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## **Introduction**

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Recent decades have been characterized by intensifying pressures all over the world to achieve increasing industrial competitiveness as the most powerful source of rising standards of living. As a result, increasingly powerful efforts continue to be made to develop and then capitalize on any potential advantages in natural resources, in human capabilities, in capital accumulation and in technological advantages which help to accelerate such progress nationally or locally.

Inasmuch as desired gains can be achieved on many fronts, a review of current efforts in various regions reveals a substantial range of specific objectives and of means of seeking to achieve them. Because no firm, industry or country can progress effectively on all fronts simultaneously, a critical element in developing effective strategies involves appraising alternative targets relative to available means as the basis for shaping guiding strategies.

In this collection of analyses by experienced international specialists in technology development policies and programs, Part I reviews a variety of the specific approaches which have been employed by countries ranging from powerful leaders to late-comers in seeking such advances. Part II then provides some cross-cutting perspectives by examining recent advances in the contributions achieved within successive stages of the technology development and applications process.

One major implication of these analyses is that no one, not even the current leaders, can afford to slow such technology development efforts in the face of ever-expanding competitive efforts. Another implication seems to be that the processes of developing and then successfully commercializing technological advances still offer so many alternative approaches, and are attended by such significant risks, that companies and countries must still rely on multiple exploratory efforts in seeking substantial competitive advantages.

Nevertheless, as in every other sector of industrial experience, it is obvious that valuable benefits can be gained from analysing as far as possible both the successful and unsuccessful experiences of others as the basis for seeking to improve the probabilities of success in new undertakings.