Economics of Science, Technology and Innovation

# The Economics of Persistent Innovation

Edited by Christian Le Bas William Latham



# THE ECONOMICS OF PERSISTENT INNOVATION: AN EVOLUTIONARY VIEW

Economics of Science, Technology and Innovation VOLUME 31

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# THE ECONOMICS OF PERSISTENT INNOVATION: AN EVOLUTIONARY VIEW

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Library of Congress Control Number: 2005933467 ISBN-10: 0-387-28872-4 e-ISBN 0-387-29245-4 ISBN-13: 978-0387-28872-7

Printed on acid-free paper.

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Printed in the United States of America.

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# PREFACE AND ACKNOWLEDGEMENTS

Christian Le Bas

The idea of studying the persistence of firm innovative behavior emerged gradually over the period during which I directed the Economy and Applied Statistics Laboratory<sup>1</sup> at the University Lumière Lyon 2 in the middle 1990s. Definitive studies were carried out from the very beginning by enthusiastic and productive young researchers. First Alexandre Cabagnols dealt with persistence as a substantial part of his PhD thesis. Then Claudine Gay identified the crucial roles of consistent and persistent inventors in the collective process of knowledge growth. Subsequently, with the assistance of Karim Touach, Claudine and I have undertaken new empirical research on persistent inventors as relatively unknown figures in inventive structures. This nascent enterprise received an intellectual and logistical boost several years ago with the collaborations of William Latham and James Mulligan, my colleagues from University of Delaware (USA). The completion of this book owes much to their efforts and especially to the productive links I have forged with William Latham, the co-editor, my co-author and my friend. We are indebted to the highly successful cooperative exchange program between the University of Delaware and the University Lumière Lyon 2 which encouraged the development of the professional contacts that led to our collaboration. While it is hopeless to try to acknowledge all of those whose comments, remarks and criticisms have enriched our work, I must make special mention of Paolo Saviotti whose salient comments contributed so vitally to Chapter 7.

This project was accomplished with precious, and mostly persistent, support from a variety of sources including the funding for two different research groups by the University Lumière Lyon 2 (first the Economy and Applied Statistics Laboratory and then the Economics of the Firm and Institutions Laboratory<sup>2</sup> and grants from the French National Center for Scientific Research<sup>3</sup> program, "Economic Issues in Innovation."<sup>4</sup> I cannot forget the Catholic University of Lyon's program (GEMO-ESDES) which provided me with the time for writing a significant part of this book. Finally I

I dedicate this book first, to the memory of Ehud Zuscovitch, with whom I shared both a passion for evolutionary economics and a friendship and, second, to Keith Pavitt, a true intellectual leader in the field of the economics of innovation.

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# **INTRODUCTION**

William Latham Christian Le Bas

Persistence of firm innovative behavior became an important topic in applied industrial organization with the publication of the seminal empirical work of P. Geroski and his colleagues (1997). Evidence that firms innovate persistently has led previous studies to focus on the determinants of innovation persistence and on its heterogeneity across industries, technologies and countries. The aims of this book are: (1) to illumine the scale and scope of the phenomenon of persistence in innovation, and (2) to account for the principal factors that explain why some firms innovates persistently and others do not.

Because this book deals intensively and extensively with the subject of firm innovation persistence, which is not, as yet, a well-known term, we need to provide a nontrivial definition of it that encompasses the full range topics we want to address and aids our understanding of how they are related to each other. We begin with a careful identification of "innovation." Our first definition is drawn from K. Pavitt (2003), "innovation processes involve the exploration and exploitation of opportunities for a new or improved product, process or service, based either on an advance in technical practice or a change in market demand, or a combination of the two." While this definition is clear, and conforms well to both our empirical and theoretical perspectives, some elaboration may help to clarify the concept. For example, in empirical quantitative studies, including those of this book, the choice of a measurable indicator of innovation brings additional nuances to the definition. Pavitt (2003) argues that a simple improvement of an existing product ought to be included as an innovation. This means that innovation is not necessarily "radical" or "architectural" but, often, very often indeed, merely "incremental."<sup>1</sup> However, while innovation occurs at the level of the individual firm it is not a "firm-in-isolation" phenomenon: what is new for only a single firm within an industry, cannot be considered to be an innovation for the industry or the economy as a whole.

Our view of the appropriate definition of innovation has implications for the economic analysis of innovation. Nelson and Winter (1982) distinguished