

13

Product service systems

A viable business model for fashion brands?

Naomi Braithwaite and Annika Schlemann

1. Introduction

Fashion is one of the world's most polluting industries (Scarpasca, 2014). In the UK, 350,000 tonnes of clothing are estimated to end up in landfill annually (WRAP, 2019). This is a global problem, evidenced further by the average American throwing away 80 pounds of used clothing every year, even though most of it is recyclable (Letlanc, 2017). The materialistic values of contemporary society driven by the desire to have something new (Campbell, 1997), combined with the growth of fast fashion, where garments have become easily disposable (Richards & Moore, 2007), creates the pressing need for a more sustainable approach within the industry. Fashion celebrates seasonal trends, and consumers want new and diverse wardrobes, meaning that many garments have a shorter use value. Additionally, clothes are not always designed to last. The world's resources are finite, and a practice in which production, consumption and disposal prevails can no longer be sustained.

Despite its tendency towards a linear business model of take, make and waste (Ellis, 2014; UpcArthur Foundation, 2014), fashion has taken strides towards sustainability. The Sustainable Clothing Action Plan (SCAP) 2020 Commitment sees fashion companies working together to

13 Product service systems

reduce water, waste and carbon footprints through initiatives, which include resource efficient business models, for example reuse and recycling (VIRAP, 2017). While recycling initiatives, such as those pioneered by H&M on a global scale, which has seen 32,000 tonnes of their garments given a new life since 2013 (H&M, 2013), are creating a change, they are not necessarily shifting patterns of overconsumption. Recycling's contribution towards achieving circularity can be challenged, as it is a process that requires energy, creating other environmental impacts (Silwood, 2014). An innovative business model that is materially efficient and can change consumption habits is key to creating a more sustainable fashion industry while ensuring a continuation of its economic prosperity. A move towards leasing, under the umbrella of a product service systems model, would encourage a circular flow through the fashion system while still fulfilling the consumer's desire to have something new. It is this which forms the focus of the chapter, which explores product service systems as a viable business model for fashion.

2. Product service systems as a resource efficient business model within the circular economy

The merits of the circular economy, where resources are kept in use longer, with maximum value extracted at end of service life, has increased in momentum at governmental level, and through its practical uptake by industry. While circularity is mostly achieved through recycling (Reason, Crang, Fuller, & Holmes, 2017), there is a growing interest in exploring the potential of other resource efficient business models. Accenture, a leading global strategy company, identified a service-based system as a significant business model for facilitating circularity

13 Product service systems

(2014), indicating its potential as a system that benefits both businesses and consumers. The model of product service systems (PSS) relies on servitisation, promoting the 'sale of use', rather than 'sale of product' (Baines et al., 2007). PSS includes a mix of tangible products and intangible services, designed and combined so that they can fulfil consumers' needs (Tukker & Tischner, 2006). It is commonly defined as a system of products, services and networks of players with a supporting infrastructure that is competitive, satisfies consumer needs and has a lower environmental impact than traditional business models (Gandkong, Van Halbe, Riele, & Kemmer, 1998).

PSS is acknowledged through academic interrogation as a resource efficient approach that extends the life of a product by improving its service performance and increasing its intensity of use (Took, 2014). The model aims to replace personal ownership and material overconsumption with a service-based system where the producer, or business, maintains control of the products (Vicario & Stajk, 2004). As a resource efficient model, PSS, often termed leasing or renting, should impel a longer service life and, by halting the flow of materials through the economy, reduce waste, imparting economic and environmental benefits. These benefits include new market opportunities, reduction in material and energy use, increased product lifetimes, longer term and stronger relationships with consumers, job creation and consistent revenues, as well as higher profit margins (Baines et al., 2007; Mont, 2002). They evidence that motivations for adopting this model extend beyond the realms of sustainability, yet its role in material efficiency is focal to academic studies of PSS (Mont, 2002).

The success of PSS at a business to business level is evident in Rolls-Royce's 'Power by the Hour' model, which has been in operation for over 50 years (Rolls-Royce, 2013). Rolls-Royce provides spare parts and maintenance to the airline industry through their Total Care service.

