

Work package	1
Task	1.1 – PSS : Current UK practice
Deadline	Month 3
Status	Completed – January 2008
Work package leader	Paul Micklethwaite, Kingston University
Objectives	
<ul style="list-style-type: none"> ➤ Identification of current Product Service Systems (PSS) employed by UK furniture manufacturers through discussions with and a review of the operating practices of a representative sample of office and contract furniture manufacturers 	
Method	
<ul style="list-style-type: none"> ➤ Primary research : telephone interviews were conducted with representatives of a number of UK contract furniture manufacturers, to explore their understanding of the PSS concept and discover any current activities which might relate to PSS ➤ Secondary research : the websites and corporate literature of these companies were also examined to discover any current activities which might relate to PSS 	

Executive summary

- This report partially delivers Work Package 1, the objective of which is to identify current and potential best practice with regard to Product-Service Systems (PSS) which can be used to decouple manufacturing profit from the need to produce additional furniture (with associated emissions).
- As the PSS concept was likely to be unfamiliar to interviewees, at least by that name, discussion was sought on “add-on services around products, that aid environmental sustainability”.
- Product takeback is a familiar concept to the interviewed companies, several of whom offer it as a service to customers. There are, however, often technical and logistical barriers to its feasibility within the contract furniture sector.
- Product repair options are largely dependent on appropriate original product design. Customer demand for refurbished furniture must also exist.
- Leasing is a largely untried concept for the interviewed companies, who are uncertain as to its feasibility in the contract furniture sector.
- Pioneers like Interface and Xerox demonstrate that the PSS model can be used successfully and profitably in their sectors. The model has yet to be applied so seriously in the UK contract furniture sector.

Task 1.1 PSS : Current UK practice

1 Introduction

Product Service Systems (PSS) involve a reconsideration of the way in which manufacturers sell their product, and offers the potential to decouple producers' business success from the amount of products sold. By creating value from the provision of additional service rather than additional product, it is possible to create greater economic benefit simultaneously with reduced environmental impact. UK manufacturers are better placed than importers to offer high value PSS, yet they have on the whole yet to exploit this model. Interviews and desk research were conducted to try to establish current awareness or delivery of PSS in a sample of UK contract furniture manufacturers.

2 Company selection

The PSS concept is generally seen as being applicable to contract (repeat purchase / business-to-business) rather than retail (single purchase / end consumer) commerce. (Cooper & Evans, 2000:13) Telephone interviews were therefore conducted with seven UK manufacturers of contract furniture, and additionally one housing contractor (as a customer of contract furniture for installation in social housing). The companies are listed in a Table at the end of this report.

2.1 Telephone interviews

Robson's "introducing yourself" interview protocol was used (2002:281). As the PSS concept was likely to be unfamiliar to interviewees, at least by that name, discussion was sought on "add-on services around products, that aid environmental sustainability". Company website and corporate literature were reviewed before each interview and used as a starting point if useful. Interviews were semi-structured. The interviewee was encouraged to direct the discussion, but in some cases prompts were required. Prompts related to the three aspects of PSS most relevant to the manufacture and provision of furniture : (1) product takeback; (2) product repair, refurbishment and remanufacture; (3) product leasing. A 'mind map' of each interview was produced by the interviewer; these were then used to generate the findings presented here.

3 Findings

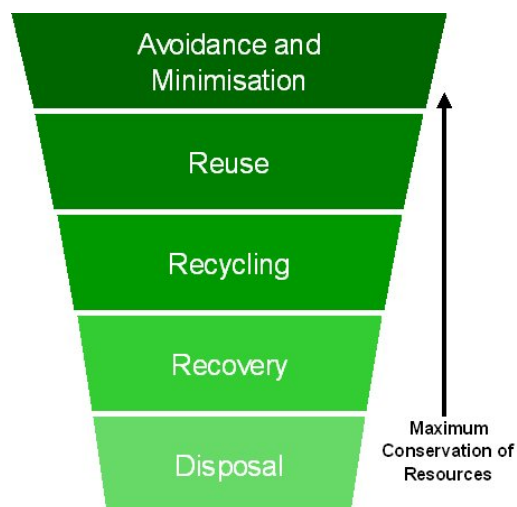
Although the interviews were ostensibly concerned with PSS, interviewee discussion of other environmental practices and credentials of their company was common. Clearly, much is being done by the selected companies in terms of improving their overall environmental performance, but PSS is the exclusive focus here. Findings are presented discursively in relation to the three prompts used in the interviews. Direct interviewee quotes are shown "like this".

3.1 Product takeback

‘Product takeback’ describes a scenario in which a producer accepts responsibility for a product it has supplied, at the end of the product’s life (however ‘end-of-life’ is defined). Takeback legislation has recently been applied in the UK to electrical and electronic equipment, and packaging. Such legislation is not currently proposed for furniture, and is in general not anticipated in the short-term by the interviewees. Some of the interviewed companies are nevertheless already conducting some form of product takeback.

