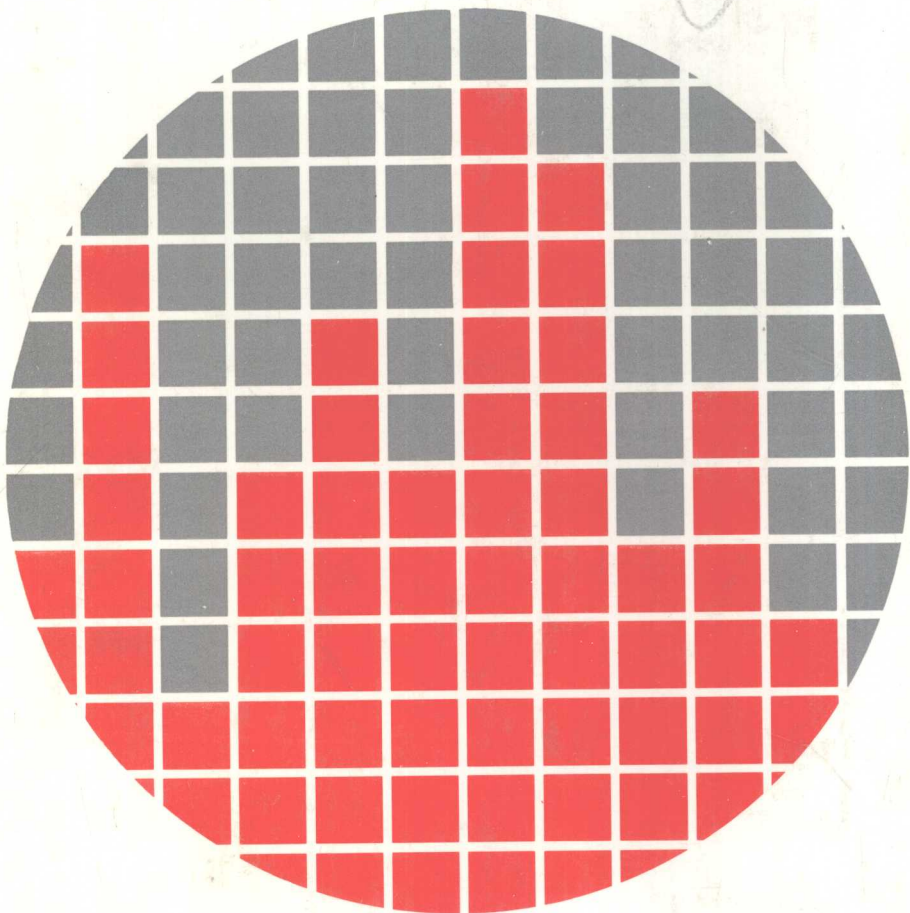


THE WORLD
HEALTH
MARKET

SV



DAVID TUCKER

THE WORLD HEALTH MARKET
The Future of the Pharmaceutical Industry

David Tucker



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The Future of the Pharmaceutical Industry

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CONTENTS

List of figures	vii
Preface	1
PART ONE	A HEALTHY INDUSTRY
Chapter 1	Origins 6
Chapter 2	Corporate Growth 24
Chapter 3	The Multinationals 37
Chapter 4	Drug Development 55
PART TWO	THE DEMAND FOR DRUGS
Chapter 5	The Health Market 77
Chapter 6	The Drug Market : A Global Perspective 100
Chapter 7	The Drug Market : National Interventions 119
PART THREE	DIAGNOSIS AND PROGNOSIS
Chapter 8	International Interventions 142
Chapter 9	Individual Initiatives 156
Chapter 10	The Future 163
PART FOUR	FACT FILE
	Drug Demand : Sales 194
	Drug Supply : Production 198
	Trade 199
	Drug Companies 205
	Demographics 207
	Health Care 212
Sources	219

