

The technological age? It's the people, stupid

There are many economically and technologically viable opportunities to alleviate Australia's national problems of the environment, health and infrastructure. While we argue about a few percentage points of Kyoto targets, energy efficiency measures could dramatically reduce energy consumption and hence emissions, paid for by the savings in energy costs. We can address land and water issues while still increasing our agricultural output. Our health system groans and creaks, but better use of Information Technology could reduce administrative costs and improve patient care.

Such claims are often dismissed as technological utopianism. But while there are no panaceas, there are identifiable gains going begging, trapped in political stalemate, as the pressures of competing interest groups make our national decision-making processes turn excruciatingly slowly. Indeed, pushing technical solutions harder only seems to bog them down further – like wheel spinning in a mudpatch.

Counter intuitively, developing technological solutions effectively requires a much stronger focus on the 'people issues' than on the technology itself. It is our likes, dislikes, aspirations and behaviours that matter. Successful marketers of consumer technology have long understood this – they base their products on detailed research into consumer preferences, rather than coming up with a widget and expecting people to beat a path to their door. They effectively allow the consumer to decide what they want.

Public policymakers and special interest groups from both business and the environment movement should take a leaf from their book – however much it might seem repugnant to 'drink from the same brook' as those who have driven the mass consumerism that gave rise to many of the problems in the first place.

But they should not ignore the growing body of evidence that investing more in understanding community behaviour and allowing individuals to make their own choices about how to address a problem is a better way. Trying to persuade sceptical audiences to adopt an expert or ideological solution is what creates the political stalemates that have descended on many public-good issues in Australia.

Genuinely involving people and giving them choice is fundamentally a more democratic approach to decision-making. It takes time and humility on the part of those who believe that they already know what needs to be done. But ultimately, it proves more efficient and effective in the long run.

A tale of inaction

Examples of our inability to deploy available knowledge effectively on public interest issues abound. While some technical solutions may be excluded for reasons of cost, the fact is that there are many cases where the barriers have nothing to do with cost or the technology. The following review shows just a few on offer.

Water and land

Water and land use have come to prominence in state and national elections as long term salinity problems caused by decades of inappropriate land and water management bite on the economies of rural Australia. The issues have been brought into even sharper focus by the extended dry of the past decade. Although some regions have come out of drought, the memory is still strong enough for water to have an unprecedented priority on the national agenda.

There is no doubt that the problem is immense. But there is also no doubt that applying existing knowledge and technologies could dramatically reduce water wastage, giving both economic and environmental benefits. Indeed, leading researchers believe that better deployment of available technologies and expertise in land and water management could double overall production while reducing the amount of land under production by half, and using significantly less water¹.

If total production can be doubled, as our best scientists believe, this gain could more than pay for the retirement of degraded farming land, which offers minimal returns to the owners. Indeed, attempting to farm degraded land sometimes locks them into a poverty trap. An alternative would be to pay them to manage the land for environmental outcomes, as part of a sustainable land and water management regime that would ensure higher productivity overall. The agriculture, welfare and service support payments already received by marginal farmers could be repackaged as a payment for the marginal landowners providing environmental management services to the rest of the community.

But retiring land from production is a vexed issue, even when the economics is positive. Those whose land is to be retired resist change because it is the only livelihood they know or they do not know how to create an alternative living, even when generously compensated.

Governments' reluctance to confront such a difficult issue is demonstrated in Wimmera-Mallee pipeline. The pipeline is a very low tech way of saving a large amount of water: it will save as much as 70% of irrigation water currently wasted through seepage and evaporation. The water saved will be available to either boost environmental flows in the river system or for other purposes. But a large part of the cost of the pipeline will go to service farms that are economically and environmentally unsustainable. Rather than confront this political and social issue, Governments have preferred to wear the additional cost of putting the pipeline through to all current users. They have avoided the real issue and ensured that the issue will stay with us needlessly for generations to come.

Similar conundrums confront the Australian Government's \$1.4 billion National Action Plan for Salinity and Water Quality and the \$3 billion Natural Heritage Trust. Both were intended to take a long-term view to tackling environmental issues and have had some real wins, including through programs such as the competitive water market and salinity credits trading.