13 Product service systems

Rather than transferring ownership of turbine engines to the airline, they keep ownership, demonstrating a successful business model for manufacturers. At a consumer level, DEFRA (Department for Environment, Food and Rural Affairs) has estimated that at least 20% of household expenditure could be shifted from material goods to services (2014). To implement PSS successfully, there needs to be a solution where everyone benefits (Armstrong, Nunnally, Long, & Kotiah, 2014). In most PSS schemes, the producer remains the owner of the product and will have certain responsibilities during its lifetime. A potential economic interest from the brand's side would be to extend the product's lifetime, as well as encouraging reuse or re-manufacture. As profit depends on the cost per unit of service provided to the consumer, the producer would have a vested interest in reducing the amount of resources consumed (Verroo, Kuitala, & Srinivasan, 2014).

Despite its benefits, PSS is still underutilised. As an alternative in fashion, examples of PSS are emerging. Small fashion companies have started the move to consuming fashion in a different way by running a PSS based business model. Examples are MUD Jeans, a Dutch denim brand where you can lease your jeans, and Rentez-Vous, a UK-based peer-to-peer fashion rental company, both of which have contributed to this study's research. These companies are impassioned to make change. Although they face the challenges of a competitive and linear fashion system, they evidence the viability of PSS as a successful and sustainable way to do business. A survey conducted by Westfield Shopping Centers predicted rental to become a key trend for fashion retail, demonstrating that the industry is open to change (Westfield, 2015). The UK is predicted to have a potential for a clothing rental market worth £923 million (Hounley, 2016). While research evidences that PSS offers sustainable solutions, there is still a

lack of knowledge of what consumer perceptions towards this might be, and it is this which formed the focus of the methodological approach to this study.

3. Methodological approach: research aims, questions and scope of study

Masters research, undertaken at the School of Art and Design, Nottingham Trent University, UK, examined the opportunities and barriers for a PSS implementation for fashion brands, from consumer and business perspectives. The methodology explored these views in depth to identify the feasibility of PSS as a business solution. Attitudes and behaviour towards PSS, sustainability and new business models were explored. Three different data collection methods were utilised, using a mixed method, ethnographic approach.

The research intended to answer the following question:

What are the opportunities for creating a viable and more sustainable business model for fashion brands through PSS?

The aim of the research was to identify barriers and opportunities of PSS for a viable, more sustainable fashion brand business model.

The study was focused on the following objectives:

- Interrogate PSS as a sustainable business model
- Investigate the current business models of fashion brands
- Identify drivers, benefits, barriers and opportunities for PSS implementation

13 Product service systems

- Examine sustainable fashion business solutions
- Identify opportunities of PSS in the fashion market.

The research aimed to identify sustainable business solutions, inform recommendations for PSS implementation and the possible effect on the economy and environment as well as gaps in literature. Quantitative data was collected in the form of a survey in conjunction with qualitative data from interviews with industry professionals and brands, as well as a wardrobe study. It intended to scrutinise consumer, as well as industry attitude, towards PSS, clothing consumption and sustainability.

3.1. Survey

To gain insight into buying behaviour and disposal habits, a survey was conducted among German and UK consumers. This gave a cross-cultural dimension to the consumer data. The survey was designed as a self-completed online questionnaire. Respondents were asked to comment on the following:

- Periodical behaviour (e.g. How often do you purchase new garments?)
- Classification questions (e.g. income, education, occupation)
- Awareness questions (e.g. Do you consider environmental impacts when buying clothes?)

The survey targeted a sample size $n = 123$ responses aiming at consumers of all ages over 20 years. The data provided statistical as well as qualitative information. Most participants were

under 35 years; 32% were 20–25 years old, 31% were 26–35 years old and 20% were 36–45 years old. The majority (88%) of respondents were female, which can be supported by other research which found young women constitute the largest consumer group of fashion products (Nimimaki, 2013).

