

Chapter 1 The value of longevity: Product quality and sustainable consumption

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Abstract: Each year millions of consumer goods, from furniture and household appliances to clothing and footwear, are discarded. Many are thrown away prematurely, obsolete: functional but outmoded and unloved, technologically outdated but not upgradable, faulty but irreparable. Often they have been designed for life-spans far shorter than those technically possible.

As affluence has increased and durables are increasingly regarded as disposable there is clear evidence to suggest that throughput of goods in affluent, industrialised societies is unsustainable. Recently, however, signs of change have emerged, prompted by interest in resource efficiency and demands for waste reduction, and there is growing interest in increasing product lifetimes.

In this exploratory paper an argument is proposed that in order to reduce the throughput of resources consumption in industrialised economies needs to be characterised by fewer, but better quality, consumer goods. A strategic shift in markets for consumer goods is necessary, from quantity to quality, in order to advance progress towards sustainable consumption.

Currently many consumer goods are not designed for durability because of a need to meet predetermined price points; this is reflected in ever-declining prices but sub-optimal life spans. Given that longer lasting goods are liable to be more expensive and that even households in relatively affluent countries have limited incomes, vital questions are raised concerning the process - and prospect - of such change. These are identified in this paper by exploring markets with reference to the share accounted for premium quality items and other recent research, including a recent government study of product lifetimes, in order to assess the likelihood of a shift towards higher quality, longer lasting, products.

1 Introduction

Throughout the industrialised world millions of consumer goods, from furniture and household appliances to clothing and footwear, are discarded each year. Many are thrown away prematurely, obsolete: functional but outmoded and unloved, technologically outdated but not upgradable, faulty but irreparable. Others are designed for life-spans far shorter than those technically possible. As affluence has increased, durables have increasingly been regarded as disposable.

This exploratory paper addresses the argument that in order to slow the present throughput of resources there is a need for consumption to be characterised by fewer, but better quality, consumer goods. It explores the possibility that a strategic shift in markets, both for consumer durables and semi-durables, from quantity to quality, is necessary in order to advance progress towards sustainable consumption.

2 Resource efficiency through product longevity

There is clear evidence that the throughput of goods in affluent, industrialised societies is unsustainable. The most recent *Living Planet* report by the World Wide Fund for Nature (2012) indicates that high-income countries make disproportionate demands on the planet and are primarily responsible for the fact that, at current levels of consumption, the Earth needs 1.5 years to produce and replenish the natural resources consumed each single year.

Recently, however, signs of change have emerged, prompted by interest in resource efficiency and demands for waste reduction. A recent report by the United Nations Environment Programme (2011), for example, has explored the need for decoupling, “using less resources per unit of economic output and reducing the environmental impact of any resources that are used or economic activities that are undertaken” (UNEP, 2011, p. xiii). Jackson (2009) has questioned whether relative decoupling, when resource consumption does not increase as fast as economic growth, will result in the necessary reduction in overall resource use. Instead, absolute decoupling may be required, when “the growth rate of resource productivity is faster than the growth rate of the economy” (UNEP, 2011, p. 5), which represents a profound challenge.

The European Union’s *Road Map to a Resource Efficient Europe* suggests that if we carry on using resources at the current rate, by 2050, on aggregate the equivalent of more than two planets will be needed to sustain us and “the aspirations of many for a better quality of life will not be achieved.” Among other measures, the Road Map commits the European Commission to assessing the introduction of durability and reusability criteria for key products. One mechanism will be the Directive on energy-using products (2009/125/EC), on which attention was initially focussed on energy consumption but is shifting to product lifetimes. The Directive refers to the possibility of ‘extension of lifetime as expressed through: minimum guaranteed lifetime, minimum time for availability of spare parts, modularity, upgradeability, reparability’. In addition, the Framework Directive on Waste (2008/98/EC), which requires member states to publish waste reduction plans by the end of 2013, refers explicitly to extending product lifetimes as one means of reducing waste.

This latter requirement appears to have revived interest in product lifetimes from the UK Government, which responded through its environment department, Defra, by commissioning a major study of product lifetimes (ERM, 2011). This concluded that while there may be rare occasions when it is appropriate to discard inefficient old vehicles and appliances, in general longer lasting products offer environmental benefits. The report made several other significant observations. First, it suggested that the present dominant business model encourages short lifetimes. This was not so much an accusation of ‘planned obsolescence’ but, rather, a recognition that the system within which companies operate does not incentivise them to maintain, still less increase, product lifetimes. Second, it noted that consumer attitudes vary according to the product, indicating that there should not be one single ‘catch all’ approach to influencing consumer behaviour. Third, consumers appear to be motivated by value more than sustainability, suggesting that it may be wiser to justify increased longevity to consumers on the basis of personal economic gain than the social benefit of waste reduction.

