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Design for Longevity: Obstacles and opportunities posed by new public policy developments

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This paper explores the implications for design theory and practice of recent public policy initiatives that aim to promote longer lasting products. Public concern relating to product lifetimes and, specifically, a perception that manufacturers of certain consumer durables are responsible for planned obsolescence, is long established. Academic engagement in this area has latterly increased and governments have taken interest in product longevity as a means of increasing resource efficiency and reducing waste. One of the driving forces is the revised EU Waste Framework Directive, which requires Member States to develop waste prevention programmes and highlights product life extension as a means of reducing waste. A subsequent Government review of waste policy in the United Kingdom indicated an intention to promote 'resource efficient product design', of which one element would be 'design for longer life, upgrading, reuse or repair'.

A range of possible implications for designers of this emerging public policy are considered in this paper, which questions the feasibility of increased product longevity in the light of the demands of market-oriented and growth-driven economies in Western Europe and addresses the potential role of designers in achieving such change. Drawing upon data from a series of semi-structured interviews with design practitioners, it considers how able and how motivated designers are to respond to the challenge of increasing product lifetimes and how they might utilise any power they have to affect change.

The paper relates these findings to the UK Government's pledge to work with businesses to 'design and manufacture goods that are more efficient, durable, repairable and recyclable'. Unless businesses see the prospect of commercial gain, they will not specify such products. The paper concludes that a mix of regulatory and market-based instruments will need to be adopted by government if increased product longevity is to be regarded by business as a credible strategy.

Keywords: Product lifetimes; Planned obsolescence; Public policy; Design for longevity; Sustainable design

Obsolescence and longevity

This paper explores the implications for design theory and practice of recent public policy initiatives in the United Kingdom that aim to promote longer lasting products by presenting the findings of a recent preliminary study of designers' attitudes to product lifetimes.

There has long been public concern relating to product longevity; specifically, a perception that manufacturers of certain consumer durables are responsible for planned obsolescence and an objection to the waste generated by short-lived goods (Packard, 1963, Slade, 2006). An attempt to revive debate on the topic in the early 1990s (Cooper, 1994) attracted considerable media publicity but did not lead to any notable change in public policy (Cooper, 2010). Recently, however, academics across several disciplines have explored various aspects of product longevity (e.g. Cooper, 2010; Gregson and Crewe, 2003; Mugge et al., 2010; Murakami et al., 2010; Oguchi et al., 2010) and the British Government has begun to take an interest in product longevity as a means of increasing resource efficiency and reducing waste (Defra, 2011a; ERM, 2011).

Explaining recent interest

Public policy has rarely addressed product longevity explicitly, and historically when it has done so the context has most often been an economic recession rather than concern about waste and the other negative outcomes of a throwaway culture.

Thus when America faced a recession in the 1920s investment banker Paul Mazur noted how 'if what had filled the consumer market yesterday could only be made obsolete today ... that whole market would be again available tomorrow' (Slade 2006:60), while a tract in 1932 proposed that the Government should impose maximum product life-spans in times of widespread unemployment, at which point 'people would turn in their used and obsolete goods to certain government agencies' (Slade, 2006:75). Meanwhile designers Roy Sheldon and Egmont Arens were promoting what they termed 'obsoletism' as a 'device for stimulating consumption' (Slade, 2006:66).

While there is no record of governments actually imposing maximum life-spans, in more recent years several have adopted an alternative means to achieve the same end: offering financial incentives to consumers who trade-in energy-using products such as vehicles, refrigeration equipment or boilers over a certain age. These 'scrappage schemes' were introduced in the USA and many European countries during the global recession that began in 2008, most notably for cars. An earlier scheme operated in the UK from 1996-2002 for inefficient fridges (Cooper, 2010).

Such scrappage schemes have been motivated in part by a desire to stimulate economies at a time of recession but also, to one degree or another, by the need to reduce greenhouse gas emissions arising from excessive energy use (Van Wee et al., 2011). At the same time, the United Nations Environment Programme and European Union, mindful of problems caused by excessive waste and the contribution of embedded carbon in products to greenhouse gas emissions, have considered the potential for waste prevention through a more efficient use of resources, including increased product longevity

One of the outcomes has been the European Union's revisions to the Waste Framework Directive (2008/98/EC), which introduced a requirement for Member States to develop waste prevention programmes and refers to product life extension as a means of reducing waste. Another is the Ecodesign Directive (2009/125/EC), which provides a framework within which compulsory design requirements may be set, the parameters of

which include ‘extension of lifetime as expressed through: minimum guaranteed lifetime, minimum time for availability of spare parts, modularity, upgradeability, reparability.’

