

# ***New Directions in RTO Marketing: Towards Sustainable Innovation***

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*“I, lichen, work slowly, very slowly. Time is my friend. This is what I give you:  
patience for the long haul and perseverance.”*

*“It is a dark time. As deep-diving trout I offer you my fearlessness of the dark.”*

*“I, lion, give you my roar, the voice to speak out and be heard.”*

*“I am caterpillar. The leaves I eat taste bitter now. But dimly I sense a great change  
coming. What I offer you, humans, is my willingness to dissolve and transform. I do  
that without knowing what the end-result will be, so I share with you my courage,  
too.”*

Joanna Macy, Earth Prayers, p 280.

## **A short historical tour**

Twenty years ago, governments in many countries were concerned about their sluggish economies and what they perceived to be an eroding scientific competitiveness. Given tight budgets, many countries encouraged Research and Technology Organizations (RTOs) to acquire funding for R&D from industry. Government policy in many countries supported this view. In the 1980s, close ties between industry and science were not only encouraged, in some cases they were mandated; for example, ‘[The US] federal government enacted a list of statutes that mandated the National Institutes of Health (NIH) to cooperate with the private sector’ (Horton, p 7). The seminal Bay Dohl Act (1982) made it easier for US universities and federal laboratories to realise financial benefits from technologies developed with public funding.

Driven by such policies, interaction between RTOs and the business community intensified. Technology transfer and other innovation professionals began to hear that the world of science needed to be reformed to bring it closer the marketplace. It was accepted that RTOs needed to enhance their commercial skills and expedite their business development activities.

New positions and departments were created to facilitate interaction with industry. Within a few years, most universities had established technology commercialization and transfer departments. The results of a recent survey of university technology managers in the US illustrate the success of these activities and policies: licenses executed by universities increased 75% between 1991 and 1996, with 13,807 executed over this entire period. Furthermore, patent royalties accruing to universities have more than doubled over a period of five years. In 1997, universities and research institutions received US\$611 million in licensing fees, up from \$248 million in 1992 (Rausser, 1999). In US universities, corporate investment in research accelerated from US\$264 million in 1980 to \$2.8 billion in 2000 (Krimsky p 14).

The winds of opinion have shifted since the 1980s. Although it is still recognized that innovation creates economic growth and quality research cannot be undertaken

without adequate funding, there is a different type of criticism in the air, driven by an increasing perception that our accelerated push to commercialize the outputs of scientific and technical organizations have had undesirable impacts. As former Harvard President Derek Bok states, ‘What is new about today’s commercial practices [in RTOs] is not their existence but their unprecedented size and scope’ (Bok, p 2).

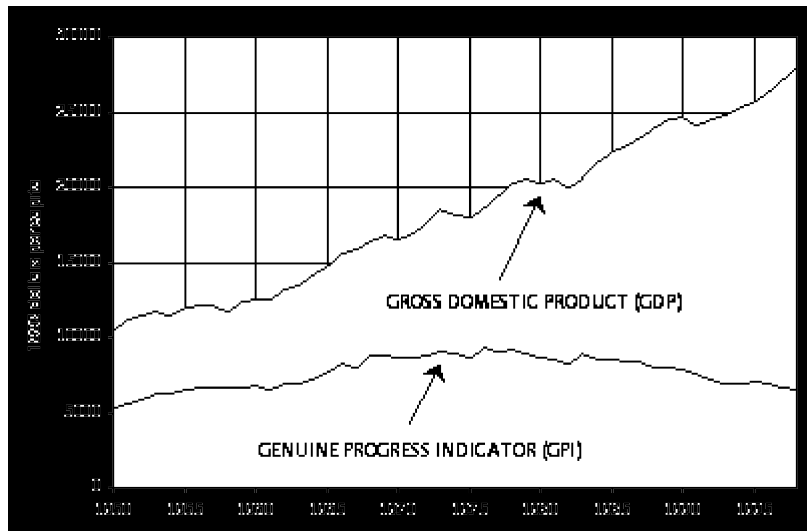
This article aims to respond to the challenge to innovation professionals to examine whether some of the assumptions underpinning common business practice have been sufficiently reviewed for relevance, and if not, to examine some possible alternative practices.