Supply and installation of contract furniture on a large scale (eg. kitchens to a social housing project) often involves the replacement of old furniture, where the customer wants to “whack everything out and start again”. The supplier may be required to remove and dispose of existing furniture. This is usually either devolved-out to a specialist waste removal company (who then seek to resell or recycle recovered furniture), or furniture is skipped on-site for recycling or landfill. The rising cost of landfill has created a business opportunity for specialist waste recyclers, who may step-in to carry out the furniture disposal role independently. Handing over the disposal of the old replaced furniture to a partner may bring risks, however, as a ‘chain of custody’ is required whereby the installer of the new furniture remains responsible for the old replaced furniture to its point of final disposal.

The alternative route of taking back old kitchen or office suites, with a view to refurbishing or remanufacturing them, is complicated by a number of factors. The quality and condition of the replaced furniture may be poor or inconsistent, depending on age and intensity of use. The old furniture is also unlikely to be of the installer’s own design, or to have been designed with end-of-life in mind. As a result, practical end-of-life options may be limited to the lower levels of the waste hierarchy : recycling, recovery (incineration) or disposal (landfill). Even recycling may not be appropriate in the case of potentially-toxic sealed boards and panels. Takeback also presents logistical challenges in terms of transporting old furniture safely to a suitable site for treatment.



The waste hierarchy

Product takeback is more manageable in the case of original manufacturers taking responsibility for their own individual products, eg. office chairs. Where the product retains a high-value, and has been designed for refurbishment, it is feasible for an individual manufacturer to establish a closed-loop takeback and refurbishment scheme. For example, as the first generation of a successful chair model begins to reach the end of its warranty-life, a significant and economically-worthwhile volume of units becomes available for refurbishment to extend functional life.

Takeback opportunities may be restricted where a company's own product is a component part within the larger product of another manufacturer, eg. the seating fabric of a chair. Here the chair manufacturer is the customer of the fabric manufacturer. Recovery of the textile at end-of-life requires collaboration between both parties in terms of suitable original design and later coordination of collection.

The example of office chair takeback for refurbishment identified above was customer-driven. This driver for product takeback was absent in the other interviews. One manufacturer offers a takeback and refurbishment service, but this is in practice not taken-up by customers, who prefer to simply replace old furniture with new.

In conclusion, product takeback is a familiar concept to the interviewed companies, several of whom offer it as a service to customers. There are, however, often technical and logistical barriers to its feasibility within the contract furniture sector.

3.2 Repair options

The purpose of product takeback is to allow the material and economic value of the recovered product to be retained. This means doing something with the recovered product at a higher level of the waste hierarchy than simply recycling, burning for energy recovery, or landfill. Redistribution for straight reuse is the preferred option. Where this is not possible (due either to lack of market demand, or the nature and/or condition of the recovered product), repair, refurbishment and remanufacture (collectively described as 'repair options') come into play.

Where the product is a component in a larger product, repair options may not be feasible or worthwhile (for the reasons given above in relation to takeback).

Where a product has been designed for disassembly and refurbishment (eg. via modular design), repair options become feasible even if the product is quite complex (as in a high-value office chair). This refurbishment may be done in-house (in which case a renewed warranty may be attached) or contracted out. If the refurbished chair is returned to its donor, under whatever financial terms, this process can be seen as a form of PSS. What is perhaps more likely at present is that the refurbished chair is resold to a new customer. In either case, the closer the involvement of the original manufacturer the better in terms of its profiting from the process.

Repair options have the potential to be more economic, and less resource-intensive, than straight replacement for a manufacturer honouring a warranty offered with its product at time of sale. Yet there are conditions. Repair options are likely to require additional capabilities to original production, and manufacturers may not be set-up to carry these out. Repair options are also likely to be more labour intensive than large-scale original production, in which labour (and particularly skilled labour) is

increasingly designed-out. One response is to design products to allow ‘DIY’ replacement of particular components (eg. a kitchen cabinet panel, a zip-back bucket chair cover) by the customer. Both examples are offered by companies interviewed here. This allows replacement of worn or defective parts to be performed easily by the user in-situ. It also allows easier cosmetic ‘refreshing’ of furniture for reasons of style rather than functional need.

Design for refurbishment is a strategy to extend product life. As such it acts against new product purchase. One interviewee describes this as “commercially, a suicide mission”. It certainly goes against the normal business model in which profit is linked directly to volume of sales. This shift is the key focus of the PSS concept, and may be difficult for a traditional manufacturer to adjust to.

Finally, even when repair options are technically and logistically feasible, there may be little customer demand for refurbished furniture. Contract furniture is seen as increasingly a fashion industry, in which organisations seek to make corporate statements via their choice of furniture. Frequent restyling is increasingly the norm, and this typically involves replacement rather than refurbishment of existing furniture. The demand-side clearly needs to be addressed in any consideration of the feasibility of product repair options. Customer acceptance of refurbished furniture may need to be created, based on the potential economic and environmental savings and benefits for the customer.

In conclusion, product repair options are largely dependent on appropriate original product design. Customer demand for refurbished furniture must also exist.

