
Preface

Judging from the share which the subject of patents has had in the literary output of economists of the last fifty years, and from the share which economists have had in the literature on the subject of patents, one may say that economists have virtually relinquished the field. Patent lawyers were probably glad to see them go; some said as much with disarming frankness. (Fritz Machlup, in Penrose 1951, p. viz)

Although the patent system has developed primarily to promote economic ends, economists have devoted very little attention to it and none at all to the international patent system. (Edith Penrose 1951, p. xi)

The quotations above from the mid-twentieth century are more than 60 years old. Much has changed since 1951 but on the whole the quotations remained valid for several decades, unfortunately. However, the quotations have in recent decades started to lose their validity, fortunately. Attention to patent issues has started to grow rapidly among economists, and also among other scholars and the public at large in the twenty-first century. An increasing number of economically oriented investigations and studies of the patent system have been made internationally, which in turn creates ever greater opportunities for international comparisons and cooperation. This is important not least because of the international character of patent issues. The growing attention is not confined only to patent issues but concerns issues related to intellectual property, innovations and economic progress in general. These issues and the growing attention devoted to them are connected with the gradual emergence of an economy that is based to a considerable extent on past and current research, development, inventions, innovations, new technologies, information services and knowledge – that is, an economy based on intellectual resources and the formation of “intellectual capital”, hence referred to as intellectual capitalism, a capitalist knowledge-based economy for which intellectual property rights should be instrumental as a basic institution.

This book is a complementary outgrowth of a previous book of mine, *The Economics and Management of Intellectual Property: Towards Intellectual Capitalism* (1999). That book dealt with patent and innovation issues mainly at firm strategy level in Japan, USA and Sweden, while this book is mainly about patent and innovation issues at national policy level, all enveloped by intellectual capitalism, evolving as a result of managerial and policy responses to new technologies and innovations. The two books are separated by 20 years. Twenty years, which happens to be the maximum lifetime of a patent right, is not a bad size of time window when looking back, as well as when looking forward. It turns out that not much from my previous book has expired, on the contrary. Hopefully this book will stand the test of time, also regarding its forward-looking parts.

This book is based on two investigations, one national and one international. The national one originated in the mid-2000s when the Swedish government commissioned me as a special investigator to carry out an evidence-based policy study of patent issues and how patents could better be used to promote economic ends. I received invaluable help in the national investigation from a large number of individuals and organizations,

among them a reference group of experts, about half of whom were lawyers with about another third who were technologists and industrialists. More than 200 persons and over 200 companies contributed to the national investigation's work in one way or another through interviews, questionnaires, hearings and discussions. I also had a project working group with a total of some ten assistants. To all of you I extend collectively my gratitude for your contributions. Particular thanks go to Dr. Frank Tietze, who served outstandingly as coordinator for the national investigation with its many sub-projects, nationalities, journeys and places of sojourn and contributed to the whole project as well as to many of the sub-projects. Particular thanks also go to Dr. Marcus Holgersson, who participated in and conscientiously contributed to several of the sub-projects in the national investigation.

As a follow-on study an international investigation of IP and innovation policies in various countries was undertaken during the years 2008–15, independent from the Swedish Government and financed by research grants. Field trips were undertaken especially in Asia, Europe and the US and close to 200 interviews were carried out, covering ministries, government agencies, EU directorates, courts and judges, universities and researchers, research institutes, industrial companies, industry associations, venture capitalists and consultancy service companies. In the various studies in and of different countries numerous people and organizations have thus been helpful. You are far too many to be thanked individually here but please know that I am indeed very grateful to all of you for your various inputs, some of which will be mentioned in the text.