## **The rise of the corporation, the domination of growth as a social value**

Data emerging in particular from countries with a strong free market model, like the USA and Australia, illustrate some of the problems of allowing market forces and corporate growth to dominate national and international political and social agendas.

For example:

- Increasingly, ‘progress’ is equated with ‘economic growth’. GDP, as a measure of economic growth, is increasingly used as an example of how a given country may be ‘progressing’. This simplistic equation has attracted increasing criticism. Alternative measures of ‘progress’ have been proposed as alternatives to GDP, like the Genuine Progress Indicators (GPI). GPI balances positive figures for economic growth with the costs of achieving that growth. It uses established economic methods to incorporate 23 factors that influence human wellbeing, aggregating them into a single index that can be compared directly over time to GDP (cf Hamilton; [www.redefiningprogress.org](http://www.redefiningprogress.org)). For example, whereas GDP measures revenue from logging; GPI ‘corrects’ that revenue figure to take into account environmental impacts on the forest, social impacts of decreased green space, employment impacts, etc). Comparisons of GDP and GPI have indicated that many people experience a diminished sense of well-being, even as economic growth appears to rise. (For comparisons of GDP and GPI ratings for the USA over 45 years, see Figure1 below.)



Source: Redefining Progress at [www.redefiningprogress.org](http://www.redefiningprogress.org)

- Marketing campaigns driven solely by commercial objectives have often created perceived needs for products which may represent only a minor improvement or variation over existing products. ‘Created needs’ spur people to overconsumption, overwork, and resulting in high levels of waste, with resulting negative impacts on the environment, as well on well-being. More will be said about this issue below.
- Time for family and community interaction, important sources of wellbeing, is often sacrificed as people work toward ever-increasing growth goals. People think they need more material possessions. Hacker has reported that of the nearly 100 million people in fulltime employment in the US, over half made less than \$35,000, but they believed that at least \$65,000 was needed to support a family with children (p 38). Fewer families believe they can live on one income. In the US in 2002, 51.2% of families had two income earners, 13.8% had three or more. Only 35 % of families had only one earner. For married couples with children, in 61.3% of cases both are employed (US Bureau of the Census (2002)).
- As stated above, ‘overwork’ is a common response to the perceived need for more goods and services. Australia is now one of the countries of the world where people are working longer to earn more money. Australians now average 1855 hours of work a year, ahead of the Americans on 1835 hours and the Japanese on 1821 hours (Tiffen 2004)
- Human alienation and dissatisfaction as a result of overconsumption is reported in an increasing number of national and international studies. For example, a 1995 publication, Yearning for Balance (Merck Family Fund) reported on a national survey of US citizens. Most respondents believed that materialism is corroding society, but they said they were too fearful to change their behavior.

- The association between alienation and materialism is not limited to affluent groups. The Australian Unity Wellbeing Index (2002) found that people in low income groups (less than \$15,000 a year household income) had an average satisfaction level (72%) only slightly lower than that (78%) in the highest income groups (over \$90,000 a year). Apart from the evident misery of those suffering real poverty, for most people an increase in income has a short-term positive impact on wellbeing, but it rapidly diminishes as expectations and aspirations rise with income, a phenomenon termed by psychologists the ‘hedonic treadmill’.
- The impact on the environment of product waste through overconsumption is huge: Australian think tank director, Clive Hamilton says that: “Researchers calculated that in 1961, human demand for resources was about 70 percent of the Earth’s ability to regenerate; by the 1980’s demand had grown to equal the annual supply of resources, and by the end of the 1990s, it exceeded by 20 per cent Earth’s capacity to sustain consumption (Hamilton, p 176)”. One very visible example of overconsumption may be found in the discarded VCR and computer monitors which have become such a problem in the US, where the rapid development of computer technology and the marketing of transitional systems have reduced the average life of a computer from five years to two, that California banned computers and televisions from landfill dumping in 2003 ([www.govtech.net](http://www.govtech.net)).
- Sadly, problems in the developed world may be perceived as business opportunities elsewhere. Frequently, as discarded computer systems are ‘dumped’ in developing countries, where they cause serious environmental and public health problems (see box below).