However, the National Audit Office has observed that the roll-out of solutions has been stalled in many instances by political differences between the various levels of

Government and lobbying by interest groups. This is a polite way of saying that the fear and trepidation about the reaction of farmers is paralysing decision-making processes.

Energy and Greenhouse

Greenhouse Effect is another seemingly intractable issue confronting us. The increasing frequency of weather disasters is now at the point where many insurers have withdrawn from areas such as Northern Australia because of what they perceive as an unacceptable risk of cyclones.

There is still an argument about whether individual events are natural climate variations or attributable to the Greenhouse Effect. But even mainstream business and the anti-Kyoto Governments of George Bush and John Howard do not deny that scientific evidence demands a response to manage the risk of serious impacts from Greenhouse. As Lord Browne, the then Chairman of BP said over eight years ago, ‘..the time to consider the policy dimension of climate change is not when the link between greenhouse gases and climate change is conclusively proven, but when the possibility cannot be discounted and is taken seriously by the Society of which we are part. We at BP have reached that point.’²

The extreme sensitivity about reducing Greenhouse emissions comes from the traditional link between energy use and economic growth. This link has persisted because there has been little technical change in the efficiency of power generation over the past century. The emergence of new technologies such as ceramic fuel cells over the coming decades may radically alter this balance and usher in the much vaunted hydrogen economy as the successor to the fossil fuel based industrial age.

But while we wait for this possible revolution there are now many steps that could be taken to dramatically reduce energy consumption and hence reduce emissions. As with water, many of these are economically feasible.

An energy audit on a typical business will usually achieve a 15-20% reduction in energy use and the cost of the audit and new equipment will pay for itself in 3 years. BP, for example, achieved an absolute reduction in its greenhouse emissions worldwide of 18% between 1998 and 2001, reaching its target nine years ahead of schedule, and saving \$650 million from estimated outlay of \$20 million³. Du Pont achieved a 67% reduction in greenhouse gas emissions since 1990, including a 9% reduction in energy use below 1990 levels, despite a 35% increase in production, saving \$2 billion⁴.

Our built environment, which is responsible for up to 50% of electricity usage, can also be made significantly more efficient. A Californian State Government study of buildings designed for superior environmental performance found that an average 2% increase in design costs yields life cycle savings of 20% of total construction costs -- more than ten times the initial investment. Indeed, the State of California estimates that it has achieved energy savings of 200 MW per year through stricter building codes.

In Australia, the potential to achieve both environmental and economic gains in the built environment was demonstrated by a seminal study commissioned by the Building Commission of Victoria and which underpinned the introduction of Victoria's 5 star minimum energy performance in new housing developments. Detailed economic modelling showed reductions of up to 40% in greenhouse emissions from new homes, and a boost to Gross State Product of \$600 million would flow from the introduction of 5 star regulation. Moreover, the new regulations will shift resources out of the capital intensive power sector and into the labour intensive building industry to fund the better design and operation of homes. Even greater economic and environmental gains are expected from the commercial building sector.

Governments world-wide have targeted energy efficiency because it is, in the parlance, 'low hanging fruit' for greenhouse reduction. But despite the impressive and demonstrable gains achieved by market leaders, generally these programs struggle to maintain momentum.

As with water, part of the reason is that energy is still a relatively cheap resource. Its impact on business profitability or household accounts is relatively low – a typical CBD office spends less than one per cent of its budget on power.⁵ With management time stretched in modern enterprises, these opportunities simply fall-off the agenda.

The other reason often has to do with the design of the programs aimed at accelerating uptake of energy efficient technologies and practices. Too little attention is paid to the 'people issues': for example, a Californian energy utility spent a vast amount on an information campaign to encourage installation of insulation in low income houses, but had very little success. The Utility focused on the potential long run savings households could make in heating and cooling costs as well as comfort, but few took up their offer. In the end, it was estimated that it would have been much cheaper to have installed the insulation for free⁶.

