

WASTE MINIMISATION & RECYCLING A PERFORMANCE REVIEW

By

Paul F. Howlett
Partner, Wright Corporate Strategy
President Waste Management Association of Australia

For

IIR Conferences

8th Annual Waste Minimisation & Recycling Conference
Sydney, NSW
24 – 25 June 1998

ABSTRACT

Recycling is in a mess. Industry and government alike have failed in their respective duties to deliver a system that is clearly being demanded and supported by the consumers. We have a willing payer for recycling, but we have been unable to agree on how to enable them to pay. Vested interests keep the debate on recycling confined to narrow views of parts of the picture. Governments should not be the leaders in market driven economies. It is time for industry to stand up and lead. Sustainability thinking and philosophies hold the keys to the way forward. But are the steps and determination beyond the capacity of our industry and governments?

1. INTRODUCTION

In the implementation of waste minimisation regulations, there has been a serious drift away from the underlying fundamentals on which the legislation is based.

The legislation is based on the universally recognised need to reduce the rate at which we are consuming non-renewable natural resources. Recycling is accepted as one key measure that can help achieve this objective.

However, a political spin was inserted into the implementation of the legislation, which translated the underlying need into a mandated target of reducing waste to landfill by 50%, 60% and 100% respectively in various jurisdictions around the country.

This is an end of pipe measure that is supposed to create a driver for reduced non-renewable resource consumption.

In the process, the reduction in waste to landfill has become the driver, and led to the banning of disposal of certain commodities to landfill – eg green waste and tires. The ban has no direct relationship to reducing non-renewable resource consumption; however, it potentially floods recycling markets with commodities that the markets cannot absorb.

There has been precious little effort expended in developing new markets for recyclables or to stimulate market demand.

The vast majority of efforts thus far have been driven by the politically inspired waste to landfill reduction leading to a concerted supply push with a naive expectation that if the supply side was flush – the demand side would follow.

Recycling has now reached a disastrous situation where both local government and waste contractors are losing significant sums of money.

Despite the obvious need for markets as a key to balancing the current imbalance, there is still an inordinate amount of focus on recycling collection and commodity sorting costs. Yet, this is the one area where the quantum of savings to be generated is small in comparison with impacts that can be implemented if the focus of effort was on the markets.

Waste management efforts must revert to the fundamental driver – we need to reduce our rate of consumption of non-renewable resources, that is we need to increase the efficiency with which the economy operates in converting resources into saleable products.

2. INDUSTRY'S ROLE

Recycling is here to stay as a major part of our industrial and cultural landscape. And those who don't support this reality will be corporate casualties in a very short space of time. The reasons behind this are fundamentally two-fold:-

- first, we are consuming non-renewable resources at an unsustainable rate, and when we combine this with the rapid growth in population, the already unsustainable situation just shortens the time frame within which disaster approaches, and
- second, is the fact that a vast majority of the community support recycling - irrespective of whether they fully understand the whys and wherefores, they still want it because they feel that it is right.

The challenge for industry is to work out the solutions. And I mean industry - not government, not the greens, not the community of consumers. With the globalisation of business and commerce, industry is becoming the true world leader. The borders of industry transcend political borders, they transcend geographical borders. The communications tools of industry today place many organisations beyond the reach of most governments and most regulators. And this will become more common, more wide spread and business will become less controlled by governments in the next millennium.

Government attempts to rectify the problem have resulted in:-

- over supply of resources beyond the capacity of markets to absorb them,
- bans on commodities for disposal,
- increased levies on disposal,
- propping up unworkable systems with cash injections.

These are not effective or sustainable solutions. Whilst governments repeatedly maintain that their role does not include market interventions, they still meddle and they invariably unbalance the markets.

And the vast majority of the blame for this must lie at the feet of industry.

So in the area of resource utilisation and environment, it must be industry that develops the solutions, it must be industry that takes the lead, for increasingly governments are effectively powerless to bring about the necessary changes on the necessary scale to achieve the necessary outcomes.

But to lead in the implementation of these changes industry needs to understand what the demands of this new era of doing business will mean. With the growth beyond the reach of governments comes answerability to an increasingly demanding consuming public. The control and feedback mechanism for industry will change from one of government reactive regulation, to one of consumer demand and consumer choice.