Worldwatch has reported that:

- In 1987 only about 1.7 million monitors (of 300 million) in the US were ‘recycled’. About 1 million ‘recycled’ monitors were shipped to countries such as China.
- Each computer and television display uses a Cathode Ray Tube that contains an average of 4-8 pounds of lead.
- Monitor glass contains about 20% lead by weight. When this glass is crushed in a landfill to recover components, the lead leaches into the soil.

(Source: [www.environment.about.com](http://www.environment.about.com))

- Negative impacts of inappropriate technologies have been reflected in an international increase in litigation related to workers’ or consumer compensation, payment of clean-up costs and consumer boycotts as a result of technology use: ‘For example in the US, the total corporate liability costs for asbestos-related diseases has been an estimated \$30 billion, far more than the product ever earned its manufacturers’ (Griffiths, 2003). Pharmaceutical and chemical settlements have become global, as the Dow Corning silicon breast implants case which affected over 100,000 women illustrates.

- Application of technologies developed to reduce labor costs and improve profitability have in many instances led to deskilling or impersonalizing job content. For example, some innovations in software are making work more onerous and closely controlled. In his book, *The New Ruthless Economy*, Simon Head describes how computer programs manage the assembly of automobiles, telephone centers, and personal services like health care, even dictating the amount of time doctors may spend with a patient (Head 2003).
- Where employment is created as a result of technology to enhance efficiencies and cut costs, frequently jobs created are unskilled and badly paid. In some cases, Third World labor conditions have been recreated in the developed world. “Between 1980 and 2002, while the population in the US grew by 23.9 percent, the number of employed Americans rose by 37.4 percent. However, the principle reason is that millions of women have not only joined the workforce but have helped to expand its size. The same is true of teenagers, immigrants” (Baumol, Blinder and Wolff, 2003) -- and, it seems likely, seniors financially unable to retire. While companies like General Motors, Kodak, Xerox, and Dupont cut skilled staff numbers by around 50% from 1981 to 2003, McDonald’s staff grew 250% and Walmart grew by 4700% (Hacker, p 39). The typical new job at Wal-Mart and McDonald’s pays about one-third of the wages of jobs that no longer exist.

## **The impact of corporate growth values on scientific research**

Quality research cannot be undertaken without adequate funding. Moreover, products must find their way to the marketplace to deliver benefits to end-users. This argues for well-managed links between science and the corporations which provide channels to markets. It is becoming increasingly clear that the ability of RTOs to manage the tension between market impacts of commercialization efforts and objective science is critical to maintaining their public trust, and, in all probability, their public funding. Increasingly, criticisms are emerging that suggest RTOs have not, in all instances, managed that tension well. Most common criticisms focus on the issues below:

- Close ties with industry have undesirable impacts on scientific objectivity: In most cases, industry funding for research is given for projects selected by the industry donor. In his book, *Science in the Private Interest*, Krimsky argues that the pharmaceutical industry in particular offers many examples of how methodological bias has arisen in research concerning market products, including some that have proved to be undesirable to health or to human well-being. He cites articles published in 2000 in the *New England Journal of Medicine* and the *Journal of the American Medical Association* that were critical of the biases and conflicts of interest among medical professions in their relationships with patients and the pharmaceutical industry which marketed prescription drugs.
- There is increased evidence of undesirable impacts on education of close ties with industry: Growth, and attracting funding from private sources to offset costs of competing for students and industry funding, is increasingly emphasized in knowledge organisations like universities. In universities, these links are at least perceived as contributing to compromised educational

standards. Former Harvard President Derek Bok elaborates on how examples of personal gain impact the organizations employing those researchers, stating that: 'Universities have paid a price for industry support through excessive secrecy, periodic exposes of public conflict and corporate efforts to manipulate or suppress research results.' (Bok p 77). Krinsky has studied relationships between US university staff and commercial organisation, and he found that:

- According to a 1990 study, 31% of professors in the biology department of MIT admitted to formal ties to biotechnology companies, and 20% of biotechnology scientists Stanford and Harvard had dual affiliations.
  - According to a 1992 study, 47% of 800 US biotechnology faculty members consult to industry, and 25% received industry grants for their work and 8% owned equity in biotechnology companies.
  - In a 1997 study, of 1,396 high impact scientific journals, only 16% had conflict of interest policies requiring authors to disclose relationships with potential corporate sponsors of their research (Krinsky (pp 110-111)).
- Academic standards are not promoted by the use of market measures applied to university courses in university-developed to attract students: Hamilton comments that 'The effectiveness' of university courses is now measured by the earning potential of graduates and little importance is attached to the extent to which education can transform students into well-developed human beings who have a deeper understanding of themselves, their societies and the world.' (p. 221.)
  - There is a growing perception that investment in public good and basic research has declined. We lack unambiguous definitions of what comprises public good research, making it difficult to measure whether or not an actual decline in investment has occurred. However, government stipulations in many countries for evidence of a path to market for outcomes of publicly funded research seem inconsistent with efforts to stimulate higher levels of public good research. Furthermore, personal gain and researcher commitments may mitigate against having time available for public good research (Krinsky p 180). Similarly, an emphasis on commercial outcomes for research activities suggests that some basic research activities that deliver new paradigms of innovation may have been replaced by incremental R&D to deliver short-term profitability benefits.

## **Strategic marketing activities to support sustainable innovation activities of RTOs**

There are of course many good examples of social benefits that have arisen out of the interaction between science and industry. Certainly the release of drugs beneficial to human health vastly outnumbers those with detrimental effects. However, the perception of science as unbiased and objective is clearly under threat in some quarters.

Many RTOs are working diligently to combine innovation, social responsibility, and corporate sustainability. The past two decades have given us some insights into both

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the positive and negative impacts of science and technology commercialisation, and contributed much to our understand of how we may apply strategic marketing principles to planning research activities in RTOs. Strategic marketing insights and new models of technology marketing are emerging that can contribute much to planning of, and investment in, the scientific research activities of RTOs. A few examples follow derived from the author’s experience with international R&D providers.

**Triple bottom line impact assessment for research projects: Balancing ‘Profit, People, & Planet’**

Most enterprises aim to achieve a profitable ‘bottom line’ in their financial reporting by ensuring revenue outweighs costs. A “triple bottom line analysis” is a relatively new approach that goes beyond looking for ways to achieve higher profits to examining potential social and environmental impacts of a given technology or research activity. By integrating methodologies from social and natural sciences with the aim of “increasing research relevance in human affairs, developing marketing knowledge and social learning, RTO’s may apply ‘triple bottom line’ (‘Profit, People, Planet’) indicators to R&D project planning and assessments.

Methodologically complex, ‘triple bottom line’ analyses aim to integrate and quantify value assessments of impacts in unlike domains. It is relatively easy to estimate the potential economic impact of, for example, a biocontrol campaign using aquatic insects to control weeds in vulnerable waterways, in terms of R&D and execution costs, but the environmental impacts of introducing a new insect population are much more difficult to assess, and the social impacts, which may include impacts on employment of farm workers, tourists, and others, even more difficult. Nevertheless, speaking very simplistically, the aim is to map positive and negative impacts of a technology or research program (as in the table below), assign an appropriate weighting to relevant factors and where possible associate an economic equivalent to those factor, eventually determining a final score which should reflect the costs and benefits of pursuing the research activity.

Environmental	Economic	Social
<b><i>BENEFITS (POSITIVE IMPACTS)</i></b>		
Positive impact A	Positive impact A	Positive impact A
Positive impact B	Positive impact B	Positive impact B
Positive impact C	Positive impact C	Positive impact C
<b><i>COSTS (NEGATIVE IMPACTS AND INVESTMENT COSTS)</i></b>		
Negative impact A	R&D costs	Negative impact A
Negative impact B	Implementation costs	Negative impact B
Negative impact C	Negative impact A	Negative impact C
	Negative impact B	
	Negative impact C	

Such analyses clearly pose great methodological challenges, but they may lead to projects that offer greater benefits to society than projects analysed for economic impact only.