The reason the information campaign failed was that the low income people distrusted information provided by large organisations – the campaign should have targeted some trusted local leaders and allowed the community itself to spread the word.

In Australia, State and Federal Governments have also provided little leadership by example. While one arm of Government advocates energy efficiency to private industry, other Government Departments are allowed to pay little more than lip service to energy efficient or environmentally sound practices in their own facilities.

There have been some individual projects by Government that demonstrate sound economic and environmental practices, but no Government has yet used its full power in the marketplace to demand that all of its own activities and, equally importantly, those of suppliers, be based on practices that optimise environmental and economic outcomes. In the property sector alone, the public sector accounts for 15%⁷ of the market and could play a decisive leadership role. If Governments do not implement these measures themselves, how credible will be their exhortations to others.

Health

Health is set to become the major source of expenditure growth worldwide because of aging populations in all developed nations. The Australian Treasury's recent Intergenerational Report estimated that Federal Government Health Care expenditure would double from 4% to 8% of GDP by 2041.

Often, this increased cost is attributed to the cost of new drugs. However, US studies have found that a \$US1 increase in spending on drugs **reduced** hospital care expenditures by \$US3.65⁸. In any event, no-one would seriously suggest that we stop looking for cures to diseases.

But there is an avenue to reduce costs that is too little explored. This is how we organise and administer our health care system. It is extraordinary in today's age that for most non bulk billed customers the Medicare rebate is still manually processed. The technology has long existed whereby the Medicare card could be linked to a patient's account, but is used in only a small number of medical practices. Instead of a patient paying the doctor and then spending additional time and resources travelling to the Medicare Office to have their claims processed manually, the Medicare card could with a simple swipe by the Doctor's receptionist pay the rebate direct to the doctor and debit the patient's account for the gap.

The saving in administration costs in the Medicare shopfronts alone, to say nothing of the savings in time and effort on the part of the public, could be redeployed to the health system.

Preventative health programs, which apply existing knowledge about the cure and prevention of disease, have also been shown to offer a major payback. But Government decision-making, and cost trading between state and federal Governments often prevents these benefits from going forward. The reason – a different Department's budget wears the cost, whereas another Department gets the benefit.

Our health staff are also poorly deployed. Nurses are grossly overworked and in increasingly short supply as the young shy away from such a demanding vocation. But some of the stress is unnecessary. Estimates of the amount of time nurses spend on paper-based administration of patient records are as high as 35-45%⁹.

Yet highly cost effective, clinically safe systems could automate much of the on-ward record collection and management. Unlike proposals for a national database of patient records, privacy protection by automating the records management of individual hospitals is relatively easy. The time freed up could go into patient care, reduce the stress on nurses and alleviate the shortages.

All of these measures are available now and are well known by the health community but have not progressed beyond 'promising trials'. The problem is not in the availability of knowledge and technology but in the inertia and tentativeness of decision-making processes. In the case of nurses, the problem is certainly exacerbated by management fashion to maximise the number of nurses on the ward, rather than maximising the amount of nursing time devoted to patient care. It is easy

to have a high nurse-patient ratio but it is a meaningless figure if the nurses are performing administrative tasks rather than caring for patients.

Is there a better way?

Confronted with the slow speed of our political processes many interest groups call for decisive leadership by Government. Unfortunately, the decisive leadership is usually called for by one particular interest group to further its own viewpoint, rather than to find the best collective outcome.

Political stalemate is often results – the environment movement has been locked in trench warfare with the timber industry for decades with little resolution in prospect. Proposal for dialogue from both sides have actually been little more than an offer to show the other side the error of their ways, rather than an exercise in collective decision-making.

But are we simply captive to political processes to resolve clashes of values between different sectors of the community, which must work themselves through in their own good time. Or are there processes that could produce a more effective result?

Adapting the principles applied by highly successful marketing professionals to change consumer behaviour to the process of achieving community consensus could be a good start. Professional marketers spend significant time and resources on market research before they launch new products. This is so that they can understand their customers needs and preferences and design their product accordingly, rather than acting on their own needs and ambitions.