LIST OF FIGURES

Part One	A HEALTHY INDUSTRY	
Figure 1	Pfizer: Sales by product	17
Figure 2	American Home Products: breakdown of net sales and profits by business sector	26
Figure 3	Hoechst & Bayer: breakdown of turnover by business sector	28
Figure 4	Top ten chemical companies, 1981	29
Figure 5	ICI: breakdown of turnover and profits by business sector	30
Figure 6	Glaxo: breakdown of turnover by world region	31
Figure 7	Drug consumption in the world economy: % of gross domestic product, 1979	37
Figure 8	Share of world drug sales: top multinationals	39
Figure 9	Comparison of concentration in the drug and car industries: share of world production of top companies	41
Figure 10	Comparison of concentration in the drug and car industries: share of world production of top top countries	42
Figure 11	World top 30 drug companies: by country	43
Figure 12	Roche, 1981: sales by region	46
Figure 13	Ciba-Geigy and Roche, 1981: foreign sales, employees and assets	47
Figure 14	Foreign sales of top American companies	48
Figure 15	Market shares of 'foreign' drugs in various countries, 1975	49/50
Figure 16	World share of drug output by region, 1981	51
Figure 17	The 'life' of a branded drug in three stages	57
Figure 18	Costs of R & D by stages	63
Figure 19	Total drug industry costs	65
Figure 20	West Germany: drug industry cost structure by company origin	67
Figure 21	West Germany: drug industry cost structure	68
Figure 22	SmithKline results, 1977-1981	69
Figure 23	SmithKline, 1981: sales breakdown by product	69
Figure 24	Glaxo: results, 1977-1983	70
Figure 25	SmithKline, 1977-1981: R & D, capital expenditure, dividends	72

Part Two	THE DEMAND FOR DRUGS	
Figure 26	Health spending by central governments, 1981	79
Figure 27	Health spending in Europe, 1974	80
Figure 28	Costs growth in health care in 16 developed countries	82
Figure 29	Hospital costs, UK, 1980/81	83
Figure 30	Medical manpower, by economic development: (1) doctors per population	84
Figure 31	Medical manpower, by economic development: (2) nurses per population	85
Figure 32	Sources of health expenditure, 1974-75 in developed countries	86
Figure 33	USA: Health spending trends	87
Figure 34	USA: health insurance coverage, 1977	89
Figure 35	UK: private insurance health coverage	88
Figure 36	Europe: forecast of health spending	91
Figure 37	Drugs in health expenditure: developed countries, 1975	93
Figure 38	Prescription versus OTC drugs: developed countries	94
Figure 39	Trade margins (mark-ups): selected countries, 1980	95
Figure 40	Drugs expenditure as % GDP, 1975: selected countries	96
Figure 41	Drug cost trends: UK and USA	98
Figure 42	European health spending: trend and forecast	99
Figure 43	The world drug market (market economies) 1960-1990	102
Figure 44	The world drug market (market economies) 1960-1985 by main regions	101
Figure 45	Main therapeutic categories of drugs	104
Figure 46	New single chemical entities introduced in the USA, by therapeutic class, 1940-1978	106
Figure 47	USA drug industry sales by therapeutic category 1979	108
Figure 48	Europe: drug consumption for five therapeutic classes	109
Figure 49	UK drug output by therapeutic category, 1971-1981	110
Figure 50	UK prescriptions dispensed by therapeutic category	111
Figure 51	West Germany: drug sales by therapeutic category, 1970-1979	112
Figure 52	USA: OTC-prescription breakdown of 1979 drug sales by main therapeutic categories	114
Figure 53	USA: OTC drug sales by category, 1981	115

