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*Catching up in Technology: Case Studies from the Telecommunications Equipment Industry.* Taylor Graham Publishing. 1994. ISBN 0-947568-63-8. £30. 203 pp. softbound.

In China, there are just 1.3 telephones per 100 inhabitants and in Bangladesh the density is even lower: 0.2 per 100. At present, these countries have a weak or absent indigenous capability to produce telecommunication equipment. Faced with the need to improve the telecommunication capability, the governments and international institutions have to decide as what to do: invest in the development of the telecommunication industry, buy production facilities or simply buy the needed products. Each of these scenarios has advantages and disadvantages and the right choice depends on many factors.

In the last years some developing countries have succeeded to some degree in developing their own innovative industries. However, this success has been limited to a few countries and to specific technologies. There are not many publications that deal with the reasons why some countries have been able to catch up in technology and other countries have not, and why it is easier to catch up in some technologies and not in others.

Answers to these questions are of direct importance for who are responsible for policy decisions with respect to initiation, coordination and management of the technological developments. Indirectly, the answers are also important for technical professionals, especially those involved in telecommunications, because they provide an insight into the nature of the activities and the technical development problems encountered in daily practice. The reviewed book is one of the few publications that deal with the above issues. It "compares and analyses the efforts of three developing countries, Brazil, India and the Republic of Korea, to build up an indigenous technological capability in the field of telecommunications".

The book is divided into six chapters. After the introduction in Chapter 1, Chapter 2 (27 pages) defines and analyses the problem and its context. The main theses of the book are stated, i.e. that (i) the necessary but not sufficient condition for building up a competitive industry is the ability to react to internal and external technological pressures, (ii) differences in the mix of policy measures account for much of the success in obtaining a technological capability, and (iii) the present change in techno-economic paradigm has given rise to new opportunities to developing countries.

In Chapter 3 (25 pages) the structure, technology and history of the telecommunication industry is briefly described and the impact of technological change (digitalization, increasing importance of software, introduction of new telecommunication services) on the structure of the industry, on international trade and on

the possibilities for entering the telecommunications market as a producer are briefly described.

Chapter 4 (65 pages) contains the case studies. It describes in detail how Brazil, India and Korea have approached the problem of developing the capability to design, manufacture and operate telecommunication equipment. For each country the national strategy and objectives with respect to (i) obtaining control over the telecommunications service sector, (ii) the research and development effort, and (iii) manufacturing sector are described. In Chapter 5 (43 pages) a systematic comparison of the policies and their effects is given. Chapter 6 contains conclusions.

The book is carefully written and very readable. It contains a wealth of facts, figures, references, conjectures and policy analyses that makes it useful to anybody involved in the telecommunication industry. The book's value is not particularly in the novelty of its conclusions—they are not truly unexpected—but in the facts and reasoning in support of these conclusions.

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*What is Intelligence?* Cambridge University Press. 1994. ISBN 0-521-43307-X. £19.95. 206 pp. hardbound.

## INTRODUCTION

A compilation of eight lectures, this book is highly recommended for anyone who is fascinated by his (or her) own intelligence. For brevity, this review confines itself to discussing only concepts and issues, leaving out the wealth of factual information contained in the book.

## WHAT IS INTELLIGENCE?

In his stage-setting introduction, editor Jean Khalfa (JK) discusses what intelligence really is: making and using tools (including language) and, importantly, the notion of responsible behaviour (including awareness of the consequences of one's own actions).

Roger Schank and Lawrence Birnbaum (RS&LB) look upon intelligence as the ability to solve problems. They stress functionality: "intellectual capacities cannot adequately be studied without considering the purposes to which they are put by the organism which possesses them". Performing an intelligent task is the most important criterion.

Richard Gregory (RG) claims that even passive interpretation of sensory information requires superior intelligence and illustrates this for human vision.

Simha Arom (SA) affirms that African tribal music has impressively complex rules which the musicians follow without even being aware of them. (This of course is true for all languages: the uneducated child or illiterate adult