Following publication of this research Defra produced a review of waste policy which included several assertions that signalled a new approach, notably that the Government wants

‘people to see the benefits of extending the life of things they own and use, and for them to think about repair and re-use before considering replacing them’ (Defra, 2011a, p.25) and that it is looking for businesses to ‘design and manufacture goods that are more efficient, durable, repairable and recyclable’ (Defra, 2011a, p.27).

An obvious gain from increased longevity is the reduction in waste, but another takes the form reduced carbon emissions resulting from the use of fossil fuels in their production: all manufactured products contain embedded carbon. While the British Government has often claimed to have reduced greenhouse gas emissions since 1990, it is increasingly recognised that the international protocol of production-based measures gives a false impression. Consumption-based measures expose a rather different picture: while official statistics indicate that emissions fell by 15% between 1990 and 2005, on a consumption basis they went up by around 19% (Helm et al., 2007).

Government funded bodies such as Waste and Resources Action Programme (WRAP) have consequently taken a greater interest in product lifetimes. WRAP (2009) has concluded that increasing resource efficiency is an important means of reducing carbon emissions and that one of the most promising strategies to achieve this end is to increase product lifetimes. It has proposed measures to increase product durability, including reuse and refurbishment, and to ensure that they are used by households for their full useful life, and has launched a series of initiatives that include the development of an online product life optimisation tool.

3 Obsolescence and recession

A review of the many reasons why many products often have sub-optimal lifetimes from an environmental perspective is beyond the scope of this paper. An early study of product lifetimes in the context of the consumer boom of the 1950s was made in the influential *The Waste Makers* (Packard, 1963). More recently Slade (2006) has produced a history of obsolescence from an American perspective, while an edited collection by Cooper (2010) draws together recent research demonstrating the complex range of causes. Nor will the paper address research undertaken by economists on whether there is any connection between the degree of competition in markets and product life-spans, which has been criticised for unrealistic theoretical assumptions (Waldman, 2003). Instead, its aim is to contrast the traditional economic policy of promoting growth by encouraging consumption, notably through product replacement, with that of seeking economic prosperity by improving product quality in the form of increased longevity.

Increased efforts to encourage product replacement are often made during recessionary times. As the financial crisis gained a hold on industrial economies from 2008, one of the main responses of governments on both sides of the Atlantic was to directly address product lifetimes: the introduction of financial incentives to promote the replacement of cars over a certain age, often described as car scrappage schemes or, in the USA, ‘cash for clunkers’. Some countries proposed similar schemes for other products, such as boilers and refrigerators. Car scrappage schemes were promoted on the basis of environmental benefits, although whether this is valid is questionable: modern cars have more efficient engines but the potential reductions in fuel consumption are often offset by additional weight.

Proposing increased consumption during recessionary times was not a new approach and sits within the logic of conventional neoclassical economics. Throughout much of the post-war era increased public sector spending has been advocated as a means of providing a short term stimulus to the economy in such circumstances. Neither was seeking directly to curtail the life of functioning products. The first known reference to planned obsolescence was made in 1932 in a pamphlet in which the author proposed that the Government should assign a ‘lease of life’ to products and during times of unemployment require people to turn them in to agencies in return for financial assistance to enable them purchase replacements (Slade, 2006). Advertising executive George Frederick, writing in 1928, urged ‘progressive

obsolescence', suggesting that people should be 'buying for up-to-dateness, efficiency and style ... rather than simply for the last ounce of use' (cited in Slade, 2006, p. 58). This, of course, was a different era: environmental impacts were not of concern and resource efficiency only considered insofar as it reduced costs.

In contemporary times continued failure to link economic and environmental goals in public policy lies at the heart of the lack of progress towards sustainable consumption. This failure was exemplified in a speech by Britain's Chancellor of the Exchequer George Osborne in 2011 in which he promised his party members that 'we're not going to save the planet by putting our country out of business.' Clearly ecological modernization, the idea that environmental policies help to strengthen the economy, rather than harm it, is not universally accepted. Most politicians still adopt a largely indiscriminate approach to increased consumption as the solution to economic recession.

