This Project was undertaken by The Royal Society of New Zealand in partial fulfillment of its Statutory responsibility to provide Government with independent and non-partisan science and technology advice. By doing this, the Society gives practical expression to its wish to contribute to Government’s objectives for economic growth and to share in the common responsibility to develop mechanisms for shaping ideas and strategies for the future.

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Appendix: Key Findings and Final Report
    (if the Appendix is not available with this Report, it can be found at www.rsnz.org)
Preface

New Zealand has a proud history of achievement on a global scale – well demonstrated by our established community of scientists, engineers, and technologists, many of whom are acknowledged internationally at the highest levels.

Increasing exports of innovative technology and value-added products is vital to New Zealand’s future as a strong, wealthy nation. It is our belief that this would be further enhanced by encouraging more New Zealanders along the route to the successful leadership of commercial enterprises delivering these technologies.

To obtain further commercial opportunity from our excellence in science, The Royal Society of New Zealand and New Zealand Trade and Enterprise have sponsored the Once Upon a Leader study to explore the characteristics of leadership relevant to science and technology commercialisation.

Three fundamental assumptions underlie our work:

- a successful leader is a prerequisite to a successful enterprise;
- it is possible to encourage, motivate, and inspire potential leaders to fully realise their potential and achieve effective leadership status;
- by applying the lessons of our current achievers in a structured way, more New Zealanders will gain the necessary confidence and ability to commercialise our innovative technologies in global markets.

We are encouraged that we have found a logical progression towards outstanding leadership that is consistent amongst the 31 leaders we interviewed. This suggests there is definitely an opportunity to transfer the experiences of our successful leaders to the wider New Zealand community. Progression towards success is depicted as a staged pathway marked by a series of transition points. A key feature of this pathway is the acknowledged role of “enablers” who have given direction and encouragement to take our now successful leaders across these transition points.

We offer our findings as a further step in the journey towards an era of planned and supported development of human potential. This development of our people is critical for our country to grow successfully as an invigorated, independent, robust and wealthy nation.

Dr Jim Watson, President
The Royal Society of New Zealand

Tim Gibson, CEO
New Zealand Trade and Enterprise
Our Study

There is little debate that New Zealand needs to increase the rate of growth of its economy and that much of this growth must come from exports. Equally, there is strong belief that New Zealand-based science and technology has the potential to contribute significantly to this required growth. The challenge we have, as a nation, is to find ways to unlock this potential.

Time and time again, New Zealanders prove themselves capable of world-class endeavour. New structures and mechanisms have been confidently established in support of growth over recent years. Individual stars shine brightly. However, the total sum of success could and needs to be greater.

This *Once Upon a Leader* study sought to learn how our contemporary entrepreneurial leaders reached their successful positions. Specifically, we wished to identify the critical influences that nourish outstanding New Zealand leadership in the profitable, international commercialisation of technology. We believed that if we could find sufficient common factors, then these could be engaged to ease the pathway for more New Zealanders with leadership potential to additionally achieve success in technology commercialisation.

Our inquiry revealed that no current work was focused on this area.

To identify the critical influences that nourish leadership, we elected to interview a small group of New Zealanders who are currently achieving commercial success. The essential criteria for selection were that the individuals should be clearly identifiable as the central driving force of the success, and that the achievement should be international technology commercialisation. Commercial success was defined as the ongoing receipt of significant sales revenue. The attraction of foreign investment funding or venture capital was not considered sufficient. An additional requirement was that the business should have provided substantial new commercial opportunity.

A concerning feature of our selection exercise was the difficulty experienced by many of the individuals that we approached, within the science, technology and education communities, in nominating people who met the required criteria. This observation parallels those of concurrent studies that are identifying the generally poor appreciation most New Zealanders have of our business sector.

Care was taken to ensure that our sample had as even a coverage as possible across major business sectors, gender and ethnic groups. Despite our determined attempts, no appropriate leaders were identified within some major areas of economic activity, men heavily outweighed women and “European New Zealanders” were the predominant ethnic grouping.

In all, 31 leaders with ages ranging from 26 to 83 years were interviewed. The median age was 55 years. The majority came from the middle or upper-middle classes. Five described themselves as having come from economically-disadvantaged families. Eight
leaders were selected from the sub-categories of emerging leaders in their 20s and 30s.

The task of performing the interviews, analysing the responses and developing the leadership model was performed by Annick Janson, with the support of Professor Bob McQueen, both of the Waikato Management School, University of Waikato. Following the initial analysis of the interview responses, the leaders were able to participate in an on-line discussion that further developed some of the key observations.

