

## Chandler, *The Visible Hand*

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numbing experience of modern mass-production, has not the consumer society become something of a parody on the original concept? The problem is, as Gilbert remarks, that we still believe that "ethics and culture flow from work." And if, as Daniel Bell argues in *The Cultural Contradictions of Capitalism*, the work ethic has been seriously eroded in the United States and other advanced industrial societies, Deputy Prime Minister Teng Hsiao-ping will ensure that it still has a future.

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Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution In American Business* (Cambridge, Mass.: Harvard University Press, 1977)

IN A HOST of essays and monographs published over the past generation, Alfred D. Chandler Jr. has emerged as the preeminent historian of the incorporation of America. *The Visible Hand*, winner of both the Bancroft and Pulitzer Prizes in 1978, could be likened to a brilliant retrospective exhibition of his scattered *oeuvre*. Here between two covers, as with a great artist in a gallery, we look back through the different periods and preoccupations of his work and see, perhaps for the first time, the underlying unity, the sweeping vision, the total mastery of technique. Chapters and footnotes mark his evolution from the debut article ("Patterns of Railroad Finance," 1954), to the promising monograph which signalled the end of his apprenticeship in the entrepreneurial school (*Henry Varnum Poor*, 1956), through his thoroughly original speculations on organizational change ("The Beginnings of Big Business in American Industry," 1959), to his masterpiece, a fully developed theory of structural transformation within four major corporations (*Strategy and Structure: Chapters in the History of the Industrial Enterprise*, 1962). Armed with insight into the inner

organizational dynamics of the early twentieth century multi-unit enterprise, he next explored the roots of managerial technique in the railroad (*The Railroads: The Nation's First Big Business*, 1965; "Railroads: Pioneers in Modern Corporate Management," 1965) and manufacturing sectors (*Pierre S. DuPont and the Making of the Modern Corporation*, 1971, with Stephen Salisbury). Now, drawing upon a lifetime of research and the extraordinarily rich literature in American business history, Chandler extends his explanatory theory and empirical analysis to embrace the entire industrial system.

Until the 1840s, Chandler argues, a Venetian merchant would have been quite at home within most American businesses. The institutional landscape of production and distribution — accounting practices, credit instruments, mercantile functions, commodity exchanges, kinship networks, commercial law and management routine — had not altered appreciably for centuries. American economic growth had introduced greater specialization within the marketplace, but the volume of business transacted still had not overwhelmed inherited institutions. Technology, after all, imposed upper limits upon commercial activity. Nature and the seasons still governed the economy and traditional practices ruled trade. Traffic depended upon the irregular, low energy provided by wind, water, man and beast. The single unit family firm remained the predominant business form. Above all, markets regulated production. Markets, over which buyers and sellers had little control, established prices, allocated resources, and marshalled goods through many hands along the intricate production and distribution continuum to final consumption.

Virtually overnight all of this changed. By the beginning of World War I massive vertically integrated, highly diversified multi-division corporations operating in oligopolized national — even global — markets dominated the most dynamic sectors of the American economy. In this sud-

den transformation old institutions were obliterated by new techniques of mass production and distribution, by the rise of the giant corporations which embodied these processes, and by an entirely new class of professional managers who controlled both. The significance of this institutional revolution, Chandler contends, is:

... that modern business enterprise took the place of market mechanisms in co-ordinating the activities of the economy and allocating its resources. In many sectors of the economy the visible hand of management replaced what Adam Smith referred to as the invisible hand of market forces. The market remained the generator of demand for goods and services, but modern business enterprise took over the functions of coordinating flows of goods through existing processes of production and distribution, and of allocating funds and personnel for future production and distribution. As modern business enterprise acquired functions hitherto carried out by the market, it became the most powerful institution in the American economy and its managers the most influential group of economic decision makers. The rise of modern business enterprise in the United States, therefore, brought with it managerial capitalism.

How does one account for the sudden appearance of the integrated modern corporation in late nineteenth-century America, its differential rate of diffusion through the various sectors of the economy, and for the organizational changes which occurred within corporations? Chandler answers these questions with eight general propositions at the outset and 500 pages of rich illustration, variation, and subtle analysis of cases. As Chandler explains it, when administration permitted greater productivity than market mechanisms, the modern integrated corporation replaced traditional enterprises. Technology determined which industries could achieve these economies through the internalization of functions. Corporate engrossment of the market could not have occurred without the creation of a managerial hierarchy, and once such bureaucracies came into existence they became permanent sources of power. The complex pro-

cesses demanded that the salaried managers become more technical and professional and as the companies grew management necessarily became separated from ownership. Career managers, as a rule, concentrated upon growth and long term stability rather than short-run profit maximization. Finally, the modern corporate form spread to dominate the entire economy: "As technology became more sophisticated and as markets expanded, administrative co-ordination replaced market coordination in an increasingly larger portion of the economy." Reduced to its essentials, Chandler's is a materialist, technologically determinist explanation of institutional change.