The technologists behind mobile phones did not foresee the appeal of the technology for SMS messaging. They were more concerned with ramping up power and 3G devices that have ended up with relatively little. The relatively low tech SMS text messaging was chosen by consumers as the preferred option and those companies that detected this reaped the benefits.

Successful marketers also understand that the greater the innovation in the product or technological change involved, the greater the resources needed to bring it to market. The rule of thumb is that marketing costs will be seven times those of the product development cost. The resources required to influence consumer buying behaviour clearly greatly exceed those required to develop the technologies themselves.

Improving community decision making and building consensus is even more complex. But they have been shown to respond to an investment of time and resources in understanding community aspirations and empowering communities to make their own decisions.

Rural extension programs that promote sustainable farming practices offering economic and environmental gains, for example, have led to successes on individual farms. However, they have often only managed to reach 10-20% of the target farming communities¹⁰. However, pilot programs that involve rural communities in

identifying problems and designing solutions have found that with a little extra effort during the formative stages, local communities actually embrace change.

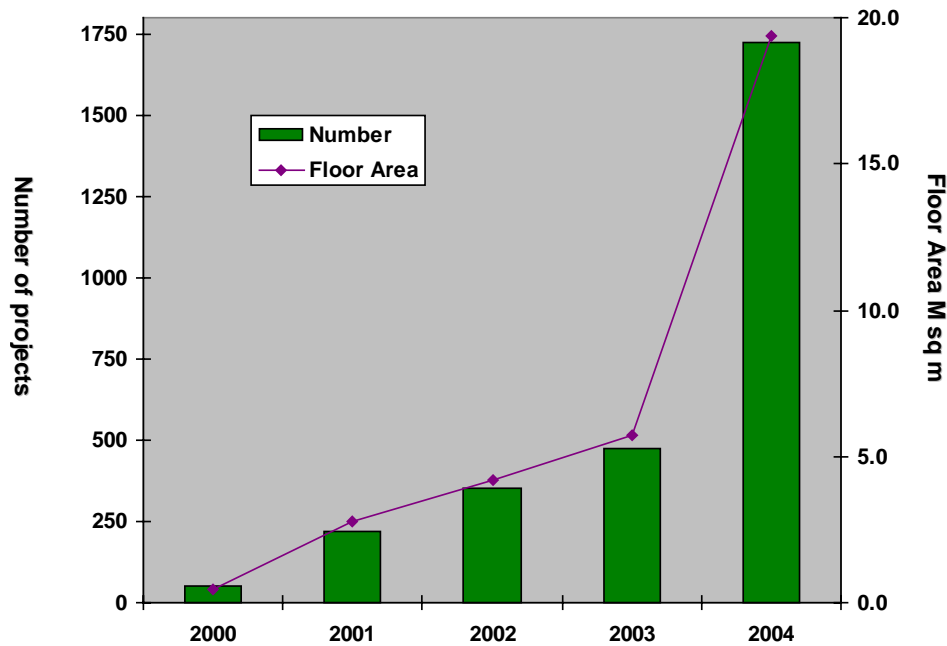
The key is that the communities should be helped to ‘...understand the social, ecological and business systems in which they operate. They will then be motivated to acquire the skills and technologies that will enable them to manage the action path they have chosen’¹¹. The adoption of better economic and environmental practices is then accelerated significantly. What’s more, local knowledge often improves the solution developed by outside experts.

This highly participatory and democratic approach is a major challenge to experts, authorities and interest groups, who have to leave decisions to communities that do not necessarily adopt the ideal solution they advocate, just as consumers do not always choose the product design a business might initially believe is best for them. In the pilot programs with rural communities described above, this proved very difficult for those who had strong views on what should be done – the challenge to egos and ideologies is significant.

But progress is certainly better than the political stalemate that results from different interest groups trying to ram through their preferred outcome. Instead, a process of continuous improvement is initiated that becomes systematic, sustainable and self-perpetuating.