Figure 54	UK: OTC drug sales by category, 1981	115
Figure 55	USA: average drugstore sales by product, 1981	117
Figure 56	USA: drugstores' share of the drug market, 1981 ..	116
Figure 57	'Goals' and 'Means' in national intervention in the drug supply	120
Figure 58	UK: promotion expenditure, 1968 and 1979	124
Figure 59	Comparison of drug price structure in five countries	128
Figure 60	Comparison of prices for identical drugs in the USA, Japan and Europe	129
Figure 61	Sri Lanka: cost savings made on imported drugs, 1974	131
Part Three	DIAGNOSIS AND PROGNOSIS	
Figure 62	Summary of criticisms of the drug industry	140
Figure 63	Chronology of international meetings concerning the drug supply	144
Figure 64	Summary of the 'Colombo' Resolution of 1976	145
Figure 65	CARICOM countries: common problems in the drug supply	149
Figure 66	IFPMA code of pharmaceutical marketing practices, 1981: summary of main principles	154
Figure 67	Bangladesh: health care targets, 1980-2000	165
Part Four	FACT FILE	
	List of selected countries for data	193
	Drug demand data:	
	World drug sales—main consumer countries	194
	World drug sales—annual % growth-rate averages	195
	Per capita drug sales—selected countries, 1973 ..	196
	Per capita drug sales—main consumer countries (highest expenditure)	197
	Drug supply data:	
	World drug production—main producer countries	198
	World drug exports—main exporting countries ..	199
	World drug exports by region	200
	World drug exports—main net-exporters	201
	World drug imports—main importing countries ..	202
	Drug supply data:	
	World drug imports by region	203
	World drug imports—market penetration, 1973-1975—in selected countries	204

Drug companies:	
Top 20 by sales—ranked by size of sales	205
Top 40 by sales—alphabetical list	206
Demographic data:	
World population estimates	207
World population by age, 1980	208
World population by age, forecasts	208
World birth rate, death rate, infant mortality, 1978	209
Selected countries—population growth, life expectancy, age breakdown	210
Selected countries—birth rate, death rate, infant mortality	211
Health care data:	
Selected countries—hospitals, beds	212
Selected countries—doctors	213
Selected countries—nurses	214
Selected countries—pharmacists	215
Deaths by cause, 1975-1978 (% all deaths)	216
WHO: 'A' list of causes of death	217
WHO: 'B' list of causes of death	218
Sources of Information	219

PREFACE

PREFACES are rarely read. This one will therefore be brief, in the hope that the reader will not be discouraged from gaining an initial idea of the book's purpose and rationale before passing on to the meatier chapters which follow.

Between this preface and the list of sources are ten chapters, divided into three parts. Part One looks at the drug industry itself from the point of view, economically speaking, of the 'supply'. The four chapters in Part One cover the history of the industry, its modern global characteristics and its mode of operation. Part Two complements this by looking at the demand for drugs and their role in health care, and features a separate chapter about the influences exerted on the drug market by government intervention.

Part Three diagnoses the causes of the breakdown in communications between the drug industry and much of the public it serves, before proceeding to a concluding chapter on the future of the industry. The issues discussed in this section are broader than those which crop up in Parts One and Two, since in order to 'prognose' the future of the drug industry it is essential that social change, and the changing attitudes to health care which go with this change, are taken into account.

The book concludes with a fact file of selected statistical data on world health and the drug industry. The author has attempted to be objective in selecting these facts, and in presenting the arguments found in earlier parts of the book, but is aware of the dangers inherent in making claims of objectivity, even where statistics are concerned. (And particularly when dealing with medical matters, where 'psychosomatic' and 'placebo' effects are ever-present reminders of human subjectivity.) However, it is hoped that this book will be accepted as an objective reference work, and that unavoidably subjective elements will at least serve as catalysts for thought and discussion.

One word warrants definition — 'drug'. The term 'drug' is used to describe the products of an industry which prefers to label them as 'pharmaceuticals' or 'health care products'. These bulky terms are, on the whole, unnecessary. 'Drug' is quite adequate as a term of reference, meaning 'a substance used in the composition of medicines' (Chambers Twentieth Century Dictionary), and need not be associated with narcotics or the pejorative view of critics of the pharmaceutical, or drug, industry.

Finally, two general points on scope and coverage. The book looks at the drug industry as a commercial operation. Medical information from the scientific point of view therefore takes a back seat, although some relevant discussion is included, inevitably. Secondly, we are dealing almost exclusively with the drug industry in the 'West', or capitalist world, or, more precisely, the world of free market economies and ignoring the centrally planned economy (or communist) countries where drug production is usually a function of the state, along with all health care provision.