What set this institutional revolution in motion at mid-century? As Chandler explains it, a new source of energy (coal) and a new technology (the railroad and the telegraph) combined to integrate a previously fragmented market, speed up communications within it, aggregate consumer demand, and create new large batch, continuous-flow production processes. The vastly increased volumes of business thus generated required much closer coordination up and down the production chain. Thus mass production depended not only upon technological change, but also upon managerial innovation. In Alfred D. Chandler Jr. the organization chart has found its historian.

As in so many other matters, the railroad spawned the key administrative changes. Complex, capital intensive railroads were the first enterprises to confront the limitations of traditional business management. Thus, at the same time as the railroads were preparing the capital markets and concentrating demand for the new industrialism, railroad managers were pioneering the techniques of multi-divisional management upon which vertically and horizontally integrated corporations would also depend. Managers in the emerging mass production and mass marketing sectors quickly adopted and modified these innovations to meet their

requirements. Through a series of carefully drawn case studies, Chandler charts the diffusion of administrative technique through the flour, rubber, retailing and steel industries, highlighting the structural variations en route. The last chapters, in which mass production and distribution are fused in the modern corporation, take us from "The Origins of Big Business" to *Strategy and Structure*. Surveys of the tobacco, packing, sewing machine and farm implement industries provide a prelude to the process of structural maturation which takes place to cope with the strategy of product diversification within the oil, electrical, rubber and chemical conglomerates early in the twentieth century. By the end of World War I all of the essential elements of the modern corporation were in place. Since then everything has been imitation or minor variation on a theme.

Both the intermediate level theory just summarized and the astonishing breadth of its empirical base make *The Visible Hand* a great book, a point of departure for all future scholarship on both the left and the right. Chandler buttresses every generalization with evidence culled from case studies of literally hundreds of industries. His footnotes provide a veritable bibliography of American business history. No one possesses Chandler's command of the literature; no one, for that matter, has contributed so much to it. Not only does this book contain a strikingly original interpretation of the rise of the modern corporation, but it also synthesizes two generations of energetic scholarship on the history of American business.

Of particular interest is Chandler's subtle grasp of what used to be called the production function of each industrial sector. He shows, for example, how different capital requirements lead to different kinds of corporations. Industries requiring infusions of outside capital fell briefly into the orbit of finance capital, the railroads and the big mergers such as steel serving as cases in point. But this was not the usual pattern. More frequently the mass produc-

tion and mass distribution industries generated their own capital internally. These sectors maintained a relative independence from the financial sector. Here entrepreneurial and family capitalism persisted, to give way in due course to managerial capitalism — the dominant form of the modern corporation — in which ownership and control were separated. In what sectors does the multi-unit corporation not appear? Where labour intensity, mechanical processes and nature continued to characterize a sector (as in agriculture, mining, building trades, cloth, leather, sewing and woodworking) the older single unit, small scale, family firm continued to flourish. Why was the railroad system overbuilt? Under what circumstances did mergers succeed? Why did the process of internalizing market functions end most frequently in oligopoly rather than monopoly? The list of such questions and ingenious explanations derived from the economic and technological determinants of production could be extended indefinitely.

But in some respects *The Visible Hand* is a narrowly focused book. Chandler purposefully avoids discussing the political and social impact of the emerging corporation. Subscribers to *Labour/Le Travailleur*, for example, will be disappointed that he excludes labour from his study. "I have not tried to describe the work done by the labor force in these units or the organization and aspirations of the workers," he declares at the beginning. Fair enough; this is a history of management and its role in the transformation of the firm. More troubling for labour historians is Chandler's conclusion (493-4) that labour made little impact upon the evolution of the corporation or the location of power within it. Industrial relations, we are told, remained a middle management concern until the late 1930s. Nonetheless, historians of the working classes will find this book extremely useful in sorting out the institutional context of work and labour organization. Chandler's treatment of

Taylorism, particularly his discussion of the attack it represented upon the independence of foremen and the modifications in practice worked out in the dialectic of the shop floor, will be of particular interest.

Of course the giant corporation has exerted its power over the American imagination since its first appearance in the late nineteenth century. Alfred D. Chandler Jr. is only the latest in a distinguished line of scholars to try his hand at explaining the origins and dynamics of this peculiarly American institution. In taking the floor in a crowded and somewhat noisy debate he firmly, but politely (the D, after all, stands for DuPont) rejects all previous explanations. Readers will be surprised, perhaps, by Chandler's dispassionate tone in dealing with a subject frequently characterized by intemperate language. Authority speaks calmly. He recounts the emergence of the corporation as a biologist might describe the evolution of a species of mammals. There is no need for indignation or hand wringing in observing a natural process, Chandler seems to be saying. The study, like the laboratory is no place for moralizing, although, from time to time — like the biologist — he does stand in awe of the intricacy, majesty and genius of the unfolding evolutionary process.

