Preface

I arrived in Beijing on 15 October 1964, the day before China successfully tested its first atomic device.¹ The Chinese capital in those days reminded the visitor of a vastly overgrown village town without any high-rise buildings and traffic completely dominated by bicycles. Reporting on science and technology progress from the Swedish Embassy, I could hardly imagine China rising to the status of a technological superpower within 60 years. Much less did my thinking move in that direction when as a member of a Swedish government delegation in 1979 I was visiting run-down factories and over-staffed and poorly managed research institutes. When publishing Technology & Science in the People’s Republic of China (Pergamon) in 1980 I sensed that China was involved in a massive task of reorganizing and developing her technological and scientific institutions. However, because I was focusing on developments in Japan, it took me another 20 years to realize that changes in China were changing the technological landscape in the country in a major way, and affecting the whole world.

The starting point of this book was an invitation by Professor Wang Tongsan at the Institute of Quantitative and Technological Economics of the Chinese Academy of Social Sciences (CASS) to give a lecture to students at the CASS Graduate School. My seminar was well attended, although with an extremely quiet audience listening to my naïve views on how China would become a technological superpower. At the end there were no questions until I started to put questions to the students. Suddenly, everyone wanted to make comments and ask questions, and we continued our discussions in a smaller seminar room. Several students wanted to participate in my project to understand China’s technological emergence.

Three of the students from that session, at the time PhD students, have assisted me in a major way with preparing this book. They are Dr Xinxin Kong, who is now working for the Ministry of Science and Technology, Dr Yongzhong Wang, who is now a postdoctoral researcher at the Chinese Academy of Social Sciences, and Ms Jiang Jiang, who is now completing her PhD studies. We were joined later on by Dr Yuli Tang of the Ministry of Science and Technology. Their contributions to the project ‘The Emergence of New Knowledge Systems in China and their Global Interactions’ have been incorporated into Chapters 2–5.
I would never have written this book without having been cultural attaché in Beijing for three years during the mid-1960s, and I landed in this position after having been sent to Hong Kong by my Chinese language teacher. The stay in Hong Kong resulted in my recruitment to the Swedish Embassy in Beijing, as the ambassador regarded my engineering background and Chinese language capability, although rudimentary, as exceptional qualifications. Shortly afterwards my interest in China’s science and technology was reinforced by Professor Sven Brohult, the Director of the Swedish Academy of Engineering Sciences (IVA). He posed captivating questions on how far the Chinese had reached in developing their own integrated circuits in the 1960s. In many areas, China’s scientists and engineers were at the time closer to frontier developments than they were in the early 1980s. China’s dramatic changes, not just during the past decades, have prompted me to turn my kaleidoscope around many times. This book is my perspective, after having found an exciting and very colourful image of China’s future as an emerging knowledge nation.

My perspectives on China and the role of science and technology in national development were strongly swayed by Stevan Dedijer, who in 1966 established the Research Policy Institute (RPI) at the University of Lund; at the time, this became a beacon for studies on technological change in developing countries. When moving on to social intelligence and the character of the intelligent corporation he offered me the post of RPI director, which I filled for more than ten years.

Earlier draft versions of this book were made available to a limited audience; as a result, the book has been more-or-less completely amended and revised to suit the overall objective of highlighting China’s move forward to become a technological superpower. The chapters have been arranged in a sequence that should enable a reader to study and understand changes.

The introductory chapter and the chapter on regional innovation systems (Chapter 8) have appeared as working papers at the European Institute of Japanese Studies of the Stockholm School of Economics. A final chapter on China as a knowledge economy (Chapter 10) has appeared as a working paper at the Institute of East and Southeast Asian Studies at Lund University. A further chapter on China’s technological capability (Chapter 6) was presented at a conference organized by the Asian Development Bank Institute in Beijing in early December 2004. These four chapters were drafted while Visiting Senior Research Fellow at the East Asian Institute of the National University of Singapore. I want to express my thanks to Professor John Wong and Professor Wang Gungwu for having been able to spend a very productive period of research in preparing drafts for this book.

Finally, I want to extend my thanks to the European Institute of Japanese Studies at the Stockholm School of Economics, where the former director,
Professor Jean-Pierre Lehmann, invited me to join his team as visiting professor on Japan’s science and technology. This project was generously supported by the Astra (now AstraZeneca) pharmaceutical company. My excellent research conditions at EIJS continued when Professor Magnus Blomström became EIJS director in 1997, and gradually my research interests shifted towards China and its appearance in the global technological landscape. During this period I was coordinator for a programme to develop scholarly contacts between China and Sweden, supported by the Swedish Foundation for International Cooperation in Research and Higher Education (STINT). Furthermore I have on several occasions received generous support from the Swedish Agency for Innovation Systems (VINNOVA) for projects and workshops directly related to the contents of this book.

My studies on recent developments in China have increasingly been guided by a sense of the growing role of Chinese regional ambitions and initiatives, which I have tried to illustrate in various chapters of the book. In this endeavour I was fortunate to meet the Vice-Mayor of Ningbo, Mr Wu Hemin, and the Vice-Mayor of Shanghai, Mr Zhou Yupeng, who each arranged for me to make week-long study visits in their cities in the late stage of preparing my manuscript.

In understanding regional development and the role of science and technology in regional innovation systems (RIS) I have benefited from the support of numerous people. First I would like to mention Mr Chen Zexing of the Beijing City Foreign Economic Relations and Trade Commission, who spent a sabbatical year at the Stockholm School of Economics under the STINT sponsorship programme. Subsequently, he has facilitated my meetings with staff of Beijing companies and research organizations on many occasions. Similarly I have on a couple of occasions been provided excellent opportunities to meet with staff of high-tech companies in Shenzhen, with great support from Mr Richard Zhong of the Foreign Affairs Office in the Shenzhen Municipal Government.

When I returned from my survey of the science and technology system in Shanghai in early January 2005, I was immediately offered a quiet writing corner in the premises of the Stockholm School of Entrepreneurship with a single focus on finalizing the manuscript for this book. I am very grateful to the director, Professor Per Olof Berg, and his staff for their compassionate thoughtfulness.

Early ideas and various manuscript drafts on China as an emerging technological superpower would never have materialized into this book without unfailing support from my wife Krystyna. Undiscouraged by reading early and immature drafts, she constantly suggested new ideas and enhancements, until the completion of the manuscript in early 2005. She also provided insightful support when participating in several of my study tours in China.
during 2004, a year that also took us on extended tours to Japan, Australia and Singapore.

NOTE

1. On 16 October 1964 China joined the nuclear club by conducting its first atomic test, which was the beginning of a series of increasingly sophisticated tests. The first one was an implosion fission device with U-235, for which uranium had been enriched by the electromagnetic process after partial enrichment in a gaseous diffusion facility at Lanchou.