PART ONE

A Healthy Industry

The directors of Glaxo Holdings had good reason to be satisfied with their company's performance in the early 1980's. Profit retained by the company doubled between June 1980 and June 1982 and Glaxo held on to its position as the largest British pharmaceutical supplier.

The tone of the Statement by the Chairman of Glaxo at the end of the 1981-1982 financial year was, as usual, sober and restrained. The reactions of investors in Glaxo could hardly have been more different in tone. 'Buy Glaxo' had become the regular advice of brokers dealing on the London Stock Exchange, and on the list of British companies with the highest market capitalisation, published by the Exchange, Glaxo continued its inexorable rise. (Market capitalisation changes show the confidence of investors in a company, by multiplying the number of shares issued by the quoted value of each share on the market.) Confidence in Glaxo was running so high in 1982 that within less than a year the drug company had more than doubled its capitalisation to £3,000m, and its position on the list of the largest British companies had moved from tenth to fourth place, a performance outstripping that of any other major British company.

What was going on at Glaxo to attract this sudden flood of investment funds? Potential investors turning their attentions to the company saw a traditional 'health care' group which only just managed a placing in The Times 100, a list of British companies ranked by turnover. In the field of drugs, Glaxo ranked as the top UK supplier, although its British competitors like ICI, Boots and Beecham were much larger in turnover terms because of their broader spread of interests. On the international scene, Glaxo could at that time only manage twenty-first position among the world's largest drug producers.

The sudden interest in Glaxo shares was triggered off by the launch of just one new drug. Zantac, a new treatment for peptic ulcer, was introduced in the UK and in Italy in late 1981, and prospects for an early launch in the USA were good. But peptic ulcer affects only a small minority of people and there was already available a rival brand, Tagamet, which had been built up over five years as the world leader in ulcer treatment. Why, then, the excitement on stock markets over the launch of Zantac?

The answer lies in the ability of a major innovatory brand of prescription drug to generate vast profits within a short space of time. Tagamet had done this for its manufacturer, SmithKline, transforming that company into a major world health care company almost 'overnight' in terms of drug industry history. In the UK itself, Tagamet purchases by the National Health Service exceeded those of any other drug bought in

value terms in the year before the appearance of Zantac. Within a year of Zantac's UK launch the brand was Glaxo's third largest-selling product. Success in Italy, where Zantac was first sold in September 1981 by the local Glaxo subsidiary and by an Italian company under licence (and under another trade-mark, Ranidil) was even more rapid. By June 1982, Glaxo could claim that more money was being spent on ranitidine (the generic name for Zantac and Ranidil) than on any other pharmaceutical on the Italian market.

The profit potential of Zantac was enough to make investors put their money on Glaxo ahead of any other British company despite the fact that all they could rely on were estimates of anticipated sales. In this respect, the drug industry is unique. It is also unique in the degree of antagonism to which it is treated by critics aghast at the price of new drugs such as Zantac and at the amounts of money which are spent on them by the health services in order to treat a small proportion of patients in any one country.

Zantac could only be successful if it received the backing of a powerful, multinational company with considerable resources available to spend on promotion and manufacture and the development of the brand on an international scale. Its predecessor, Tagamet, had been backed in this way in order to arrive at the position it held in 1981 where it was being used by 20 million people in 122 countries. Even before a new brand starts to generate sales, massive amounts of money have to be spent on research and development over an extended period; initial research which was to lead to Tagamet started in the early 1960's.

This kind of operation can only be conducted by large companies with many years of experience in the manufacture and marketing of drugs. Many of the drug giants in the world industry today have roots in the history of medicine dating back long before drugs became an integral part of health care.

Glaxo is one such company. The story of the Glaxo group is not necessarily typical of the development of all of the drug companies, but the growth of Glaxo can be used as a case history of particular interest to illustrate the way in which the drug industry has developed over many years. In the following chapters, the concrete examples of other multinationals will be used to illustrate how drug companies have grown into diversified concerns with world-wide market penetration, and Part One concludes with a chapter on the important aspects of the unique process by which a modern drug is brought to market.