In Britain, the Department for Environment, Food and Rural Affairs (Defra) responded by commissioning a research study on product lifetimes (Defra 2011b, 2011c; ERM, 2011) and, in a review of waste policy (Defra, 2011a), proposing several initiatives aimed at increasing product longevity. The review put waste reduction in the context of a resource efficiency programme and indicated that the Government intended promoting ‘resource efficient product design’ (para 40), of which one element would be ‘design for longer life, upgrading, reuse or repair’ (para 65).

Design and product longevity

This paper seeks to explore some implications for designers of this emerging public policy and the potential role of designers in contributing to the proposed shift towards longer lasting products. First, it briefly reviews the historic debate on product longevity among designers, from the contribution of Victor Papanek to more recent interest promoted by the Dutch design network Eternally Yours and the UK-based Network on Product Life-spans.

A debate on planned obsolescence began to grow in America over 50 years ago, initially emerging within the business community but later stirred by the popular writings of Vance Packard (1963). The initial reaction of designers reflected prevalent cultural norms in industry. Indeed, it was Brooks Stevens, co-founder of the Industrial Design Society of America, who, in a talk in 1954 on the mission of the industrial designer, created a popular definition of the concept of planned obsolescence: “instilling in the buyer the desire to own something a little newer, a little better, a little sooner than is necessary” (Cooper, 2010). Not surprisingly, his implicit support for the validity of design as a marketing ploy fuelled much debate.

As the modern environmental movement emerged, a few designers, most notably Victor Papanek (1972), argued that the design community should accept a greater degree of social responsibility, although many years were to pass before such thinking entered the mainstream. Initially it emerged as eco-design, alternatively termed green design (Burall, 1991; Mackenzie, 1991) or design for environment (Fiksel, 1996). At this stage product longevity was not given a high profile, as engagement by the design community in the debate on sustainable development largely arose as a result of legislative threats in areas such as energy efficiency and recyclability. Following the 1992 Earth Summit, however, which did much to legitimize interest in sustainability to government and industry, economic and social perspectives were incorporated into the concept, which evolved and consolidated into ‘sustainable design’, and as a quest for ‘greener’ products gathered momentum, life cycle thinking became pivotal (Heiskanen, 2002).

This paved the way for a new wave of young designers to explore the durability of goods and the potential for product life extension (Chapman, 2005; Mugge et al., 2005; Park, 2003; Van Nes and Cramer, 2005, 2006) and the development of guidelines for product lifetime optimisation as part of design for environmental sustainability (Vezzoli and Manzini, 2008). Two international multidisciplinary initiatives were created to promote understanding of the topic, the Dutch design network Eternally Yours (Van Hinte, 1997, 2004) and the UK-based Network on Product Life-spans (Cooper, 2010).

Methodology

In order to explore the level of awareness among designers of the challenge posed by inadequate product lifetimes and their perceived ability as practitioners to respond and

contribute to the necessary change, data was collected through a series of semi-structured interviews.

The semi-structured interview was considered an appropriate method as it allows the degree of flexibility necessary in a relatively novel field of research. In-depth interviews were undertaken by telephone and recorded for subsequent transcription. On average, the interviews lasted 30 minutes.

The sample comprised twelve designers working for companies with whom Nottingham Trent University has established links as a result of their offering placements to undergraduate students or participation in its Future Factory project (which provides support to local companies). The interviewees were all qualified designers and most worked in design consultancies, although one worked in a retailer's buying department. A satisfactory gender balance was achieved and, with one exception, all interviewees were located within the UK. Their clients included retailers and other businesses, in addition to customers through direct sales, and a range of product sectors were represented, including furniture, lighting, home accessories and electronics.

The interview schedule was constructed around four areas of interest:

- The extent to which the designer was concerned about the environment and whether any such concern affected their output
- Awareness of the designer of the various factors that determine product life-spans and any experience of planned obsolescence
- The extent to which the designer felt able to influence the life-span of products and, specifically, to encourage consumers to keep them for longer
- The designer's opinion on the likelihood of a trend towards longer product lifetimes and whether this would require some form of Government support.