Industry is entering a new paradigm for doing business, with new rules and new ways of doing business. The short term decision making horizons of the late 20th century will rapidly vanish and industry will be faced with the challenges of sustainability.

Recycling is a classic example of where sustainability thinking and acting are essential. The majority of industry has failed to grasp the opportunity because they have failed to understand the signs. For those companies that take on the sustainability challenge there is excellent competitive advantage to be gained over those companies that continue to remain blind to the evolution of corporate and societal cultures.

3. SUSTAINABILITY

For companies to be sustainable there will be seven key dimensions of their life and activity that they must transform and manage. The same seven dimensions were present in the ways of doing business in the closing decades of this century, but they have become refocussed, redirected and sharpened in a battle to derive sustainable advantage in rapidly evolving markets.

The seven dimensions are¹:-

FOCUS	OLD PARADIGM	NEW PARADIGM
Markets	Compliance	→ Competition
Values	Hard	→ Soft
Transparency	Closed	→ Open
Life-cycle Technology	Product	→ Function
Partnerships	Subversion	→ Symbiosis
Time	Wider	→ Longer
Corporate Governance	Exclusive	→ Inclusive

These are the dimensions needed for dealing with the environmental revolutions that business is and will increasingly face. And yet none of the old hackneyed terms of environmentalists are there - population, global warming, biodiversity, diminishing resources. However, these dimensions of business harbour the most deep underlying driving forces of much of what we see on the surface expressed as environmental damage and social unrest. These seven dimensions will ultimately make or break our chances of achieving sustainability.

Let me briefly touch on each of these seven dimensions to give you the full picture.

¹ *Cannibals With Forks: The Triple Bottom Line of 21st Century Business*, John Elkington, Lapstone 1997

3.1 MARKETS

Industry is being driven by competition through the markets. Growing numbers of companies are finding themselves challenged about aspects of their performance by customer and financial markets alike.

In response to these pressures business will shift from using competition as an excuse not to address sustainability issues, to using sustainability as part of the business case for action and investment. Sustainability is not a new form of religion, instead it is a new form of value which society will demand and which successful businesses will deliver through transformed markets.

3.2 VALUES

Most business people, indeed most people, take values as a given, if they think about them at all. Yet few understand the power of changes in values. Shifts in values can be among the most powerful influences faced by business leaders and politicians alike.

The transition from hard commercial values to softer sustainability values does not mean that life gets any easier for business. A values-based opposition to a company can rapidly turn apparently spongy resistance into concrete resolution overnight.

The business of business is no longer about the creation of economic value alone, it must now include the nurturing and management of social and ethical values as well.

3.3 TRANSPARENCY

Industry is finding that increasingly its thinking, priorities, commitments and activities are under intense scrutiny. Some forms of disclosure by companies will remain voluntary, but others will evolve with little direct involvement from most companies.

The demand for transparency is being driven by the confluence of new value systems and new information technology systems. Companies that have previously sought to operate via the "keep our heads down" approach are finding that they and their entire value chain of suppliers and customers are increasingly operating in a "global goldfish bowl" and cannot avoid the penetrating inquiries of customers and markets.

4.4 LIFE-CYCLE TECHNOLOGY

This is being driven by – and in turn is driving – the push for greater transparency. There is a shift from companies focusing on the acceptability of their products at point of sale, to their total performance from cradle to cradle.

Early environmentalists were often anti-technology, as well as being anti-industry, anti-growth and anti-profit. But over the last two decades technology has become a tool for

environmentalists as much as it is a tool for industry. New forms of technology can and will highlight company activities, processes and performances all along the value chain, in a rapid manner and without warning.

3.5 PARTNERSHIPS

There will be an increasing rate with which partnerships and alliances are formed between what would historically be described as sworn enemies. New forms of partnering will spring up between companies, private and public sector agencies and between companies and non-government organisations (NGOs) such as environmental groups. Indeed, partnerships of this latter class are likely to drive the competitive processes of life-cycle technology development and the growth in operating transparency.