Chapter One

ORIGINS

TODAY, the Glaxo group of companies comprises several subsidiaries involved in foods and chemical manufacture in addition to the companies making up the Glaxo Pharmaceuticals division. The original Glaxo trade name was the name of a brand of powdered milk, and for many years that name was associated primarily with infant foods, the business of the Nathan family. The origins of the infant food business can be traced back to a small trading agency set up by Joseph Nathan in Wellington, New Zealand, in 1873.

It was not until the 'chemotherapy revolution' of the 1930's that the Glaxo group became actively involved in the ethical drug business. Many of today's multinationals have a much longer history in drugs than Glaxo. However, two of the companies which are now a part of Glaxo Pharmaceuticals — Allen and Hanburys, and Duncan Flockhart and Co — can be traced back to the age of the apothecaries.

William Allen was an eminent philanthropist and scientist who became involved in many of the burning issues which fascinated London intellectuals in the early nineteenth century. His main preoccupation, however, was with the new sciences of chemistry and pharmacy. He lived in a house in Plough Court, in the City of London, a location which brought him into close contact with the Bevan family business. Sylvanus Bevan had opened an apothecary shop in Plough Court as early as 1715, and eventually, under Allen, the Court became noteworthy as a repository of chemical reagents.

The apothecary was the direct forerunner of the pharmaceutical enterprise. He would 'research' and prepare concoctions of medicaments in his shop for sale to ailing customers, and as such was developer, manufacturer and retailer all rolled into one. Some of the ingredients he used would have little more than novelty value, or worse, but the apothecary of the eighteenth century probably knew far more about medicine than the average physician or surgeon.

Allen and Hanburys withdrew from the field of retail pharmacy in 1943. (Glaxo retains a strong interest in drug distribution, however, through its ownership of Vestric, a major wholesale company). But the retail pharmacy remained as the source of drug manufacture through

most of the nineteenth century, whether it was called pharmacy, apothecary, chemist or druggist.

The retailing of drugs was proving to be commercially attractive to many entrepreneurs in the New World. Several of the American companies which now rank as multinational drug manufacturers started off as local druggists, including Merck, Eli Lilly, Upjohn and SmithKline. As the trade in pills and powders expanded, it became clear that production of medicines would have to keep pace with the industrial revolution.

The company founded by Thomas Beecham in the middle of the nineteenth century was quick to realise the need for mechanisation and mass marketing. Beecham's Pills were at first made by hand and sold from market stalls or small chemists' shops. Intent on expanding his business, Beecham soon found mail order to be a more efficient method of distribution and advertising in national newspapers proved equally effective. Mechanised production on a large scale became essential as the renown of the Pills spread as far afield as Australia and Africa. By 1913, Beecham had the facilities to produce a million pills a day.

While the American and British companies were gearing themselves for mass production of drugs which could be sold profitably for the relief of minor illnesses, in Germany and Switzerland developments were taking place in the completely different environment of the laboratories of companies researching dyestuffs for the textile industry. Although at first far removed from the medical field, experiments with dyes were to prove vital as they provided the means, by staining, of tracking the 'germs' which Louis Pasteur had established as being the causes of infectious disease.

By the late 1880's, Ciba of Switzerland was ready to show its first drug products at the Paris Exhibition of 1889 and Bayer had created a pharmaceutical division. Meanwhile, in the USA most of the American companies which were to become world drug leaders had been founded; before 1890, the Abbott Alkaloidal Company — later Abbott Laboratories — had begun making drugs and Johnson and Johnson were established in making surgical dressings. International trading opportunities were being explored; in 1888, Beecham's Pills were introduced to the American market.

In the late 1890's, the interest taken in drugs by the German dye company Bayer paid off with the introduction of aspirin, which soon became the most commonly used analgesic and remains today as one of the most widely used medicines in the world. In its compound form of acetylsalicylic acid, aspirin had been discovered in the middle of the century, but

its commercial application had awaited the concept of mass marketing of drugs by large companies with sufficient funds to finance bulk manufacture and distribution.