Following the interviews the transcripts were coded and analysed in order to interpret the data and identify key themes, using established techniques (Bryman, 2001).

Key Findings

Consumer attitudes and behaviour

Designers expressed a wide range of views relating to consumers as purchasers and users of products and the implications for product lifetimes. Several noted how attitudes had changed over time; for example, some suggested that the practice of handing products down between generations had become less common. Reference was also made to a lowering of consumers' expectations of product lifetimes.

One positive theme that emerged was the degree to which clients conveyed an understanding of design and their level of engagement with products. Several designers said that they believed awareness of design has risen in recent years and that purchasers were increasingly design-conscious. Such appreciation, it was suggested, might lead to increased demand for higher quality and longer lasting products and a willingness to invest in these. That said, a need to cultivate awareness of products was also considered necessary, specifically an ability to consider the whole product life cycle: understanding the nature of trees and forests in the case of furniture and, for leather goods, the animals from which leather is derived. References were made to increased

understanding of sustainability, particularly among the young, although some designers indicated that clients were uninterested.

Designers' impressions of consumer interest in product design were certainly not all positive. For example, one referred to 'ill-informed' purchasers who either did not know or did not care about product quality. An example given was of people buying chairs without first sitting on them to test them for comfort and quality. Another designer referred to 'increasingly frivolous' attitudes. People did not only want the newest version of electronic products or to periodically update their home accessories, but regularly changed products such as items of furniture that were once regarded as long term investments. Several designers suggested that it was not possible to stop people wanting the latest fashion or newest technology.

Designers referred to attitudes not only affecting the purchasing process but the care with which goods were subsequently used. The quality of care might exert a considerable influence on an item's life-span, as when furniture was mistreated. Several designers argued that the care with which products were used would be affected by their value. If products were cheap, owners might make no emotional connection with them, whereas luxury items would be more carefully maintained.

Overall, designers conveyed a belief that society would inevitably be divided between people who valued design quality and were willing and able to pay for this and others who favoured cheapness. This meant that there would always be variations in product longevity: a key question would therefore be whether the balance in society between these contrasting attitudes might change.

The influence of the designer

Designers were asked to consider their personal attitudes to product longevity and the extent to which they felt able to exert an influence on clients.

Most of the designers interviewed expressed an interest in sustainable consumption in general and product longevity in particular, although differences emerged on the extent to which they felt they could personally exert an influence through their work. One noted wryly that definitions of 'lifetime' varied and that a product's lifetime was, in effect, the period until the receipt was lost.

Several designers indicated that they had a deep commitment to addressing the environmental impact of consumption. One described his desire 'to design a timeless piece.' Another spoke of his guilt at not using resources well. Some considered a degree of compromise inevitable and concluded that, if a product was to be short-lived, the designer should at least try to ensure that materials were recoverable.

Some designers had evidently reflected at length on how different approaches to design might influence product life-spans. One spoke of the risk of adopting an 'outspoken design' that would end up as a niche product with a short life cycle. Another pointed to the risk of design being 'too aggressive'. There was, one said, a need to 'tiptoe between the USP (unique selling point) and not scaring off consumers.'

Most of the designers indicated that their direct influence over product lifetimes was limited, the exception to this general rule being the designer-maker. One stated baldly that he had no influence; a product's life-span was up to market forces. Another noted that he could, at least, aim for reliability. It was also suggested that, even leaving aside the user, design was not the only determinant of life-spans: there might be a significant design input but the product might subsequently be poorly made.

Most designers indicated that they generally worked to briefs set by others. They were aware of the market within which they were operating, but it was up to the client to determine the market positioning for products. The client would determine their requirements by, for example, visiting trade fairs and assessing the market. One designer noted that clients might request regular changes to products, for whatever reason, which they would periodically have to redesign.

Designers had to design for the consumer, not themselves, according to one interviewee. That said, another designer indicated that he chose his clients very carefully in order that he could maintain his personal integrity. Others did not share his concern and commitment: one designer, asked about how to encourage consumers not to discard products prematurely, stated that promoting retention was not in a designer's interest.

Style and technology

Two themes to emerge as challenges facing designers with regard to product longevity, depending on the market, were periodical changes in style and fashion and pressure created by technological advance.