Projects underpinned by triple bottom line analysis are of increasing interest to experts attempting to define a rigorous and practicable methodology. For example, one SEI project currently being undertaken within CSIRO, Australia's premier R&D agency, (for more information, see [www.csiro.au](http://www.csiro.au) in the 'Emerging science' section) after preliminary triple bottom line analysis, is a 'Greener Cities: Healthier People' project. The project will bring together a multidisciplinary team of social and natural scientists to examine the role green space in cities play in healthy urban communities to improve our understanding of how best to either design or revitalize urban areas for preventative public health.

One study (Kington 2003) of such projects in CSIRO concluded that these were generally characterised by the following benefits:

- Potential policy impacts
- Increased researcher satisfaction
- Greater potential to change entrenched negative habits
- Increased relevance
- Greater involvement with stakeholders
- Greater value added

The study recognized, however, that the same projects, when compared with typical CSIRO R&D projects, were also characterized by:

- Methodological complexity
- Increased cost and time to complete
- Benefits which were sometimes difficult to measure
- Poor 'fit' with organisation rewards systems
- Some conflict with entrenched scientific norms

Space available here does not permit a review of triple bottom line analysis by RTO's; however, it seems likely that the disadvantages Kington identified may be consistent with initiating novel approaches in a traditional science culture and that they may become less relevant as experience with the approach grows. Certainly, the approach is of great interest to RTOs seeking support for public good research activities and outcomes.

### **Social marketing of sustainable technologies**

Socially responsible technologies often require behavioural changes. The principles of marketing may also be successfully applied to taking sustainable technologies to market, via what has come to be termed 'social marketing'.

'Social marketing is the use of marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify, or abandon a behavior for the benefit of individuals, groups, or society as a whole' (Kotler, Roberto, Lee, p 5) . Unlike commercial marketing, the primary beneficiary of the social marketing program is the individual, group, or society as a whole.

Abraham Maslow's well-known hierarchy of needs has shown us that people value highly community involvement, self-actualisation, good relationships, and they

desired to be perceived as good community citizens. According to Maslow (1987), an individual tries to satisfy the most basic needs (physiological and safety needs) first. When that need is satisfied, it no longer serves as a motivator, and the individual moves on to the next levels (to social and esteem needs and finally to self-actualisation needs). It is possible that, having satisfied (or even over-satisfied) basic physiological and safety needs, society is ready to move on to satisfying community, societal, and self-developmental needs.



In terms of the familiar 4 P's of marketing, let us look again at a hypothetical substitution of aquatic insects as part of a biocontrol program against waterweeds threatening waterways.

- **Product** is desired behavior change and the benefits associated with that behavior. For example, the campaign may focus on the substitution by farmers of insects for inexpensive chemical pesticides to clean up irrigation water.
- **Price** is the cost to the target audience of adopting the behavior. The target audience is selected on basis of prevalence of the problem (eg their proximity to and control of waterways); our ability to reach them (eg their membership in farmers' groups we may address); and their readiness for change (eg the presence of innovators or early adopters who may be opinion leaders for what is known to be a highly skeptical target group). We need to identify what the target audience will have to 'give up' to determine what could be offered or said that will (a) decrease actual or perceived costs of the desired behavior and/or (b) increase actual or perceived benefits of the desired behavior. Price in this instance may include higher financial costs of the new process and the convenience of using a known methodology. Perceived costs must be managed, for example, by securing a government subsidy for agricultural bioremediation for target farmers or by brokering organic accreditation which may bring future profits.
- **Place:** is where the target audience will perform the behavior, acquire any tangible objects, receive any services associated with the campaign, which in this case, will be largely in the field.

- **Promotion:** comprises (a) what we will say to influence our target audience to know, believe and do what we have established in our objectives (b) media channels where our messages will appear. In this instance, a successful combination of messages might communicate good community citizenship benefits through contributions to the environment, industry benefits through contributing to a perceived ‘clean, green’ agricultural industry, and individual economic benefits of lucrative organic farming.

If the objective of the marketing activities of an RTO is to help secure funding for research into impacts of insects introduced into a new environment, similar approaches will support the case for eventual uptake by farmers.