3.2. Wardrobe studies

The wardrobe study was conducted in Germany and the UK, the researchers' home countries. The sample consisted of eight UK-based and 10 German-based participants aged between 22 and 59 years, with various educational backgrounds (high school, bachelor's or master's degree, vocational training), and occupations (health sector, creative industries, commerce). The study collected numerical data, for example how many pieces of clothing they owned and how often they were worn. In-depth interviews were undertaken with each respondent to explore behavioural patterns, including why some clothes were worn more than others, as well as participants' disposal habits and if they were interested in using a PSS model.

3.3. Interviews

Interviews with professionals from the fashion industry supported an understanding of the potential for PSS within industry. The companies approached were providers of product services. Interviews with the following companies were conducted and are used to inform this chapter:

13 Product service systems

- Bert van Son: Founder and CEO of MUD Jeans, a jeans company from the Netherlands with a focus on sustainability, which offers a leasing, take-back, recycle, repair and resale service.
- Fiona Disegni: Founder of Rentez-Vous, an online clothing rental platform, where individuals can rent out their own clothes, as well as from designers.

The qualitative data obtained from interviews was interpreted using thematic analysis. A participant observation was also carried out at the Youth Fashion Summit 2016/Copenhagen Fashion Summit. The researcher observed how fashion brands presented themselves at the biggest conference on sustainable fashion. The implemented mixed methods approach brought a breadth of data from which to debate the viability of PSS in the fashion industry.

4. Consumers attitudes and behaviours towards fashion and the potential for PSS

A key motivation for consumers purchasing clothing is the desire for something new and this was evident through the findings from the cross-cultural survey and wardrobe studies. Aligning Schwarz's theoretical structure of values, purchasing and owning clothing links to the fulfilment of self-enhancement, offering pleasure, stimulation and achievement in life (Schwarz, 1994). The results of the survey between consumers in the UK and Germany found that 50% of all respondents bought clothing monthly, usually because they wanted to have something new. Many participants agreed that shopping was a pleasurable activity. Consumers are becoming environmentally conscious (Timber 2017), aided by the fact that the fashion industry is more

13 Product service systems

transparent, certainly in the context of where, how and by whom products are made. However, it is less clear that they are aware of the impacts of their consumption behaviour. To explore this further, the survey and wardrobe studies questioned respondents as to whether they considered the impact of clothing production and consumption when purchasing new clothes. Although 32% did, particularly in relation to working conditions, a slightly higher number (33%) of participants was concerned but did not limit their purchasing. This may be construed as symptomatic of a gap between consumer attitudes and behaviour (Trais, 1995), where awareness does not translate into motivations for change. This problem is well noted in the context of sustainable consumption.

Although the participants of this study were less concerned about sustainability at the point of purchase, they were when it came to discarding clothes. Most respondents would give their unwanted clothing to charity (83%). Out of this number, 32% did state that they would donate fast fashion clothing if it was in reasonable condition. If they had invested in more expensive items these tended to be kept (28%), against 11% of fast fashion items. When it came to fast fashion, these garments were more likely to be disposed of (15%) in contrast to the 3% of participants who sent high-end garments going to landfill.

To change purchasing behaviour, it is necessary to understand the value that clothing holds for consumers. The meaning of value is complex as it spans functional, use, economic and emotional considerations (Salvin et al., 2014). Socio-cultural factors influence value, including consumers' personalities, as well as the product's characteristics. In the context of fast fashion items, which formed the staples of the respondent's wardrobes, economic values were not guiding principles. Important was the garment's functional value, defined as comfort, quality and fit, and in 50% of cases clothing had emotional and intrinsic values.

13 Product service systems

Clothing is significant for reflecting emotional attachments, these may come through wear, memories and personal associations, for example if it belonged to a family member (Woodward, 2007). These attachments mean that clothing is less likely to be discarded. Instilling emotional durability into products has been a key driver in the sustainability debate as it could ensure a product's longevity (Chapman, 2015). Fulfilling emotional attachment may be problematic for a leasing model which sees a transient relationship between individuals and clothing. However, with society shifting from a focus on materialistic values to one that is shaped by experiences (Pine & Gilmore, 1998), this may become less of a challenge. Consumers could fulfil their values of pleasure and stimulation through the act of rental rather than garment ownership. Channelling this type of experience is something that fashion brands could consider within a PSS model. Luxury rental brand, Girl Meets Dress, is a good exemplar of this. It was founded in 2009 on the premise that an economy that values access and experience could mark the end of the age of ownership (Minton, 2014). While this brand sits at the top end of the market, where the high price tags are more open to a rental model, it demonstrates that change is afoot.