These partnerships will not eliminate tensions and conflicts. It is likely that simultaneous collaboration and challenge may proceed between groups, increasing the degree of complexities that need to be managed.

It is essential for industry to learn that in areas where there are challenges, it is fool hardy to assume that they can be handled alone.

3.6 TIME

We now have telecommunications systems that bring us the news as it is breaking, and financial transactions that go on 24 hours a day around the world. Technology has delivered us a widening of the time horizon. However, the challenge of sustainability is to move in the direction of longer time horizons.

The emerging agenda requires us to think across decades, generations, and in some instances centuries.

The mistake of today is to believe that time scales dictated by the financial markets are the only reality. In fact these are only “bubble” environments, which history has shown occasionally burst. And unless we can look across wide-time markets with a long-time perspective, we will not succeed with sustainability.

3.7 CORPORATE GOVERNANCE

In questioning many of the policies, processes and actions of companies, the community and markets are questioning the corporate boards of companies. As yet, the sustainability of companies is not being questioned at the board level, but this is only a step away.

There is already a very serious debate running on corporate governance, and this will soon be opened wider with the question of sustainability.

Each of these seven dimensions has a significant influence on the recovery of resources and recycling. As solutions are sought for the recycling dilemma, it will be essential that we regularly revert back to a review of the applicability of these key dimensions.

4. VALUE SYSTEMS

To better understand the elements of the recycling system and possible sources for solutions, it is helpful to construct value chains. A value system describing the resource recovery sector, from the consumer through to the end markets can be structured along the lines of the generic corporate value chain used by Porter². In this instance the concept encompasses several organisations and hence the term value system is used. The following table shows that model.

PORTER'S GENERIC VALUE CHAIN ELEMENTS		ANALOGOUS ELEMENT FOR THE RESOURCE RECOVERY SECTOR
Primary Activities	Inbound Logistics	Resource Sorting & Collection: source separate, prepare for collection, collect & transport
	Operations	Resource Processing: stockpile, sort, store, process, beneficiate
	Outbound Logistics	Resource Packaging & Transport: prepare to ship, dispatch to buyer/disposal
	Marketing & Sales	Resource Sales & Marketing: market resources, execute sales
	Service	Resource Market Development: create new market demand
Support Activities	Firm Infrastructure	Management System: over-arching systems of management including regulatory regimes
	Human Resource Management	People: education, training, links with other skill bases, cultural change
	Technology Development	Technology Development: enabling technologies to permit the Primary Activities to proceed
	Procurement	Exchange Protocols: rules and procedures to manage the inter-relationships between Primary Activities

The value system describes activities and functions – not proponents, or organisations. It clearly separates out the individual activities that add value to the resources as they pass along the linkages.

The following table outlines some of the players in each of the activity elements, the contribution that each element makes and the current status of each role.

² **Competitive Advantage**, Michael E. Porter, The Free Press 1985

ACTIVITY ELEMENT	TYPICAL PLAYERS	CONTRIBUTION	STATUS
Resource Sorting & Collecting	<ul style="list-style-type: none"> • Domestic consumers • Industrial consumers • Councils • Collection contractors 	<ul style="list-style-type: none"> - Separation at source of recoverable resources from wastes - within the constraints of the bins etc provided - Collection and transport to processing plants and transfer stations - Education of domestic consumers on recycling practices 	<ul style="list-style-type: none"> ➤ C&I resource resource spe between colle consumers ➤ C&I consume ➤ Contractual a Councils and inadequate ar ➤ Domestic con participation r awareness of ➤ Councils end behalf of dom
Resource Processing	<ul style="list-style-type: none"> • MRF operators • Transfer station operators 	<ul style="list-style-type: none"> - Value addition through beneficiation, sorting, and removal of contaminants - Processing of resources – e.g. composting - Preparation for waste disposal 	<ul style="list-style-type: none"> ➤ MRF process major buyers ➤ MRFs lack fle product strear ➤ Many process supply (envirc responding to
Resource Packaging & Transport	<ul style="list-style-type: none"> • MRF operators • Transporters 	<ul style="list-style-type: none"> - Transport to waste disposal sites - Bailing and packaging for re-manufacture - Transport to purchasers 	<ul style="list-style-type: none"> ➤ Not seen as a
Resource Sales & Marketing	<ul style="list-style-type: none"> • MRF operators • Brokers • Collection contractors • Buyers of recovered resources 	<ul style="list-style-type: none"> - Selling recovered resources to manufacturers and re-processors 	<ul style="list-style-type: none"> ➤ Selling is reac