Nor is Chandler much interested as a scholar in the future implications of such concentrated power in the economy. He extrapolates no alarmist tendencies toward industrial feudalism. He fixes his view firmly upon the past and upon the narrow subject of corporate organization. Indeed, Chandler makes a virtue of his remarkable immunity to the social and political concerns which lay behind so much writing about the American corporation. Excessive moralizing has diverted attention from structures to individuals, he claims. Emphasis upon entrepreneurship as the driving force behind the firm led on the one hand to unwarranted praise of industrial statesmen and on the other to an equally pointless denunciation of the crimes of the robber barons. An irrational preoccupation

with the glitter of finance, he adds, has also misled historians into exaggerating the role of capital — especially finance capital — in the growth of the corporation. "Financial capitalism in the United States," he asserts, "was a narrowly located, short-lived phenomenon." He directs his sharpest rebuke not towards scholarship on the left, which after all has contributed a great deal to the analysis of the corporation, but rather towards economists who steadfastly ignore the most powerful institution operating within the modern American economy. Understanding of the economy will remain inadequate, he insists, until both the theory of the firm and theories of economic growth recognize the importance of the greatly enhanced productivity realized by the internalization of market functions by the modern corporation, by the replacement of the invisible hand of the market by the visible hand of management.

In his own discreet way, Alfred D. Chandler Jr. challenges his leading rivals, especially the various political capitalist schools of the New Left. Implicit in the text and explicit in the footnotes (where he conducts a vigorous, well-mannered debate with Gabriel Kolko) readers will encounter a refutation of the government's integral stabilizing role through regulatory intervention or fiscal policy. "The rise of modern business enterprise in American industry between the 1880's and World War I," he flatly declares, "was little affected by public policy, capital markets or entrepreneurial talents because it was part of a more fundamental economic development." Having cast aside orthodox, entrepreneurial, Old and New Left interpretations, he then restates his own theory of market and technological determinism. (Such irony, an economic determinist analysis of the shrinking of the market from a Harvard Business School free-marketeer.) However, prudence suggests a suspended judgment on these broader issues until we have in hand equally authoritative surveys of the social

and political linkages of the corporate sector, matters which were declared to be outside the limits of this book.

Chandler accepts Berle and Means' analysis of the separation of ownership from control; gives Burnham's managerial revolution another history (while stripping it of its teleology), and appears to agree with a somewhat diluted version of Galbraith's analysis of the recent integration of the technocratic infrastructure for planning and stabilizing purposes. He insists, however, that the state still plays a minor role in the shaping of the economy, compared to the market forces over which the great corporations preside. Throughout the text Chandler resolutely denies any paternal relationship between the army and the organization of the corporation (an unacknowledged dispute with Lewis Mumford), or even between the Springfield Armoury — where current scholarship has located the origins of the assembly line — and the multi-unit enterprise. This total separation of military and managerial forms may well be overstated as Chandler's own frequent reference to line and staff concepts in the organization of the corporation would suggest.

Canadian historians, struggling with outdated theoretical tools and a paucity of evidence to explain the evolution of their peculiar dependent economy, would do well to give Chandler a close reading. The differential impact of foreign ownership may well have a great deal to do with the material characteristics of particular sectors. Changes in managerial structures may also explain the takeovers and tightening in the relationship between branch plant and parent characteristic of the 1920s, for example. In the light of the current state of debate on the role of Canadian banking in industrialization, economic historians might benefit from Chandler's discussion of the capital requirements and methods of raising capital within the manufacturing sector. Labour historians will welcome this

demystification of the material and managerial context within which and against which workers made their lives. But it will be a very long time indeed before a Canadian Chandler can consult the mass of authoritative industrial studies upon which a great book like *The Visible Hand* must rest.

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G. David Garson, Ed. *Worker Self-Management in Industry: The West European Experience* (New York: Praeger, 1977)

WHILE full worker self-management or self-managed socialism is on the agenda of several European unions, this reader deals more specifically with a variety of worker participation innovations ranging from worker participation at the Board of Directors level in the Federal Republic of Germany to rank and file initiated worker control strategies within the Italian labour movement.

The book is divided into seven parts. The introduction by the editor postulates four major models of organizational democracy which form the basis for an evaluation of current proposals for worker's participation in management. As Garson points out, the reality does not fit neatly into any one model. In political terms, the key question examined here is whether the innovations and experiences of worker participation in management in West European countries can be seen as steps in the transition to socialist self-management or whether these reforms prevent more radical changes. As Garson points out, the final outcome will depend critically on whether the participative experience turns out to be coopting or whether it will encourage demands for increased worker power until an overt confrontation with capitalist authority is brought about.

Alfred Diamant's chapter on Co-determination in the Federal Republic of