In the case of the former, one designer suggested that it is often cheaper products that tend to be fashion-led, although another pointed out that style is crucial in the car industry and few people would want to purchase a new Ford Mondeo in the style of even five years ago. Within the home, it was suggested that people are changing their décor more often and this often leads them to purchase new products. An example given was of people changing fabrics for home furnishings due to a new style emerging rather than as a result of a fault.

For many consumers mere functionality does not suffice. One designer argued that people have a natural desire for change. As an example, another said that in recent years the balance between traditional and modern kitchens that he designed had been completely reversed. On the other hand, it was also suggested that, far from arising out of a 'natural' desire for change, consumer uptake of fashion items was strongly underpinned by magazines and relatively cheap prices.

One designer said that changes in style had a significant impact on the market and were thus problematic. Frequent changes in style might result in lower quality products because manufacturers operate on the assumption that consumers will not want to retain long lasting products that become outmoded.

Companies were defended by one designer as locked into the current system. Manufacturers fear that not regularly changing their products' style will result in reduced sales. They are also influenced by the fact that retailers may only give their products a 'window' for a limited time period because the prevailing retail culture demands cycles of change.

Another challenge to designers is the pace of technological advance, most notably in the electronics sector. According to one designer, the technological changes that meant computers quickly become out of date due to ever-changing processors and motherboards were deliberate and irresponsible. Another said that it was impossible to keep up with the succession of technological advances when designing screens.

Pressure comes from various directions. One designer noted that companies may feel compelled to utilize the latest technology because this would result in their products being stocked for longer by the retailer.

Designing for longevity

Several designers made reference to the poor intrinsic quality of many products. One referred to the prevalence of ‘cheap crappy furniture’ and many examples were given relating to furniture: the use of engineered wood, cheap veneers that were easily damaged, use of paper foil rather than wood, a lack of corner blocks and a widespread use of low quality wood and foam cushions. Upholstery, the durability of which is readily identifiable through a rub test score, was of variable quality. Reference was also made to flimsy appliances and the irreparable nature of many small electronic items such as hairdryers and kettles.

Asked about designing products for longevity, several approaches were mentioned. One proposed a user-centred approach, describing the importance of focusing attention on the final user and how he or she would relate to the product. Another referred to the need to create emotional connections so that the user would not want to discard the product. The role of the designer was to add value and meaning. A starting point, it was suggested, was to seek to learn from history and other cultures as to how products come to be long lasting. One designer suggested that a balance was needed in some cases: it was beneficial to utilize traditional techniques but not to disregard useful technological innovations.

A range of practical suggestions were made. One designer suggested aiming to create a premium feel by focusing on the product’s ‘touch points’. Another proposed that the use of metal should be preferred in order to create a robust feel. Mention was also made of the importance of modular design, particularly in the context of reparability. One designer suggested that fixings, which were sometimes considered a weak point, being liable to snap, could be enhanced through good design and used positively to allow for ease of disassembly. In the specific case of furniture, suggestions included use of solid wood (on the grounds that people are more likely to retain such products) and good associated hardware, and taking care over edging. Another designer suggested working across different markets; she had compared the quality of fabrics designed for the commercial market with ‘arty-farty fabrics’ aimed at the consumer market and found that the former were not only more durable but significantly cheaper.

Problems posed by the transient appeal of fashion were noted. One designer admitted that he would only be excited by his new iPhone for ‘about a week.’ The use of ‘durable aesthetics’ was proposed, as were the benefits of adopting a ‘neutral’ style. One of the tasks of the designer, it was suggested, was to find an aesthetic that keeps an unchanging product attractive in an ever-changing market. By not ‘being trendy’ it was more likely that a product would have an extended shelf life. Another designer spoke bluntly of a need to ‘avoid fashion’.

Design for longevity requires consideration of the possibility of product failure and identifying solutions. One designer suggested the possibility of offering an extended guarantee underpinned by insurance. It was suggested that if products were to be longer lasting, planning for spares was especially important. One designer went further and proposed that there was a need to consider the whole ‘repair infrastructure’; in other words, thinking beyond the product to a solution based on a product-service system.

Market-driven influences

Many designers highlighted evidence that product lifetimes are influenced by market forces. One suggested that the market invariably dominates over other considerations, such as ethics. This was problematic. As the present economic and financial system rewards sales growth, companies promote replacement rather than retention. One designer suggested that simple commercial logic meant that companies would not want a designer to create an ‘everlasting gobstopper.’