Most interviews were conducted face-to-face and were fully, or partly video-recorded. This visual record is rich in its potential to convey the experiences of our successful business leaders. It has not been adequately developed by this study and it is strongly recommended that ongoing activity take full advantage of it. Samples of the visual record are presented in the DVD at the rear of this report (or, see web site www.rsnz.org). We strongly recommend that you view it.
The Leadership Pathway

A model of leadership development emerged from the common experiences of our leaders. This model comprises a Leadership Pathway along which the leaders progress to sustained international success. The Leadership Pathway has five elements (Figure 1):

- **Development Stages**, representing the seven stages of the pathway.
- **Leadership Factors** required for the leader to have the capability to progress along the pathway.
- **Environmental Factors** that provide the leader with the confidence, determination and tacit experience to progress along the pathway.
- **Enablers** who provide vital support to help leaders make their way across the transitions from one Development Stage to the next.
- **Excuses** typically offered by those who stall along the pathway.

The pathway is symbolically thickest at its base, where all young New Zealanders begin their lives. It then progressively narrows through the Development Stages to the upper levels that are occupied by only a very small minority of our population. Some people do achieve various measures of success on parallel pathways, in activities outside science and technology commercialisation – they are not, however, the focus of our present study.

There is an uncompromising requirement that a person predominantly possess the identified Leadership and Environmental Factors, if they are to progress to the top section of the pathway. Additionally, they must be well balanced in their possession of these factors. It is not sufficient to have exceptional strength in some of the identified factors, at the exclusion of others.

The Environmental Factors combine to provide a unique opportunity for New Zealand and its people. The experiences of
the leaders interviewed confirm that our greatest strengths for international innovation commercialisation may arise from our otherwise seemingly harsh and challenging market conditions. Our geographic isolation, young structures and multi-tasking capabilities combine to allow us to offer fresh solutions to opportunities that are increasingly unavailable in the remainder of the developed world. One significant constraint on our ability to derive advantage from our innovative potential is our weak knowledge of international commercial and social practices. It appears important that our future commercial leaders improve their knowledge of how their counterparts in other countries think and operate.

The seven Development Stages of the pathway are:

1. Early formative years throughout primary school and the nourishment of the family
2. Building the basis for self-confidence, from secondary school onward
3. Developing responsibility and self-determination, within tertiary education and the transition to the work environment
4. First risk-taking action in establishing personal enterprise
5. Building leadership by developing ability to manage crises and business growth
6. Breakthrough the growth plateau by a second risk-taking action in which the business is taken through the ‘chasm’ to international activity
7. Giving back experiences gained to others on the pathway.

The seven Development Stages, their associated “Enablers” and “Excuse” Statements, and the components of the Leadership and Environmental Factors are presented in Figure 3, together with some amplifying comment. The detailed study by the Waikato Management School that underlies the development of this Leadership Pathway is appended. This study synthesises the experiences of the leaders interviewed in the various stages and components of the Leadership Pathway and presents representative Case Studies.
The compelling value of the Leadership Pathway is its clarity and simplicity. It represents the collective successes of New Zealanders who began their lives in environments similar to most of us. It is a concise statement of how future leaders might progress along the same pathway, encouraged by an understanding of the important elements. Alternatively, it is a reminder of how those of us with relevant experience might reach out to others below us on the pathway and give them our support as enablers, and mentors. A stern reminder is also provided that we should not allow easily-found excuses to justify failure.

Important components of this Leadership Pathway, that are additional to the five key elements, are the:

- **Serial Entrepreneurs** who have extended experience gained from developing more than one business venture and are able to compare between situations and across time.
- **Intervention Points** between the Development Stages at which people will stall until they have the necessary confidence and skills to proceed. **Key Intervention Points** are (1) **Start-up**, the beginning of the leader’s business venture (the First Risk Stage); (2) **Growth Plateau**, where mid-sized companies peak in their growth (during the Building Stage); and (3) **Pre-chasm**, the point at which companies face, and often shy away from the prospect of entering the international market (the Breakthrough Stage).
- **Tacit Knowledge** that comes from personal or shared experience and gives confidence for action.
- **Case Studies** that succinctly illustrate particular aspects for the Leadership Pathway using the stories of individual business leaders.

**Widening the Pathway**

Leaders in business and innovation are a nation’s primary wealth-creating agents. Visionary leaders can take the business steps needed for substantial wealth creation, even when they entail risk-taking. New Zealand needs more leaders who are conversant with the opportunities of science and advanced technology and who can achieve world-scale commercial success through them.

Our immediate concern, as the Project Team, has been to identify mechanisms to rapidly increase the numbers of technologically literate and commercially successful leaders in New Zealand who are performing at the top-end of the pathway. The broader presence of these leaders would contribute significantly to current national economic wealth, while providing role models to the next generation. For the longer term, we have an equal concern to take the lessons and opportunities of our Leadership Pathway to secondary and tertiary students.

The following issues and recommendations appropriate to these concerns arose from our Study:

**Issues**

1. The performance of this pioneering study by The Royal Society of New Zealand emphasises the Society’s appreciation of the direct link between economic wealth creation and innovative science and technology. New Zealand scientists have not widely recognised a responsibility for the commercialisation of their science. This study marks an important milestone in the changing social responsibility within the national science and technology sector.
2. While some New Zealanders are presently successful in leading
the international commercialisation of innovative science and
technology, many more are required if we are to achieve the
economic expansion we require.