Twenty years have passed since Agenda 21, the plan of action derived from the first Earth Summit, declared that 'the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries' and yet the dominant economic model in such nations remains largely unchanged. The concept of a circular economy is increasingly recognised, but the proposition that there is a need for the consumption of new goods to slow down remains politically unpalatable. Many industry proponents of 'green growth' support the idea of a circular economy precisely because it allows products to be regularly replaced as long as materials are recycled.

Green growth represents incremental change and whether it has the potential to enable the 80-95% reduction in greenhouse gas emission required by 2050 is highly uncertain. In industrialised countries economic growth depends on replacement purchases because markets for most consumer goods are saturated, and competition is consequently driven by a need to encourage people who already own products to want to change them. Aside from technological advance, the primary strategy for encouraging such replacement has been periodic changes in style (Whiteley, 1987). Replacement has also been made easier by price reductions made possible by improving production efficiency, including relocating manufacturing to low cost nations such as China. Anecdotal evidence suggests that 'efficiency' has also been achieved by compromising product quality. Many goods are designed to meet 'price points', which is liable result in incremental reductions in quality. This is possible in part because producers do not have to reveal the design life of products and consumers have not demanded otherwise, despite perceiving a decline in product longevity (Defra, 2011b).

It appears that environmental sustainability demands increased product lifetimes. As longer lasting goods are liable to be more expensive, however, and households have limited incomes, vital questions are raised concerning the process - and prospect - of such change.

4 Quality and Longevity

Understanding of issues relating to product lifetimes has increased in recent times. Publications by Chapman (2005) on emotionally durable design and Mugge et al. (2010) on user attachment have explored consumers' relationships with their possession. Vezzoli and Manzini (2008) have compiled a checklist of design principles for product life optimisation. Cooper (2010) has presented a comprehensive overview of recent debate, while Guiltinan (2009) has drawn up a research agenda.

Explanations for obsolescence, justifications for increasing product lifetimes and proposals for change may be principled and praiseworthy, but are they likely to lead to change? If, on the basis of evidence cited above, most people do not associate longevity with sustainability, perhaps the goal of increased product lifetimes is more likely to be achieved indirectly, through a strategy to increase the market share of higher quality, premium range

products? In other words, if a throwaway society has arisen in part because consumers buy too many goods of low quality that prove to be short lived, being poorly designed and made, might it be possible to reverse this by addressing quality rather than sustainability?

4.1 Sustainability through longevity

Items designed for longevity remain available even in the throwaway culture typical of industrialised countries. In the case of washing machines, for example, UK households may, in theory, purchase from a German manufacturer, Miele, who state in their marketing material that their products are designed to last for 20 years. Yet that company only attracts a very small share of the market. While ordinary products may achieve a long lifetime, those designed specifically for longevity are more likely to do so and these are typically found in a relatively small 'premium quality' market segment.

Most consumers appear to have rather lower expectations of product longevity than Miele. A recent study suggested that households typically expect to replace washing machines after just 5-7 years (Defra, 2011b). The environmental significance of this wide gap between how long people generally expect products to last and 'best practice' is considerable. Earlier research found that the average age of the 2.5 million washing machines, dishwashers and tumble driers discarded in Britain each year was 9 years, which created 170,000 tonnes of waste (Cooper and Mayers, 2000). This could eventually be reduced by 60,000 tonnes annually if average life-spans were to increase by 50%, from 9 years to 14 years.

What if such an increase was applied to other consumer durables - not only electrical and electronic products, but vehicles, furniture and carpets, and also to semi-durables such as clothing and footwear. For most types of product there is normally a relatively small, premium range characterised by high quality. Consumers' expectations are such that they are generally designed and manufactured to last. Whether initial purchasers are more likely to keep high quality products for their full design life than 'value' or 'mainstream' ranges is unknown, although such goods will retain value and if unwanted are more likely to be reused than discarded. What if the market share of premium range products increased and, as a consequence, average product lifetimes rose? Consumers in Britain probably purchase and discard in excess of 10m tonnes of consumer durables and semi-durables annually. The potential reduction in waste and embedded carbon if average product life spans were to increase by, say, 50% is clearly substantial.

4.2 Does quality always imply longevity?

A strategy to increase product lifetimes indirectly, by addressing quality, immediately raises an obvious question: to what extent does quality necessarily imply longevity?

