

**SMALL FIRM GROWTH IN  
THE AUSTRALIAN BIOTECHNOLOGY  
INDUSTRY:**

**A STUDY OF OBSTACLES TO THE COMMERCIALISATION  
OF AUSTRALIAN BIOTECHNOLOGY RESEARCH**

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A thesis submitted in fulfilment of the requirements of the degree of  
Doctor of Business Administration

**Macquarie University  
Macquarie Graduate School of Management**

June 2006

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Veronica Bondarew

June 2006

# Abstract

Australia has a strong record of medical science research. Of the country's seven Nobel Prize winners, six have been within the bioscience sector. But Australia has been struggling to produce an FDA-approved blockbuster drug. The high level of research output in biotechnology is inconsistent with the low level of commercialisation of products resulting from the research.

What distinguishes the successful companies in the Australian biotechnology industry? In particular, what obstacles are encountered by Australian scientists attempting to commercialise their inventions and are these obstacles specific to the Australian context? Biotechnology impacts on an extraordinary range of industries, particularly in the health care sector, and is one of the major drivers of sustainable economic growth in the 21<sup>st</sup> century. The contrast between the Australian biotechnology industry's potential and achievements inhibits its ability to contribute to national wealth. This study investigates the difficulties encountered by Australian biotechnology firms in their attempts to commercialise their research.

Garnsey's (1998) small firm growth model, based on engineering firms with in-house production, has been used to identify obstacles to biotechnology innovation and problems encountered in commercialising the research before the firm has been established. The research question asks to what extent the model can assist in understanding the obstacles that impede the growth of Australian biotechnology firms.

Taking a qualitative approach and using an integrated and coherent case study methodology, the research identifies major obstacles to the growth of five firms through three clearly identifiable phases. Findings from the comparative case study analysis show that the firms' growth patterns generally conform to the model, but with major deviations due to specific differences between the engineering and biotechnology industries. Although biotechnology firms worldwide face similar obstacles to their growth, Australian firms encounter additional problems that seriously impede potential commercialisation of their biotechnology research.

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## **Abbreviations used in thesis**

ABT	Australian Biotechnology (firms)
BIF	Biotechnology Innovation Fund
CSIRO	Commonwealth Scientific and Industrial Organisation
CSL	Commonwealth Serum Laboratories
FDA	Food and Drug Administration
GM	Genetically modified
HGH	Human growth hormone
HRT	Hormone replacement therapy
IAC	Industries Assistance Commission
ICAT	Isotope Coded Affinity Tagging
IO	Industrial organisation
IP	Intellectual property
IPO	Initial public offering
LC	Liquid chromatography
NCI	US National Cancer Institute
NIH	US National Institutes of Health
NTBF	New technologically based firm
OTC	Over the counter
OGTR	Office of the Gene Technology Regulator
R&D	Research and development
RBV	Resource-based view

## Acknowledgements

I wish to thank my supervisor Professor John Mathews for directing me to a most interesting industry and to Professor Ernest Jordan who patiently provided valuable guidance and support in supervising the final stages of the thesis . I am also grateful to Dr Mike Hirshorn who provided me with many introductions to the case study participants and without whose support and encouragement it would often have been difficult to proceed. My thanks also go to Mr Wayne Lonergan for painstakingly reviewing my final drafts and providing much needed encouragement and support. I would also like to extend my thanks to Professor Michael Vitale, Dr Peter Sheldon and Dr Wallace Bridge for their kind patience, encouragement and advice throughout years of vacillation and procrastination.

I also acknowledge the support and kind indulgence of the case study participants in my research. The support and facilitation afforded me by senior management of the five firms was quite remarkable. My thanks in particular go to Jim Patrick, Cochlear Limited; Chris Naughton, Novogen Limited; Mark Gauci, BTF; Keith Williams, PSL; Peter Graham, CSD and Dr Jim Peacock, CSIRO. Without their assistance I would have no thesis to present.