Despite emotional attachments to clothing, many of the study's respondents only wear their favourite piece of clothing twice a month on average. This raises an issue of intensity of use, where consumers are not realising the true value of their clothing through wear. WRAP found that in the UK the value of unused clothing in wardrobes is estimated to be £30 billion (2017), symptomatic of what has been termed the 'wear it once' culture (Barnado's, 2015). One respondent from the wardrobe study stated; "If I found something I actually like I am happy about it and want to wear it. But then after a week or so it just becomes another top like the others" (Male, UK, age 22, personal communication, 24 May 2016). PSS presents a solution

13 Product service systems

here, but for it to be successful, consumers need to be open to change. Awareness and perceptions to PSS, were asked of all the study's respondents, with the more positive responses evidenced from the younger demographic.

“Renting I think is a good thing. It would need to be a leasing contract for me. So, you pay something upfront, have it for a while and then pay it off, or send it back . . . I would like it if you could choose ten pieces, order them and keep them for a month and then decide to keep or not” (Female, Germany, age 27, personal communication, 30 April 2016).

The key factors identified by consumers from both countries was that renting should be convenient, that it could work for occasion wear, or be more aligned to everyday garments. It was clear that these individuals were potentially open to such a model, but in many cases, as demonstrated above, they wanted the option to buy the garments. This evidences that ownership is still a key attribute to consumer behaviour and attitudes towards clothing. If implemented, PSS could increase the active life of garments, which would decrease the annual carbon, water and waste footprints of clothing (WRAP, 2015). This should increase the functional value of clothing from being never, or sometimes worn, towards always in use (Figures 13.1 and 13.2). In many cases participants could imagine renting luxury garments, but were less sure about fast fashion – after all it is just so cheap to buy, what would be the point. The purpose of this study was to scope the potential for a service driven model for the fashion industry among consumers, but businesses need to make the transition, and, to do this, there needs to be further clarity of the viability of PSS.

[Insert Figure 13.1 Here]

Commented [w1]: AU: The reference list has [[WRAP, 2012/2014/2017]], not [[WRAP, 2015]]. Please clarify which year of publication is correct for consistency throughout.

Correct date should be WRAP, 2013

Figure 13.1 Wardrobe study: left-hand pile are clothes that are always worn and right-hand pile are sometimes worn

Source: Author's own image.

[Insert Figure 13.2 Here]

Figure 13.2 Wardrobe study: clothes that are kept but never worn

Source: Author's own image.

5. PSS in the fashion industry: barriers and opportunities

Participant observation undertaken at the Copenhagen Fashion Summit 2016 revealed that the key issues the fashion industry is concerned with are the continued development of sustainable materials, production processes and opportunities for recycling. Brands including Nike and H&M were focused on initiatives to reduce waste and move towards circulatory through recycling. There are still gaps in the industry for shifting consumer behaviour patterns, undoubtedly as that would prove a huge threat to a linear system. The popularity of the vintage clothing market, along with online marketplaces, like eBay and Vestiaire Collective, means that secondhand clothing has been one of the key initiatives driving a more sustainable consumption. However, the emergence of entrepreneurial start-ups, for example Girl Meets Dress, MUD Jeans, and Rentez-Vous, shows that there is an opportunity to implement PSS in the fashion system. These examples, while making some headway in achieving success in the market, face challenges from the traditions of the linear system. To understand PSS as a viable

solution at industry level, interviews with the founders of MUD Jeans and Rentez-Vous were undertaken.

5.1. MUD Jeans

In 2013 founder Bert van Son, founder of MUD Jeans, established the 'lease a jeans model', which offered a more sustainable approach to consumption. The model works on an initial payment of €20, with a monthly fee of €7.50 for a year. At the end of the year, the consumer can either keep those jeans or return and receive a new pair. A repair service is offered and if the jeans are returned they are either reconditioned for reuse or recycled.