Consumers define quality in different ways and its meaning will vary according to the type of product. In general such products will be positioned as a 'premium range' and be expected to be robust in terms of materials or component parts and the outcome of high quality manufacture and assembly. The extent of variation in 'build quality' will nonetheless vary between different types of product and other aspects of quality, such as design aesthetics, the range of features or product complexity, exclusivity (e.g. through customisation) and brand name may characterise premium range products. Each may or may not imply longevity: aesthetic effect is sometimes achieved at the expense of functionality, for example, while individually customised products may prove less reliable than those mass produced. This suggests that any attempt to promote increased longevity through an increase in the share of premium range products will need to be accompanied by measures to ensure that product durability is demonstrated clearly.

4.3 Why does inadequate quality still prevail?

Early critics of planned obsolescence often referred to 'shoddy goods' in the belief that during the post-war consumer boom the quality of many products had declined. In more

recent times, even though industrialised countries have become far more affluent over the past 50 years, many low quality goods continue to be produced.

One explanation is that many consumers are either unwilling or unable to pay for premium quality goods. Declining expectations of product longevity may be associated with purchasing priorities: people may prefer to purchase a large number of new goods and services frequently than buy a small number of high quality items occasionally. They may, for example, prioritise overseas travel or innovative electronic goods such as tablet computers over premium quality products for the home. They may consider fashion important, even if aware that ‘fast fashion’ items are often not well made. Or they may be mindful of technological advance and not want to be locked into owning products that will soon become outmoded.

Such consumers are unwilling to purchase high quality products because they have other priorities. Others are willing, but unable. There is now evidence that it has become the norm in industrialised countries for increased affluence to be accompanied by a widening distribution of household incomes: over the past two decades the gap between rich and poor has widened in 17 out of 22 OECD countries (OECD, 2011). Relatively poor households are obviously less able to purchase high quality goods. The success of many ‘discount retailers’ is evidence of significant demand for products sold largely on the basis of price, often with little regard for quality.

It would be wrong, however, to limit such explanations to consumer attitudes and behaviour: producers are not merely responsive to consumer demand but deliberately influence market conditions. It is necessary, then, to consider the role of manufacturers and retailers and, specifically, the business models that they use. Stahel (2010), for example, has argued that in the saturated markets typical of industrialised countries there is an inherent commercial logic behind the production of goods that are unduly short lived.

4.4 Is there unrealised potential for an upward shift in quality?

Assessing the potential for an increase in the market share of higher quality products would demand a much more extensive, product-specific study than possible in this paper, but some preliminary insights into the present situation may be gained from market research. In this section, three key product sectors in the UK are briefly reviewed.

4.4.1 *Electrical goods*

The market for electrical goods, estimated as worth £21bn, is in decline (MINTEL, 2011a). Within the many product categories intrinsic build quality is variable and this is reflected in price: the cost of a kitchen toaster, for example, can vary at least tenfold for similar functionality. Quality may be judged by style and features as much as build quality. Thus among manufacturers the success of Apple has largely been based on design aesthetics and features rather than durability and reliability. The sector is very price-sensitive and the dominant retailer, Dixons, has been criticised for its focus on selling extended warranties when it could be argued that quality should be automatically reflected in longer guarantees. It may prove easier to promote a shift in the market for stable products such as kitchen appliances than those subject to technological advance such as portable electronic products, which consumers expect to replace regularly, although greater effort could be made to enable upgradeability as an aspect of quality.

4.4.2 *Furniture*

In the market for furniture, estimated at around £10bn, products such as upholstered furniture and beds are regularly replaced compared with dining furniture and cabinets. Large specialist companies such as IKEA, DFS and Dreams account for over 60% of the market and often use aggressive pricing strategies. Market research suggests that around 37% of consumers regard ‘ranges that offer lasting quality’ as an important factor when choosing

furniture compared with 44% who favour 'generous discounts and promotion' (MINTEL, 2010). Multi-channel shopping is becoming more popular; this raises concerns about the implications for quality as although internet images are increasingly sophisticated, the inability of online customers to touch products weakens their ability to judge quality. The prospect of a shift in the market towards higher quality is uncertain; furniture is no longer perceived as an investment for life.

4.4.3 *Clothing*

The value of the clothing market has been estimated at around £51bn and it is expected to continue an upward trend (MINTEL, 2011b). Around a fifth of the market is accounted for by 'fast fashion', with market growth driven by young consumers. The success of Primark, Matalan, H&M and supermarkets such as ASDA has reflected price sensitivity among consumers, although the emergence of Superdry, Jack Wills and Hollister and the continued success of Marks and Spencer suggest that quality thresholds can still be influential. Clothing is often discarded for reasons other than wear and tear and creating emotional attachment through good design is as important as quality of fabric and manufacture. There has been growth of recent interest in organic and fair trade clothing and an increase in intrinsic quality is possible, particularly if consumers become disenchanted with fast fashion.