A few designers adopted a less critical view of the market, suggesting that it allows for a range of products of different levels of quality, including higher priced goods that should last longer. More, however, expressed concern, particularly concerning quality.

Several considered that markets are shaped unduly by price considerations at the expense of other variables. According to one, ‘price-driven markets’ resulted in reduced quality. The fact that many products cost less than in the past was not necessarily viewed positively. One designer thought that society could not ‘afford cheapness’ because of the implications for quality and value. Another raised the possibility that problems arise because retailers require a relatively high mark-up.

The use of inappropriate business models in some sectors was criticised. One example provided by a designer from the furniture sector was a retailer who made the price of products very low and depended on ‘add-ons’ and finance deals in order to make a profit.

In general, designers did not focus criticism on companies; they appeared to judge that the problems lay with the system within which companies operated. Thus concern was raised by several designers that the international economic system led to repair work costing more than replacement with new items. The price of smaller electronics, for example, meant that they were invariably irreparable. Change would need engagement in the debate from international authorities and governments.

Different views were expressed on the implications of economic recession for product lifetimes. One was that sustainability became more difficult to promote as people were less able to afford higher quality products, while another was that recession results in slower product development cycles, which would lead to people replacing products less often.

The role of government

Designers were lastly asked whether they considered that the Government might have a role in promoting product longevity. Contrasting opinions were expressed.

One designer expressed the view that, faced by excessive resource use and waste, the best course of action was to trust markets to be responsive. It would be inappropriate to seek to ‘force’ change, although the Government could rightly use measures such as its procurement policy to promote good practice; indeed it was already doing so with regard to personal computers.

By contrast, a designer with a rather different perspective argued that the Government has a ‘massive role’ to play, because in order to achieve change it would be necessary to address the economic system. Another suggested that any solution would need to respond to the logic of the market which drove companies to seek capital growth and produced an incentive for them to sell more products and encourage premature replacement.

Thus while designers’ approaches differed, there was a shared recognition that commercial pressures exerted an important influence upon product lifetimes. References were made to the need to work with industry and to change manufacturers’ attitudes, although without significant detail. The potential role of government in other areas identified by designers was uncontroversial, such as promoting designer-makers, giving exposure to examples of good practice, and developing second hand markets.

Designers also suggested that the Government needed to engage with consumers. One said that there was a need to encourage consumers to associate quality with longevity, and to link this with British-made products. Another said she was wary of patronizing consumers, who she considered did not need government help in making their decisions.

Finally, it was proposed that product longevity should be linked to the carbon agenda, with which industry and consumers alike were familiar. One designer argued that there was no single solution and that, ultimately, a change in culture was required; this would need to involve the education system and teaching children to improve care of the material world. More specifically, the importance of design education should be recognised, as it would lead to better appreciation of products and how they are designed.

Conclusion

The interviews in this study revealed designers to be familiar with different forms of obsolescence and influences upon product life-spans, and aware of some theoretical and practical approaches to design for longevity.

The extent to which they felt able to influence product life-spans was determined to a large degree by the context within which they worked and the markets in which they operated. In most cases they considered that their power to effect change was relatively limited. Thus while many had a personal interest in environmental concerns, this did not necessarily affect their output, except at the margin.

Designers expressed awareness of the market-driven nature of Western economies and the factors that shape how companies operate. Many voiced concern at the financial logic driving practices that resulted in short-lived goods, while recognizing that it was not easy for an individual company to implement a solution. They were also mindful of the diverse nature of consumers and their complex attitudes and behaviour.

Asked about the role of Government in promoting longer product lifetimes, designers identified several options. Some were uncontroversial, such as establishing a dialogue with industry, promoting good practice and improving the profile of design education in schools, while proposals for more systemic change appeared more divisive.

The British Government pledged in its waste policy review to work with businesses to 'design and manufacture goods that are more efficient, durable, repairable and recyclable.' The findings from this study suggest that, for their part, designers would be keen to contribute. Unless businesses see a prospect of commercial gain through manufacturing and selling products designed for longer lifetimes, however, they will not invite designers to adopt this approach. The systemic nature of the problem suggests that a mix of regulatory and market-based instruments will have to be adopted by Government if increased product longevity is to be regarded by businesses as a credible strategy.

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