3. The backgrounds of our successful leaders have much in
common with the bulk of New Zealanders. The stories of the
movement of these leaders along their pathway to success are
rich in their potential sources of inspiration.

4. Knowledge of how New Zealand business leaders in science
and technology-based ventures succeed in their personal and
mercantile growth has not previously been articulated in depth.
Contemporary leaders have expressed the need for such NZ-
specific leadership programmes. These programmes and the
knowledge they provide should also facilitate the transfer of
this national tacit knowledge.

5. The “enabler” has a critical potential role in the life of each and
every New Zealander. There is a national need for more
“enablers” to actively reach out to all persons with the basic
qualities required to progress along the Leadership Pathway.

6. Freedom from traditional boundaries of behaviour and strong
multi-tasking capability gives New Zealanders unique ability
to develop innovative solutions that differ in the freshness of
their approach from those of an otherwise increasingly
homogeneous world.

7. New Zealand has particular strength in creative design and
process and product development, a capability that must be
nurtured and enhanced.

8. New Zealanders must become more tolerant of failure and
recognise it as part of the learning process of “what not to do”
in the establishment of successful enterprise.

**Recommendations**

_That,_

1. The Royal Society of New Zealand and New Zealand Trade
and Enterprise work together to develop competent new leaders
able to generate economic wealth from national science
investment.

2. The Royal Society of New Zealand familiarise its membership,
as learned organisations and individuals, with the Leadership
Pathway as an innovative tool, and that they actively encourage
more New Zealanders along it.

3. A group of senior business leaders be supported to articulate
their successful processes for science and technology
commercialisation in global markets, together with mechanisms
for the transfer of this knowledge to emerging leaders to
encourage them along the pathway.

4. Inspirational programmes be developed from the experiences
of contemporary business leaders to give young New Zealanders
the ambition, capability and confidence to move up the
Leadership Pathway, as they move from secondary school,
through university to their first professional employment
positions. (Pilot programmes utilising the video-tapes and
transcripts of the leaders’ interviews of this study will provide
an invaluable starting point for this process.)

5. “Enabler” groups be made aware of their central importance to
the personal development of others and become active in this
“enabling” role. Both professional bodies and educational
organisations have key roles in raising awareness of the
“enabler” function and ensuring its widespread practical
achievement.
6. Professional and tertiary education bodies ensure that their members and students, respectively, appreciate the importance of networking and have the social skills to develop them.

7. Self-diagnostic methodology be developed to enable businesses and their leaders assess their preparedness for expansion across transition points – particularly chasm points.

8. Topical short courses be developed to transfer the experiences of successful New Zealand businesses, within a framework of international practice. These courses should be targeted to functional managers and CEOs and be of two to three weeks’ duration.

9. Improved opportunity be provided to enable potential and emerging leaders to better understand the cultures, networks and operating practices of their counterparts in other, economically-successful countries.

Moving up the Pathway

This Study has shown that successful commercial leadership is broadly within reach of many New Zealanders. Of even greater importance has been the realisation that our country’s supposed difficulties of isolation and newness offer us a unique opportunity to provide the world with creative, fresh, pathbreaking business solutions. Achievement of our desired economic success may be reached by adding focus to the talents of our individuals, as well as the systems and structures that have preoccupied us over the last decade.
Recognition of this importance of individuals provides The Royal Society of New Zealand with the opportunity to stimulate increased vitality within the national innovation process by articulation and implementation of the Leadership Pathway. The anticipated role of The Royal Society of New Zealand in this respect is that of the influencing catalyst. The change agents will be the Professional Societies and Business Organisations, together with the Government agencies responsible for economic development and education. The Royal Society of New Zealand cannot, however, act separately to its membership. It needs to raise its members’ awareness of their importance in actively participating in the wider innovation process and in enabling receptive New Zealanders to develop the skills required to lead the commercialisation of innovation. Concurrently, there is an equal opportunity for other organisations to give serious consideration to this Leadership Pathway and support its implementation where they find it of value.

The successful result of the implementation of our Leadership Pathway within the New Zealand innovation environment will be the achievement of a new commercialisation paradigm. This paradigm will equally be of value to other fields of national endeavour beyond the science and innovation sectors.

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Compac Sorting Equipment
Macpac
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Peace Software
Wendy Pye Group
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WETA
TVD Telephony Video Data
DataCol
WorkPace
Formway Furniture

Front Row, (l to r): Dr Stuart Corson, Academy Council, RSNZ; Cris Westrupp, RSNZ; Dr Kevin Marshall.

Second row: Annick Janson, University of Waikato; Sir Ron Carter, Beca Group Ltd; Peter Bull, New Zealand Trade and Enterprise; Prof Bob McQueen, University of Waikato.

Back row: Prof Peter Brothers, University of Auckland.

Inserts – lower: Dr Vicki Compton, Auckland College of Education; upper, Dr Welby Ings, Auckland University of Technology.