ACTIVITY ELEMENT	TYPICAL PLAYERS	CONTRIBUTION	STATUS
Resource Market Development	<ul style="list-style-type: none"> • nil 	<ul style="list-style-type: none"> - nil 	<ul style="list-style-type: none"> ➤ Very little con to develop ne that could cre recovered res markets
Exchange Protocols	<ul style="list-style-type: none"> • Buyers of recovered resources • Commodity brokers 	<ul style="list-style-type: none"> - Traders have an interest in agreed quality parameters 	<ul style="list-style-type: none"> ➤ Quality stand: and generally international p ➤ No transpare standards ➤ Current stand
Technology Development	<ul style="list-style-type: none"> • Equipment suppliers • MRF operators • Collection contractors • Manufacturers 	<ul style="list-style-type: none"> - Design of systems in response to market demands concerning contamination and quality 	<ul style="list-style-type: none"> ➤ Tends to be r ➤ Technology ir all market opt ➤ Technology is value system
People	<ul style="list-style-type: none"> • All participants 	<ul style="list-style-type: none"> - Skills and human resources to execute tasks 	<ul style="list-style-type: none"> ➤ Poor integrati ➤ Little interacti
Management System	<ul style="list-style-type: none"> • EPA • Waste Boards 	<ul style="list-style-type: none"> - Coordination - Policy - Planning 	<ul style="list-style-type: none"> ➤ Currently lack ➤ Environmenta pulled

The value system described above, covers only that portion of the total system that is commonly investigated when recycling is examined. As such it fails to adequately describe the full value system, and fails to demonstrate the role of life-cycle approaches to resource management.

Whilst offering a useful micro-analysis, it becomes misleading in that analysis often leads to attempts to find solutions from only within the system. Typically recycling is criticised and people look for answers in areas such as:-

- collection technologies,
- collection costs,
- MRF operations,
- secondary markets etc,

all of which are contributing elements in the breakdown of the recycling system, but none represent the underlying systemic problems for recycling. Rectifying these issues will contribute to developing solutions for recycling, but without systems solutions, there will be no sustainable future for recycling.

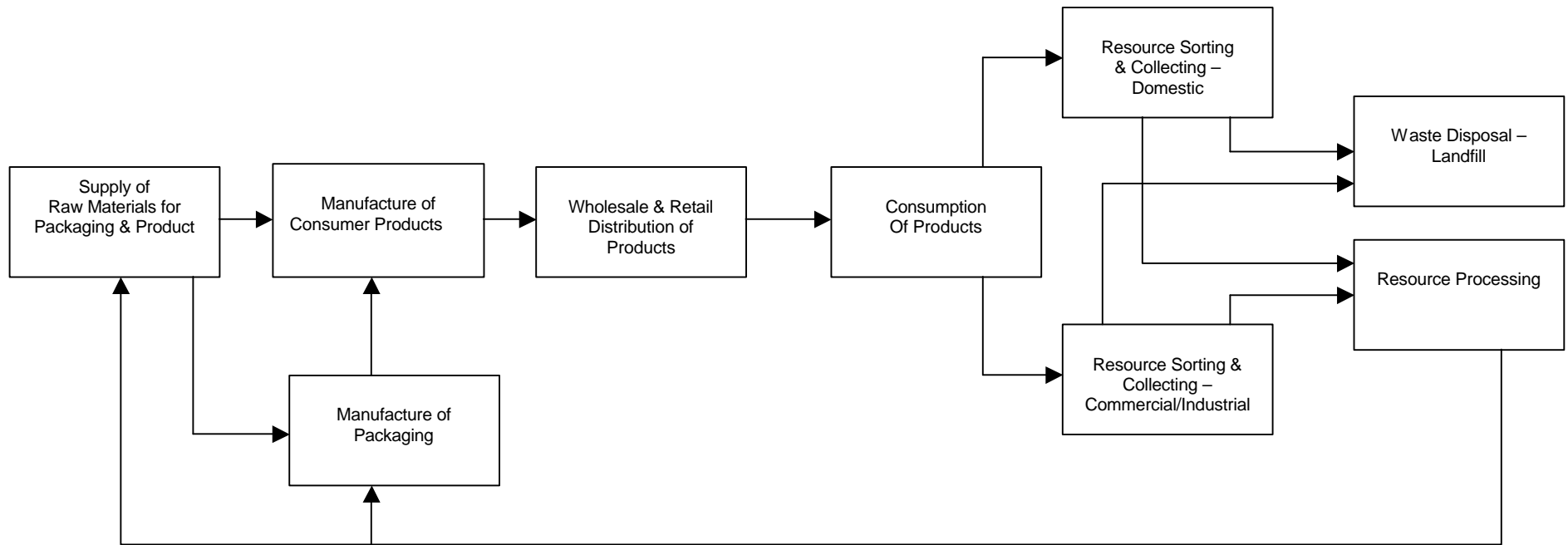
To appreciate the larger picture, it is necessary to enlarge the value system back from the consumer to the sources of the raw materials from which the consumer products are manufactured. Through analysis of this total value system it may be possible to uncover some solutions, and identify some of the sustainability issues that need to be addressed by industry in taking the lead role.