### **Participation in major collaboration public good research initiatives**

Many RTO’s are increasingly involved in collaborations with other large R&D organisation on developing solutions to major international social issues facing humankind. Some of these collaborations have strong potential to attract support from aid organizations like the World Bank. Examples include the Global Research Alliance initiated by South Africa’s CSIR as well as CSIRO’s ambitious national Flagship Projects. CSIRO’s National Research Flagships initiatives are large-scale science partnerships in action. They integrate, direct and focus scientific resources on issues of urgent national significance. For example, one of the Flagships, Preventative Health, aims to improve the health and well-being of Australians and to save \$2 billion in annual direct health costs by 2020 through the prevention and early detection of chronic diseases.

Strategic marketing activities may support such large collaborations through technology impact analysis and by helping assess and map the capabilities of contributory organisations. (For more information on capability mapping and technology impact assessments, see the second edition of Marketing Scientific Results and Services: a Toolkit, available in late 2004).

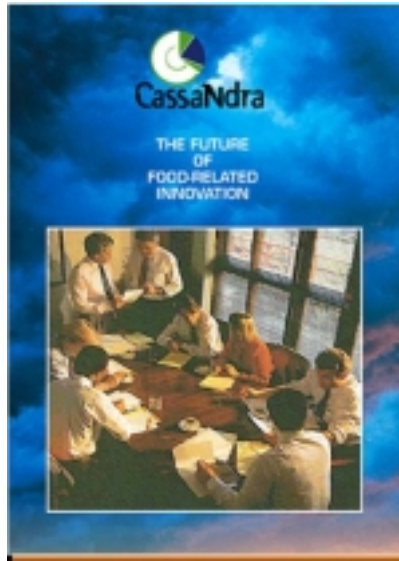
### **Community consultation (eg Project Cassandra)**

Increasingly, the existing or intended end users of technologies and other research outcomes are demanding a say in the planning of, and investment in research that may impact their lives. CSIRO has undertaken wide-ranging community consultation into consumer attitudes to proposed research activities, for example via a foresighting exercise on food-related innovation called ‘Project Cassandra’. The project, which was managed for CSIRO by the author, involved over 70 industry experts in focus groups and over 1000 members of the community, randomly sampled, who filled in comprehensive surveys regarding possible future food-related innovations, rating them for desirability or undesirability.

The consumer attitude research was conducted via a 23 page survey (response rate 48.7% of 2400 consumers) the results of which indicated, among many other findings that:

- Innovations that provided health, social or environmental benefits were ‘highly desirable’; innovations that provided food safety benefits were essential, and the responsibility for resourcing these benefits lay with the food industry.

- Respondents resoundingly disapproved of innovations that undermined the social function of family meals, incorporated marketing ‘features’ in products (eg ‘scratch and sniff’ packaging), or restricted consumer choice (eg auto-reordering) (Marcure 1999).



Project Cassandra provided input into CSIRO’s strategic planning activities for the 2000-2003 period. Perhaps equally importantly, the exercise was highly popular, not only with industry and the media, (sixty print and broadcast interviews in two weeks) but also, and importantly, with participants (some of whom thanked CSIRO for the opportunity to fill out a 23-page questionnaire)!

### **New models of identifying and qualifying prospective investors**

Internationally, interest is increasing in ‘ethical investing’ from investors and funds managers. Research suggests that the often more careful investigation of corporate activities by these investors can lead to identifying performance equal or superior to that of conventional investments.

Europe has been the genesis of many lucrative new sustainable industries that would qualify as ‘ethical investments’: For example, “it is well known that in the 1970s Germany managed to capture the lion’s share of the huge world market in pollution-control equipment because it adopted much tougher restrictions on domestic pollution than the rest of the world....[and] it is now difficult to dislodge German pollution-control firms from markets throughout the world” (Hamilton, p 178-179).

RTOs may consider developing research and business strategies that incorporate ethical and sustainable investment criteria. Equally, they may consider applying such criteria to selection of preferred partners for research collaboration and/or technology commercialization. Relevant strategic marketing activities include research to identify prospective investors in a given research activities, and impact analyses to align potential investors with research providers aiming to deliver the types of benefits those investors wish to support.