Several of the over 10 years of working on this book have been spent at Stanford University as guest professor at Stanford Institute for Economic Policy Research (SIEPR) and the Department of Economics. The discussions with people in industry in Silicon Valley and elsewhere, and with colleagues and friends at Stanford, especially at the Department of Economics and the Law School but also at the Business School, the Engineering School and other departments, have been of utmost importance for my work. It is difficult to imagine a more inspiring and fruitful place for interdisciplinary research work than Stanford. Again I am grateful to far too many people to be listed here. Still I want to explicitly thank SIEPR's eminent director for many years, Prof. John Shoven, for generously hosting me there. I also want to thank my dear friend and esteemed colleague Prof. Nathan Rosenberg, who tragically passed away in 2015, for his inspirational support, broad knowledge and deep insights, personal and intellectual camaraderie, humour and friendship over several decades. Thank you, Nate, and thank you all at Stanford!

Domestically, my thanks go to my alma mater and workplace for most of my academic life, Chalmers University of Technology in Sweden, and my colleagues, students and friends there, especially at the Department of Technology Management and Economics, and the academic freedom to operate that has been bestowed upon me. Many individuals there have assisted me during various parts of the long book journey. My thanks go to Marcus Holgersson, Johan Ahlqvist, Erik Eklöv, Peter Jonsson, Robert Kärrberg and Erik Olesund for their assistance in checking data, literature and various manuscript versions midway in the book project. Marcus Holgersson also participated in several of the field trips in the international investigation as well. Special thanks go to Jacob Moos, who in various capacities conscientiously and effectively for several years has provided able and reliable research and editorial assistance, not the least in the crucial stages of finalizing

the entire manuscript. For careful, reliable and timely assistance with proofreading, data checks, indices etc. in the finalizing stages special thanks also go to Oskar Granstrand and Andreas Opedal.

Various people have read various parts and versions of the manuscript over the years – Bengt Domeij, Thomas Ewing, Oskar Granstrand, Ivan Hjertman, Marcus Holgersson, Stan Metcalfe, Jacob Moos, Nathan Rosenberg, Mike Scherer and Frank Tietze. Professor of Law Bengt Domeij has knowledgeable read and commented from the perspective of patent law and economics. Dr. Marcus Holgersson has read large parts of the manuscript in several versions and so has US Patent Attorney Thomas Ewing, together with European Patent Attorney Ivan Hjertman regarding legal issues. Oskar Granstrand has checked the entire final manuscript and provided valuable insights regarding patenting and entrepreneurial issues. Language checks have been provided by Thomas Ewing and Jon van Leuven. Needless to say I am deeply grateful to all of you. My foremost thanks go to Prof. Mike Scherer, who so generously has read and extensively commented on a next to final version. Mike's knowledge, experience, simultaneous attention to detail and the big picture, analytical skills and generosity are remarkable. Mike has also instilled a sense of balance and a well-rounded view of the patent system in our discussions over many years. Thank you, Mike!

The many valuable comments and suggestions notwithstanding, I naturally take sole responsibility for all results and recommendations of the investigations, including any faults and errors. Financial support has been provided by The Swedish Innovation Agency Vinnova, the Research Foundation of Handelsbanken, Chalmers internal funds and the Institute for Management of Innovation and Technology at Chalmers, which is gratefully acknowledged. I also would like to thank my editors Matthew Pitman and Christine Gowen at Edward Elgar Publishing for their sustained patience throughout a series of delivery promises. Finally, not the least but the most, a heartfelt thanks to family and friends who have endured in the shadow of the Book for so long and tirelessly have provided helpful conversations and encouragement in good spirits.

In conclusion, I certainly hope that this book in all modesty will contribute not only to increased attention to patent and innovation issues and growth of academic research on the international patent system, but also to measures for increasing international innovativeness for the greater good. This calls for interdisciplinary endeavor of diverse kinds. For my part, I look forward to continued attention for hopefully another 20 years to these issues across academic disciplinary borders as well as across national and generational borders, not least with the aim of helping to see that the introductory quotations above are consigned to history ultimately. Samuel Johnson once wrote "What is written without effort is in general read without pleasure". My sincere hope is that what has been written in this book with much long drawn-out effort will be read with pleasure.

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