Introduction

The work roles of most engineers cannot be appreciated fully without an understanding of what their colleagues, superiors and subordinates do. In this chapter the tasks and roles of such people are discussed. Specifically we examine the work of marketing and sales, finance, personnel, construction, management services and senior management. Then we offer a brief discussion of some features of the nature and daily exercise of power at work.

Engineering and Marketing and Sales

The commercial or marketing (or marketing/sales) function, if defined broadly, employs a very large number of people indeed, and the vast majority are not engineers. Marketing is the strategic activity of identifying consumers' needs and of working out how to satisfy them at a profit. Sales comprises the tactics of the operation. Marketing involves defining and developing products, studying markets (marketing research), and organizing selling efforts in the broadest sense so that advertising and pricing are planned for example. Sales management involves deploying a sales force in order to achieve sales targets agreed with colleagues in marketing, who receive feedback about customers and contacts by the sales representatives.

The American 'marketing concept', which has increasingly influenced management in Britain and other countries, aims to anticipate and satisfy consumer wants, rather than the older philosophy of 'we make it, you buy it' and 'if a man makes a better mousetrap, the world will beat a path to his door'. The marketing concept includes the idea of the 'marketing mix', most typically of the 'four Ps' of product, price, place and promotion. Product means such things as design, quality, appearance, and usefulness. Price is not just the basic price but includes related purchases, for example of road tax and number plates for a car, fittings for curtains, or missiles and spares for fighter aircraft. Place means the distribution channel, the ways in
which goods and services are made available to consumers, rather than just location. *Promotion* involves advertising and publicity as well as personal selling.

Selling does not only involve consumer or technical products. Services are also sold. Advertising's aims are to attract, inform and persuade. Advertisements are used to establish new products, or to engage in brand competition or to maintain a product's image. Public relations is a very specialized activity in this field. It is usually an important function in large organizations in central and local government, the nationalized industries and public corporations, private industry and financial institutions.

Rosemary Stewart (1967) described many sales managers and representatives as 'emissaries' who spent a lot of their time with contacts external to their firms, who worked quite long hours, who travelled a lot, and whose working patterns were fragmented. Child and Ellis (1973) described marketing and sales as 'initiating' kinds of work, demanding a relatively open-minded and radical attitude towards established ways of working. Many studies of sales managers emphasize their very wide range of horizontal contacts inside and outside their units. Mintzberg (1973) contrasted the 'people orientation' of sales executives with the 'production orientation' of production managers. The former wanted products to be special, which was often inconvenient for the output figures of the latter. In general it seems that the relatively autonomous, 'innovatory' and sometimes free-wheeling/wheeler-dealing character of marketing and selling generates fairly consistent and often creative kinds of tension in sales and marketing people and in colleagues with whom they come into contact. Compared with production and finance, relationships of marketing/sales staff seem to be less hierarchical and more concerned with persuasion as an end in itself.

For some products and markets, personal selling is very important; but at the other extreme a great need for the product, or very high quality, or very low prices, or very persuasive advertising can turn selling into merely taking orders. Personal selling is usually more important when well-informed industrial customers are being dealt with than when customers are less informed members of the general public. There is a ready market for many routine services, for example for vehicle servicing, shoe repairing or hairdressing. More complex services such as those provided by management consultants, computer bureaux or insurance companies need a lot of detailed exposition if they are to sell. Some complex and long-lasting goods are almost sold as if they were services: examples might include houses and ships. Some selling consists mainly of getting repeat orders; other selling is