### **Conclusion**

These few examples suggest a few ways strategic marketing activities may help RTOs respond to the challenges of sustainable innovation. The benefits of using methodologies derived from strategic technology marketing to help manager the industry-RTO interaction, although not all immediate, are immense. Such contributions help RTO's assume a leadership role in selective technology development. Drawing from IP portfolios underpinned by triple bottom line assessments, RTOs may help change the perception that science is directed and biased by its links to industry.

RTOs may not only contribute to alleviating some environmental challenges but they may also help address the growing sense of social alienation in many societies that a simplistic focus on growth and profit appears to engender. RTOs may also help their chosen industry partners create new industries and/or avoid litigation or other forms of consumer technology backlash, promoting corporate longevity.

By taking on the challenges of sustainable innovation, RTOs can continue to inspire the trust and support they have enjoyed from various sectors of society. If we look back to the poem that opens this article, and to quote a young CSIRO microbiologist, Dr Lisa Szabo: *'I hope we may be caterpillar enough for the challenge!'*

## References:

- Appelbaum, Eileen, Annette Bernhardt, and Richard J Murnane, *Low-Wage America: how Employers are Reshaping Opportunity in the Workplace*, Russel Sage Foundation, 2003.
- Baumol, William, Alan Blinder and Edward Wolff, *Downsizing in America: Reality, Causes and Consequences*, Russell Sage Foundation, 2003.
- Bojo, Jan and Payton Deeks, "Biodiversity, Technology Transfer, and Capacity Building: A World Bank Perspective", *Innovation Management, Policy and Practice*, vol 6, no 2, August 2004 (i.p.), e-Content Pty Ltd, Maleny, Qld.
- Bok, Derek, *Universities in the Marketplace: The Commercialisation of Higher Education*, Princeton University Press, Princeton, NJ, 2003.
- Cummings, Robert A and Richard Eckersley, "The Australian Unity Wellbeing Index, Centre of Quality of Life, Deakin University, Melbourne, 2002.
- Gravani, Robert and Gilbert Leveille, "Managing Threats to Scientific Credibility", *Food Technology*, vol 58:1, January 2004, pp 39-24.
- Griffiths, Andrew, "Corporate Sustainability and Innovation," *Innovation Management, Policy and Practice*, Vol 6, no 2, August 2004 (i.p.), e-Content Pty Ltd, Maleny, Qld.
- Hacker, Andrew, 'The Underworld of Work', *New York Review of Books*, 12 February 2004, pp. 38-41.
- Hamilton, Clive, *Growth Fetish*, Allen & Unwin, Sydney, 2003.
- Head, Simon, *The New Ruthless Economy: Work and Power in the Digital Age*, Century Foundation, Oxford University Press, Oxford, 2003.
- Horton, Richard, "The Dawn of McScience," *New York Review of Books*, 11 March 2004, pp 7-9
- Kington, Elizabeth, Social and Economic Integration: "A Review of Contemporary Best Practice in CSIRO", Australian Research Centre for Water in Society, CSIRO, March 2003.
- Kotler, Philip, Ned Roberto and Nancy Lee, *Social Marketing: Improving the Quality of Life*, Sage Publications Inc, Thousand Oaks, CA, 2003.
- Krimsky, Sheldon, *Science in the Private Interest*, Rowman & Littlefield Publishers, Inc, Lanham, Maryland, 2003
- Marcure, Judy, "The Future of Food-related Innovation", CSIRO Report, 1999.
- Marcure, Judy, and Bruce Davies, *Marketing Scientific Results and Services: A Toolkit*, Calibre Communications, Sydney, Australia, 2004.
- Maslow, Abraham H., 'Hierarchy of Needs', *Motivation and Personality*, Harper & Row, New York, 1987.
- Rausser, Gordon, 'Public/Private Alliances, *AgBioForum*, April 1999. (Download at: [www.cnr.berkeley.edu/srr/rausser/publicprivate\\_alliances.htm](http://www.cnr.berkeley.edu/srr/rausser/publicprivate_alliances.htm).)

Roberts, Elizabeth and Elias Amidon (eds), *Earth Prayers from Around the World*,  
HarperSanFrancisco, 1991.

Tiffen, Rodney, *How Australia Compares*, i.p, quoted in *Sydney Morning Herald*, 1-2 May 2004.

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