At the end of the century, then, the links were being forged between research, discovery, manufacture and marketing of drugs in single companies. The days of the old-style apothecary or druggist, and of the travelling medicine man, purveyor of 'quack' medicaments and cure-alls were clearly numbered with the advent of a scientific approach to medical care. However, despite advances which had been made during the century, from the isolation of morphine from opium in 1817 to the discovery of aspirin, and even with the contributions to understanding made by Pasteur, Lister and Koch of ways in which infection could be avoided, medical treatment was still primitive.

An example of this lack of real progress can be taken from the pages of Glaxo history. In 1896, Duncan Flockhart and Co, an Edinburgh firm which had developed considerable experience in the area of chloroform and other anaesthetics, opened a London branch. This branch was engaged in the manufacture of galenicals, which are the crude extracts of plants used as medicines. Although some of these were effective, the fact was that they had been described and catalogued by Galen in the first century A.D., and as yet no science of organic chemistry existed which could improve on Galen's analysis.

The new century

Some progress against disease was made around the turn of the century. One of the pioneering American companies was Lederle Laboratories, later part of Cyanamid, where quite powerful anti-toxins and vaccines were developed against diphtheria, small pox and typhoid. But contraction of these diseases, and of the dreaded tuberculosis and pneumonia, was still a sentence to death or crippling to most people unfortunate enough to be infected.

Meanwhile, Joseph Nathan's trading agency had proved successful enough to open up offices in London to facilitate the trading in New Zealand wool and butter, and to start finding British products which could be exported to the farmers and settlers in the colony. At that time there was no suggestion that Nathan would become involved in drugs, but by chance Maurice Nathan was introduced to the idea of powdered milk, and the course of the company's history was changed. Drying milk was clearly a potential way of using up the skimmed milk produced as a by-product in Nathan's butter factories, and in 1906 the trademark

'Glaxo' was registered as the name of a milk product especially for babies. The range of Glaxo infant foods would soon extend, and bring with it a natural interest in healthy foods and medicinal products.

In 1907, the year after the registration of Glaxo, a major discovery took place. Experiments with the properties of dyes had continued into the new century in Germany and Switzerland, and they finally paid off medically in the Hoechst laboratories, where the concept of the 'magic bullet' was born.

Paul Ehrlich, working specifically on finding a substance which would attack the spirochaete which caused syphilis, came up with the compound salvarsan. (The process by which salvarsan was discovered involved systematic 'screening' of compounds, a basic approach still used to discover new drugs, although today the process has been rendered far easier with the use of computers than it was in Ehrlich's day.) Salvarsan, although extremely crude, was the first of the revolutionary magic bullets, so named because they are drugs which attack the infection without harming the patient. In Ehrlich's own words, when he described the future of 'chemotherapy' (a term he himself had coined): "We must learn to 'aim' with chemical substances . . . so that the destruction of the parasite will be possible without seriously hurting the organism".

Salvarsan also differed from most existing drugs of the time in that it attacked the causes of disease rather than simply ameliorating the symptoms. This in turn led to a far greater understanding of infections and the ways in which the human body copes with them, although the precise nature of these processes is still far from being properly understood.

A period of two decades of disappointment followed the discovery of salvarsan. Few new magic bullets were developed until the 1930's, but this period of history is too often ignored entirely. While it is true that tuberculosis, pneumonia and anaemia remained immune to effective treatment and killed thousands every year, the drug industry did make important contributions. Bayer 205 proved to be effective against sleeping sickness; barbiturates were made available for the relief of severe pain to add to the analgesic contribution of aspirin; insulin, the first discovery of use to diabetics, made its appearance, and the use of quinine against malaria was improved. However, apart from the handful of drugs which could attack specific diseases at source, pharmacies still dealt mainly in the galenicals which had been known and used for centuries.

Another aspect of the early years of the century which should not be forgotten concerns the general improvement in health of the population in industrial countries brought about by positive measures against disease