5 Achieving longevity through quality

What is necessary for there to be an increase in the market share accounted for by goods of high quality? In this final section, four measures are proposed.

5.1 **Raise design awareness**

In order to judge the intrinsic quality of products, consumers need to understand them. Yet many people know little about how their possessions have been made and how they work; consumers have increasingly become passive recipients of goods. Deindustrialisation has had a significant impact: manual skills have been lost as manufacturing has relocated overseas. Moreover, consumers are discouraged from opening electrical and electronic products, perhaps out of genuine concern for health and safety but also to prevent user repairs. Likewise with vehicles: owners are less able to undertake repairs because of changes in design, notably an increase in electronics and sealed components, linked to the highly profitable nature of vehicle servicing. The present generation also has fewer of the skills that would enable them to repair or alter clothing.

Consumers need to be encouraged to engage with products and be supplied with the necessary product information to facilitate genuine choice. In Britain, however, home economics education has long been in decline and design and technology education is under threat. Unless such trends are reversed, the potential benefits of higher quality products, which will need to be maintained over a prolonged period, are unlikely to be attained.

5.2 **Make quality transparent**

An increase in the market share of high quality products will be more likely if consumers have certainty that higher prices reflect greater quality rather than some other product attribute. At present, evidence suggests that prices do not necessarily provide a good indication of the level of quality (Rao, 2005). As a consequence, consumers can often only make an 'educated guess' about quality.

Increased transparency in the market is required. There are various means by which quality in the form of intrinsic durability may be communicated to consumers, including the use of standards (voluntary or mandatory), length of guarantee and life span labelling. The latter is not straightforward because consumers use products with different degrees of intensity and care, but various approaches are possible depending on the type of product (Cooper and Christer, 2010).

5.3 Promote value for money, not the cheapest price

It was suggested earlier that pressure to reduce prices over a prolonged period may have eroded product quality. If quality is to improve, one challenge facing companies, particularly retailers that operate across different market segments, is their pricing model. For example, the cost of premium range products is sometimes disproportionately high in relation to production costs. While evidence on companies' pricing policy is rarely accessible, it is apparent that margins are not always added at a fixed rate across all product types.

If competition in future is to be based on value for money in relation to service life rather than on cheapness, companies may need to rethink the validity of applying 'price points' and use of marketing practices such as discounting. Just as some retailers now indicate the typical annual running cost of household appliances, it may need to become the norm for customers to be able to judge products by cost per unit of service provided rather than price.

5.4 Introduce new business models

Businesses need to make a profit to survive and a shift from quantity to quality clearly threatens overall sales volumes. This suggests that new business models are needed such that revenue can be maintained with fewer sales. This is not unrealistic: a pricing strategy whereby greater margins compensate for relatively low overall sales has allowed many manufacturers of premium range goods to thrive. Another possibility is that companies adapt their business model and derive more revenue through the provision of services and less from selling goods. They could, albeit at a cost, offer far longer guarantees, essentially selling the service provided by products over a long period of time rather than the mere product, similar to hire or lease.

Retailers could also switch from simply selling new products to a rather more complex offering, in which they not only sell a product in its 'first life' but in subsequent lives, perhaps after refurbishment or upgrading. At present markets tend to be strictly divided between retailers of new products and outlets for repair and reuse; this could change if suppliers of high quality goods saw the potential for gaining a second tranche of revenue from the same items.

6 Conclusion

The throughput of goods in affluent, industrialised societies arising from the discarding of millions of consumer goods each year, whether outmoded, outdated or faulty, is unsustainable. The causes behind the throwaway culture are complex but the need for change is increasingly recognised. Interest in resource efficiency and demands for waste reduction has led to signs of change emerging and a growing interest in product lifetimes.

This exploratory paper has argued that there is a need for consumption in the economy to be characterised by fewer, but better quality, consumer goods in order to slow the present throughput of resources. It has explored the possibility that a strategic shift in markets from quantity to quality might advance progress towards sustainable consumption. Some key issues have been identified in considering the possibility of an increase in the market share accounted for by high quality items.

Change may occur on a voluntary basis but is more likely if public policy is supportive. If quality in the form of product longevity is considered beneficial to society as a whole, governments may accept that they have a role to play. Recent initiatives at European and national level offer some hope for change. If industry awakens to the commercial opportunities and supportive public policy measures are introduced, it is possible that the necessary shift towards higher quality, longer lasting products will be achieved.

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