Figure 1. shows the complete recovered resources system, from raw materials, through the consumers and back to the raw materials – cradle to cradle.

Key issues that come to light in the review of this system include:-

- the suppliers of the raw materials for the consumer products and consumable goods have little or no on-going involvement in their commodities until recovered resources are returned at the end of the cycle;
- manufacturers of consumer products have a major influence on the raw materials used in their products and the packaging, but are not generally involved in the recycling debate;
- along the value system, from raw materials to consumer, value is added at each step;
- the consumer acts a “breaker” in the value system extracting value and leaving the remaining resources with a negative value;
- post consumer, the players try to re-build value in the resources without input from either the raw materials suppliers or the consumer goods manufacturers – both of whom stand to benefit from the recovered resources.

Figure 1: Cradle to Cradle for Recovered Resources



5. WHERE TO NOW?

Markets – the companies which open new markets will achieve a competitive edge. New markets will not just lie in extensions of existing markets. Innovation will be the key.

In electronics recycling research in Europe, the prize outcome emerging appears to be the opportunity for electrical equipment manufacturers to cease supporting products with spare parts manufacture after some 5 years on the markets, and allow the recovery sector to provide the spare parts supply. New and creative approaches to markets must be industry led and industry financed.

Values – it is plainly clear that the consumers have indicated that they want recovery of resources and are prepared to pay. Thus far, industry and government have been unable to decide how they will pay.

We have a willing payer, yet we are unable to agree on how to get them to pay. Surely the answer must come from industry? If industry does not read the signs correctly from the consumers, then consumer backlash will be vented through political action that will deliver less than satisfactory outcomes.

Transparency – consumers want to see that their values are being reflected in industry policy. Still today, too many companies hide behind barricades of silence or public relations screens. By embracing the consumers in the development of solutions to recycling, industry will build-up a significant level of good will and collaboration.

Life-cycle Technology – this is becoming the most glaring gap in the whole system. Industry is not taking a life-cycle approach to resource management. The value system breaks down at the consumer, and little ownership from manufacturers penetrates beyond this point. Industry must adopt life-cycle approaches to the conservation of non-renewable resources.

Partnerships – these will come from within and without the square. The value system offers excellent opportunities for partnerships along its entire length, including alliances between parties that don't have one-to-one commercial trading relationships.

Time – this is as critical with commodity markets and the contracts entered into by the parties, as it is with the horizons over which planning takes place.

Once again industry must be the leader in this area. Governments are, by their very nature, short term bodies with corresponding short term time horizons. If industry is to plan for sustainability, then industry must get out of the short cycle political time-warp.

Corporate Governance – this is a key to the future for all companies and must go well beyond the current fiscal levels of consideration.