Van Son discussed the growth in business as consumers became more aware of the advantages of a leasing model. However, as a small company he faced challenges with payments, and receiving any financial incentives for creating a sustainable model. Key to MUD's success is its story. As an innovative business, MUD Jeans has competitive advantage and confirms that despite the lack of tax benefits, leasing does create profit.

5.2. Rentez-Vous

Rentez-Vous was founded in London in 2014 by Fiona Disegni. It was created on the premise that you do not need to own clothes to enjoy fashion. Rentez-Vous began as an event-based concept, inviting friends to their apartments in Paris, and then London, to share wardrobes. This turned into a more formal business where consumers could sign up for a fee and then come to social events to share clothing. The company was initially based in the principles of collaborative consumption, driven by a peer-to-peer relationship. Fiona attributes the social aspect as being key to the positive reception to the business.

13 Product service systems

We held events to bring people together. To explain what we were doing and get people to try it out, test the process. People would bring their own clothes and share. Then we brought designers on board. We wanted to make it more than just swapping clothes so we created an exclusive experience. We held events in people's homes, hairdressers, art galleries, nightclubs. Listened to music, socialise . . . It was about bringing people together and creating new social connections.

(F. Disegni, personal communication, 4 May 2017)

When Rentez-Vous started, there was no one doing something like this in London, except more formal hire services for occasion wear, such as wedding outfits. The big challenge was to educate people into the value of renting rather than owning clothing, and using a citizen-led approach founded in experiences, was important to making this transition. Three years on the challenge is how to compete successfully in a linear system and scale up the business.

“The biggest opportunity and challenge is to scale the business and work with big companies. It can only be done with them. They are not open to risk or wanting yet to innovate the change” (F. Disegni, personal communication, 4 May 2017).

For PSS to achieve sustainability, it needs considered design (Tukker & Tischner, 2016). Transitioning to a new business practice that involves the design, manufacture and distribution of fashion products destined for PSS, will require appropriate financial models that may present risks for many businesses (Prendeville, Sanders, Sherry, & Costa, 2014). Risks are predominantly financial, as companies will need to raise significant investment for these changes, without clear visibility that economic profitability will continue. There is also the underlying uncertainty that consumers will adapt to this change. In some cases, further challenges may stem from the

complexity and geographical spread of fashion's supply chain. Shifting to a new business model involves investment which is not always financially viable, particularly as most fashion companies are structurally locked in to a model which supports a fast turnover of products, which is necessary for their objectives to grow capital and ensure profit (Savaris, 2004).

The case studies exemplify PSS as niche, but as a viable business model. If sustainable consumption is to change then PSS must move from small scale and become a way for bigger brands to do business. The main barrier is lack of understanding as to whether there can be profitability. Changing requires investment, but PSS could offer a consistent revenue stream, and with a reduction in material and production costs, it should generate higher profit margins. PSS does require other investment, for example in transport and cleaning, which also have environmental impacts. These are factors which require further research, but the benefits could outweigh the negative impact, both economically and environmentally, if addressed correctly.

6. Conclusion and recommendations

The research, although small in its global reach, demonstrates that consumers are open to leasing rather than owning clothes, but that currently there are not enough opportunities to do this. While the linear model prevails, a complete shift will remain challenging, however, there could be opportunity for brands to implement this within their existing model. Through trial, the financial benefits and popularity of PSS may become more evident, thus enabling fashion to address the issues of climate change, and resource scarcity for the future. This research reveals that PSS based solutions for fashion brands should cater to the needs and desires of different target audiences and markets.

13 Product service systems

For businesses to adopt PSS on a short-term basis, initiatives from governments and third parties are required, which will also increase consumer awareness, and therefore, demand. On the consumer side, a change of mindset is crucial to accept new business models. Consumers will be more likely to adopt new schemes if they are convenient, visible, available and if influencers and peers have tried them. The future success of PSS as a viable business model requires a collaborative, multi-actor effort bringing brands and consumers together to achieve a more sustainable future.

Acknowledgements

We would like to thank the many participants of this study who shared their experiences and views and let us look inside their wardrobes. Thank you also to Fiona Disegni and Bert van Son for conveying their passions and struggles for a more sustainable fashion industry.