3.3 Product leasing

The subject of leasing, rather than selling, furniture met with a wide range of responses in the interviews. Where additional introductory explanation of the concept was needed, the flooring company Interface was used as an example; Interface pioneered the leasing, rather than sale, of flooring tiles for commercial premises.

In one company, leasing has been “done for years” and is an option available to all customers, though not usually taken-up. Administration of this leasing service is outsourced to a partner. The manufacturer claims to have no preference whether its customers opt for lease or purchase of its furniture.

Another company had introduced a leasing model previously, but considered it to have failed. The comment “we’re not a bank” suggests that for this manufacturer leasing was not as financially attractive as direct sales. Several other factors were cited in relation to the leasing concept, chief among which is the fact that a customer leasing furniture is likely to take less care of it than if they owned it, thereby making leasing less attractive to the producer. This comment was made by several interviewees. Lack of ownership was seen as leading to a less responsible attitude from the customer, and greater risk of damage to the furniture itself. Leasing works through a circulation of products from a central pool, to multiple users in response to their changing needs. Clearly this will not be successful if the value of the product is not maintained throughout each lease period. In situations where there is little control over users’ care of leased furniture (eg. non-owner-occupier housing), leasing

becomes unattractive for the producer. Leasing requires products to withstand a greater intensity of use and abuse than if they were purchased.

Non-standard products may be unsuitable for leasing; it may simply not be possible to find successive users for highly bespoke furniture. Similarly, an installed product system such as a kitchen suite may be too complex to remove and reuse elsewhere. In this case the comparison with a much simpler, ubiquitous standard product like flooring tiles (as in the Interface model) breaks down.

The remaining companies had not considered leasing as a serious option, and were unaware of any leasing services offered in their particular sectors of the contract furniture market.

In conclusion, leasing is a largely untried concept for the interviewed companies, who are uncertain as to its feasibility in the contract furniture sector.

4 Conclusions

The companies interviewed were all professional contacts of the project team. That they were willing to be interviewed could be interpreted to mean that these companies are particularly progressive in their environmental practice, and thus not perhaps representative of the wider UK furniture manufacturing industry. Sampling was not random. The participating companies nevertheless include some of the leading UK contract furniture manufacturers, across several sectors (see table below), and so their views carry some weight. Specific product and market sectors have been mentioned where particularly relevant.

The phrase ‘Product Service Systems’ was not used in the interviews on the grounds it would probably be unfamiliar to interviewees. Several of the companies are however currently delivering services in addition to the straight supply of products. Most obviously, this includes offering and fulfilling a warranty, particularly where there is scope for product repair rather than replacement, as discussed above.

Findings have been presented for the three aspects of PSS most relevant to the manufacture and provision of furniture:

1. Product takeback is a familiar concept to the interviewed companies, several of whom offer it as a service to customers. There are, however, often technical and logistical barriers to its feasibility within the contract furniture sector.
2. Product repair options are largely dependent on appropriate original product design. Customer demand for refurbished furniture must also exist.
3. Leasing is a largely untried concept for the interviewed companies, who are uncertain as to its feasibility in the contract furniture sector.

PSS require collaboration between companies involved in different ways, eg. product delivery and collection, financing, product refurbishment. This brings complexity, but companies such as Interface have demonstrated that it is possible to manage successfully.

One interviewee describes strategies to extend product life (eg. via repair) as “commercially, a suicide mission”, insofar as they act against new product purchase. It certainly goes against the conventional business model of profit being linked directly to sales. Decoupling manufacturing profit from the need to produce additional furniture is the key focus of the PSS concept. PSS pioneers like Interface and Xerox demonstrate that this model can be used successfully and profitably in their sectors. The PSS model has yet to be applied so seriously in the UK contract furniture sector.

Telephone interviews

Company	Description	Interviewee	Position	Date
Camira Fabrics	Seat coverings & panel fabrics	Jane Orton	Sustainability co-ordinator	26.06.2007
Eurotek Office Furniture	Office furniture systems	Brian Halson	Compliance Manager	20.04.2007
Hands of Wycombe	Bespoke commercial furniture	Deborah Browne	Purchasing Manager	27.06.2007
Herman Miller	Office furniture	Andy Willcox	Quality Manager, Europe	04.07.2007
Moore's Furniture	Kitchen, bedroom & bathroom furniture	Andy Parker	Public Sector & Retail Sales Director	17.05.2007
Morgan Contract Furniture	Contract seating & tables	Paul Jones	Production Manager	27.04.2007
Symphony Furniture	Kitchen, bedroom & bathroom furniture	Alan Kinnes	Contracts Sales Director	14.05.2007
United House *	Social Housing contractor	Tom Whatling	Environment Manager	29.06.2007

* All companies are furniture manufacturers, except United House which is a housing contractor.

References

Cooper, T. & Evans, S. (2000) Products to Services: A report for Friends of the Earth. Friends of the Earth.

Robson, C. (2002) Real World Research. 2nd edition. Blackwell.