms and their managers who were much slower to embrace the managerial revolution and make the necessary investments in production facilities, with the consequence that these firms rapidly lost their leading positions, in the process leading to the decline of Britain as a leading industrial nation. While 'personal capitalism' may have much to recommend it as far as individual entrepreneurs are concerned, it creates negative externalities from the point of view of a whole nation. The German penchant for "co-operative managerial capitalism" (in which German entrepreneurs who did develop organisational capabilities reinforced their domestic position by the continuation of the German tradition of close co-operation between firms) clearly was a more effective vehicle for corporate success than was the rugged spirit of conservative individualism which was characteristic of British management.

Though there are many of them, this book is not just a series of broad generalisations and descriptions of the ways in which markets developed from the 1880s to the 1940s. There is provided a wealth of detailed material on individual firms and particular markets in each of the three countries studied. While the reader should not expect to find detailed corporate histories in this book, considerable time is devoted to some of the outstandingly growth-oriented and change-embracing firms like Du Pont, General Electric, Siemens, AEG, and Imperial Chemical Industries (one of the few British firms to win Chandler's approval), while it also chronicles in some detail the decline of once-great British firms. For those desperate to find references to their own organisation, or for those interested in Chandler's evaluation of a large number of firms which are by now household names, the book provides a very detailed index, as well as a prodigious volume of tables and copious footnote citations.

While his primary focus does not extend beyond World War II, Chandler does provide a brief look at later developments in industrial capitalism, and concludes that the events of the late 1960s and the 1970s have marked the end of one chapter in the history of managerial capitalism and the beginning of another. Growth based on the defensive strategies of horizontal and vertical integration became less common, to be replaced by product diversification and expansion into overseas markets. As corporate activities took off in these directions, management structures changed, with a multidivisional structure being widely adopted to service the needs of the fast-expanding, diversified firms. Increasing growth and competition in the European Common Market, together with the recognition by British and other European firms that managers had to be recruited, led to these firms finally gaining the strong base which provided

the competitive edge necessary to at last make a move on American markets. But even more important than this was the newly vibrant Japanese industrial power. Japanese firms invested and grew on a scale similar to that undertaken by the American first-movers several decades earlier.

All of this created unprecedented challenges for managers. Competition was fierce; technological change raced ahead such that managers faced many more unknowns and risks than ever before. Management responded in at least six ways which had no historical precedent. Among the most important of these were the buying and selling of whole operating units (otherwise known as divestiture); the buying and selling of whole firms as a distinct business in its own right; the increasingly influential role played by portfolio managers in determining outcomes in capital markets around the world; and the evolution of the so-called market for corporate control, in which poorly-performing managers are disciplined by having their firm taken over by those who promise shareholders (including portfolio managers whose main goal is to maximise the value of their holdings) a better deal. With so many new developments to chronicle, one quakes at the thought of the length of the next volume in this series!

I find it somewhat unusual to conclude that a book is both encyclopaedic and stimulating. For most books, these two adjectives are generally mutually exclusive. This is not an easy book to read from cover to cover in only a few sessions, because of its sheer length and detail. But it is worth the effort. Alternatively, with a maximum investment in time taken to read the essential analytical framework contained in the first two relatively short chapters, the book becomes a browser's delight, something that can be returned to time and time again for the insights it provides into the history and growth of some of the world's leading industrial firms, and into the critical role played by the managerial team in creating long-standing competitive advantages for first-moving firms.

David K. Round
University of Adelaide

Science and Technology in History: An Approach to Industrial Development
by Ian Inkster

(Macmillan Education, Basingstoke, England, 1991), pp. xvi + 391, \$29.95, ISBN 0-333-42858-7.

Ian Inkster clearly likes a challenge. He sets out to address the changing relationships between science, technology and economic development from the 18th century to the present time. As he says in the Preface, "quite simply, the task of this book is to uncover the dynamics of industrial change" (p.xiv).

In order to deal with such an 'embracing subject', Inkster seeks to do more than simply construct an historically deep picture covering key moments from the history of industrialisation in Europe (e.g., 18th century Britain) to the emergence of the NICs in the 1970s and key elements of Japanese technology policy in the 1980s. He also presents us with a broad geographical canvas which addresses developments in a number of countries across four continents.