References

Accenture Strategy. (2015). *Circular advantage: Innovative business models and technologies that create value*. Retrieved from www.accenture.com/gb-en/insight-circular-advantage-innovative-business-models-value-growth

Allwood, J. (2014). Squaring the circular economy: The role of recycling within the hierarchy of material management strategies. In E. Worrell & M. A. Reuter (Eds.), *Handbook of recycling: State of the art for practitioners, analysts and scientists* (pp. 445–478). Oxford: Elsevier.

13 Product service systems

- Armstrong, C. M., Niinimäki, K., Lang, C., & Kujala, S. (2015). A use-oriented clothing economy? Preliminary affirmation for sustainable clothing consumption alternatives. *Sustainable Development*, 24(1), 18–31. <https://doi.org/10.1002/sd.1602>
- Baines, T., Lightfoot, H. W., Evans, S., Neely, A., Greenough, R., Peppard, J., Roy, R., . . . Wilson, H. (2007). State-of-the-art in product-service systems. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, 221(10), 1543–1552. <https://doi.org/10.1243/09544054JEM858>
- Barnado's. (2015). *Once worn, thrice shy: British women's wardrobe habits exposed!* Retrieved from www.barnardos.org.uk/news/press_releases.htm?ref=105244
- Birtwistle, G., & Moore, C. M. (2007). Fashion clothing: Where does it all end up? *International Journal of Retail and Distribution Management*, 35(3), 210–216. <https://doi.org/10.1108/09590550710735068>
- Briceno, T., & Stagl, S. (2006). The role of social processes for sustainable consumption. *Journal of Cleaner Production*, 14(17), 1541–1551. Retrieved from www.sciencedirect.com/science/journal/09596526/14/17?sdsc=1
- Campbell, C. (1992). The desire for the new. In E. Hirsch (Ed.), *Consuming technologies: Media and information in domestic spaces* (pp. 48–58). London: Routledge.
- Chapman, J. (2015). *Emotionally durable design: Objects, experiences and empathy*. London: Routledge.
- Cook, M. (2014). Fluid transitions to more sustainable product systems. *Environmental Innovation and Societal Transitions*, 12, 1–13. <https://doi.org/10.1016/j.eist.2014.04.003>

13 Product service systems

Department for the Environment, Food and Rural Affairs (DEFRA). (2010). *Less is more*. Business Opportunities in Waste and Resource Management, DEFRA, London.

Ellen MacArthur Foundation. (2014). *Towards the circular economy, Vol. 3: Accelerating the scale-up across global supply chains*. Retrieved from www.ellenmacarthurfoundation.org/publications/towards-the-circular-economy-vol-3-accelerating-the-scale-up-across-global-supply-chains

Goedkoop, M., van Haler, C., te Riele, H., & Rommers, P. (1999). *Product-service-systems, ecological and economic basics*. Report for the Dutch Ministries of Environment (VROM) and Economic Affairs (EZ).

Greenpeace. (2016). *Timeout for fast fashion*. Retrieved from www.greenpeace.org/international/Global/.../Fact-Sheet-Timeout-for-fast-fashion.pdf

Gregson, N., Crang, M., Fuller, S., & Holmes, H. (2015). Interrogating the circular economy: The moral economy of resource recovery in the EU. *Economy and Society*, 44(2), 218–243. <https://doi.org/10.1080/03085147.2015.1013353>

H&M. (2017). *Recycle your clothes*. Retrieved from <https://about.hm.com/en/sustainability/get-involved/recycle-your-clothes.html>

Hounslea, T. (2016, 14 November). UK offers untapped fashion rental market worth £1bn, says new report. *Drapers Online*. Retrieved from www.drapersonline.com/news/uk-offers-untapped-fashion-rental-market-worth-1bn-says-new-report/7014881.article

Kraus, S. J. (1995). Attitudes and the prediction of behavior: A meta-analysis of the empirical literature. *Personality and Social Psychology Bulletin*, 21(1), 58–75. Retrieved from <http://journals.sagepub.com/doi/abs/10.1177/0146167295211007>