This process of accelerating better economic and environmental outcomes on national issues may not involve consensus building. It may in fact require the unleashing of competitive forces. A good example of this is in the US building sector, where ‘green’ building technologies had struggled to penetrate mainstream building. Exhortations of the economic and environmental benefits of these technologies to builders and consumers had been falling on largely deaf ears since the 1980s. A stronger regulatory approach was politically unacceptable in the US and efforts to introduce one were stalled.

The US Green Building Council took a different approach. It invested significant resources in developing a system that rated buildings in terms of environmental performance, known as LEED¹². This tapped into the naturally competitive behaviours of both consumers and builders. No-one forced the builders to start building greener buildings, but the LEED system was marketed actively to consumers and builders as a simple means of comparing environmental performance of different buildings. Consumer demand found an easy outlet and builders began to compete against each other. Market uptake accelerated dramatically, capturing as much as 7 % of the market in only 3-4 years, as shown in the graph below.



LEED® New Construction Registered Projects¹³

As LEED uptake grows, the compelling business case has become ever more apparent and the market appears to be in the early stages of a dramatic transformation. In three years, LEED has achieved more than the political campaign for a regulatory approach achieved in 20 years. The success, ironically is also making regulatory action more politically acceptable, as governments are increasingly impressed by the demonstrations of market success.

In Australia, the success of LEED has led to the formation of an Australian Green Building Council and the development of a local building ESD rating scheme, known as Green Star.

The future: a more democratic decision-making

Australia needs to work at our political, economic and business processes. If they are failing to empower us to take advantage of knowledge and opportunities now, how will they deal with both the opportunities and risks that will emerge in coming decades from developments in sciences such as genetics, neurobiology, information science and nanotechnology?

Jared Diamond, in his recent book, *Collapse*¹⁴, has even nominated Australia as the bellwether of mankind's environmental problems. We also face the daunting challenge to our health care system posed by an aging population.

There are, as even Diamond concedes, some positive developments. There is even room for optimism.. As described above, we can address land and water issues while still increasing our agricultural output. There are many energy efficiency measures that could dramatically reduce energy consumption and hence greenhouse emissions,

paid for by the savings in energy costs. We can save money in Health Administration and return the savings into patient care.

Our public policymakers will be able to apply these solutions faster and with more impact, if they take a leaf out of successful marketers and invest the upfront resources in the design of solutions that use the behavioural norms of affected groups to accelerate the roll-out of solutions. This will, in fact, lead to a far greater level of democracy in our decision-making: experts will still have a vital input to make, but the path to implementation will be very different: it will be self-sustaining and systematic.

Ironically, as the pace of technological change accelerates, the old saying applies even more – it's the people, stupid. Recognising this now will enable us to make major gains on national issues. It will also prepare us for the tsunami of new knowledge that is heading our way in so many fields.

¹ Dr Malcolm Campbell, Sustainable Agriculture Institute (Victoria), presentation to the Institution of Engineers Regional Solutions Forum, Horsham, 2003.

² As quoted in *Less is More*, the Climate Group, Surrey, UK. 2003

³ Ibid

⁴ Ibid

⁵ See figures in City of Melbourne, Toward Zero Net Emissions Plan. Melbourne 2002

⁶ Doug McKenzie-Moore and William Smith,. *Fostering Sustainable Behaviour*. New Society Publishers, Canada, 1999.

⁷ Australian Greenhouse Office estimate, as contained in a presentation by Gene McGlynn, Assistant Secretary, Energy Efficiency and Community Branch, Australian Greenhouse Office, International Business Developments workshop, Melbourne, February, 2005

⁸ National Institutes of Health (2000) *The Benefits of Medical Research & the Role of the NIH*, NIH, May. P15

⁹ A preliminary survey of nursing and medical staff by Psychotechnic Pty Ltd, September 2004

¹⁰ See the Report Developing Social Capability: dynamic community engagement, Dept of Primary Industries, Melbourne 2003.

¹¹ Ibid.

¹² Leadership in Energy and Environmental Design, US Green Building Council. www.usgbc.org

¹³ Figures provided by A Bernheim, presentation to International Business Developments: sustainable Building. A Workshop organised by the Building Commission, Melbourne 2005.

¹⁴ Diamond, J *Collapse*. 2005