Commented [w2]: Have added the 'te' before Riele

13 Product service systems

- LeBlanc, R. (2017, 31 January). *Textile recycling facts and figures*. Retrieved from www.thebalance.com/textile-recycling-facts-and-figures-2878122
- Minter, H. (2014, 17 January). *10 minutes with: Anna Bance, co-founder of Girl Meets Dress*. Retrieved from www.theguardian.com/women-in-leadership/2014/jan/17/anna-bance-founder-girl-meets-dress
- Mont, O. K. (2002). Drivers and barriers for shifting towards more service-orientated businesses: Analysis of the PSS field and contributions from Sweden. *Journal of Sustainable Product Design*, 2, 89–103.
<https://doi.org/10.1023/B:JSPD.0000031027.49545.2b>
- Niinimäki, K. (2011). *From disposable to sustainable*. Helsinki: Aalto University, School of Art and Design. Retrieved from <https://aaltodoc.aalto.fi/handle/123456789/13770>
- Pine, B. J., & Gilmore, J. H. (1998). *The experience economy*. Cambridge, MA: Harvard Business Press.
- Prendeville, S., Sanders, C., Sherry, J., & Costa, C. (2014). *Circular economy: Is it enough?* Cardiff: Ecodesign Centre of Wales.
- Rolls-Royce. (2012). *Rolls-Royce celebrates 50th anniversary of Power-by-the-Hour*. Retrieved from www.rolls-royce.com/media/press-releases/yr-2012/121030-the-hour.aspx
- Salvia, G., Braithwaite, N., Moreno, M., Norman, J., Scott, K., Sung, K., Cooper, T., . . . Hammond, G. (2016). *Understanding consumption*. Retrieved from <http://ciemap.leeds.ac.uk/index.php/2017/03/21/ciemap-report-understanding-consumption/>

13 Product service systems

- Sanne, C. (2002). Willing consumers: Or locked-in? Policies for a sustainable consumption. *Journal of Ecological Economics*, 42(1/2), 273–287. [https://doi.org/10.1016/S0921-8009\(02\)00086-1](https://doi.org/10.1016/S0921-8009(02)00086-1)
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1–65. [https://doi.org/10.1016/S0065-2601\(08\)60281-6](https://doi.org/10.1016/S0065-2601(08)60281-6)
- Tukker, A., & Tischner, U. (2006). Product-services as a research field: Past, present and future: Reflections from a decade of research. *Journal of Cleaner Production*, 14(17), 1552–1556. <https://doi.org/10.1016/j.jclepro.2006.01.022>
- Unilever. (2017). *Report shows a third of consumers prefer sustainable brands*. Retrieved from www.unilever.com/news/press-releases/2017/report-shows-a-third-of-consumers-prefer-sustainable-brands.html
- Vezzoli, C., Kohtala, C., & Srinivasan, A. (2014). *Product-service system design for sustainability*. Oxford: Greenleaf.
- Westfield. (2015). *How we shop now trend report 2015*. Retrieved from <https://uk.westfield.com/london/how-we-shop-now>
- Woodward, S. (2007). *Why women wear what they wear*. Oxford: Bloomsbury.
- WRAP. (2012). *WRAP reveals the UK's £30 billion unused wardrobe*. Retrieved from www.wrap.org.uk/content/wrap-reveals-uks-%C2%A330-billion-unused-wardrobe
- WRAP. (2013). Evaluating the financial viability and resource implications for new business models in the clothing sector. Retrieved from http://www.wrap.org.uk/sites/files/wrap/Clothing%20REBM%20Final%20Report%2005%2002%2013_0.pdf

Commented [NB3]: Correct reference added here and in text

13 Product service systems

WRAP. (2016). *Valuing our clothes*. The true cost of how we design, use and dispose of clothing in the UK. Retrieved from <http://www.wrap.org.uk/sites/files/wrap/VoC%20FINAL%20online%202012%2007%2011.pdf>

WRAP. (2017). *Sustainable Clothing Action Plan (SCAP)*. Retrieved from www.wrap.org.uk/sustainable-textiles/scap

Commented [NB4]: Have added a missing bit of this reference and the correct link