



HAL
open science

Sufficiency-based circular business models: An established retailers' perspective

Rémi Beulque, Helen Micheaux, Joël Ntsondé, Franck Aggeri, Chloé Steux

► **To cite this version:**

Rémi Beulque, Helen Micheaux, Joël Ntsondé, Franck Aggeri, Chloé Steux. Sufficiency-based circular business models: An established retailers' perspective. *Journal of Cleaner Production*, 2023, 429, pp.139431. <10.1016/j.jclepro.2023.139431>. <hal-04391545>

HAL Id: hal-04391545

<https://minesparis-psl.hal.science/hal-04391545v1>

Submitted on 21 May 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons CC BY-NC-SA 4.0 - Attribution - Non-commercial use - ShareAlike - International License

Journal of Cleaner Production

Sufficiency-based Circular Business Models: an Established Retailers' Perspective

--Manuscript Draft--

Manuscript Number:	JCLEPRO-D-23-15479R2
Article Type:	Original article
Keywords:	Strong Circular Economy; servitization; Repair services; Product rental services; Product durability; Repairability
Corresponding Author:	Rémi Beulque ISC Paris Business School FRANCE
First Author:	Rémi Beulque
Order of Authors:	Rémi Beulque Helen Micheaux Joël Ntsondé Franck Aggeri Chloé Steux
Abstract:	<p>Taking on the much-criticized concepts of green growth, bioeconomy, and efficiency, both sufficiency and, in certain circumstances, the circular economy, are presented as potential new paradigms that can play a central role in a transition towards a stronger sustainability and enable humanity to remain within planetary boundaries. In this context, this study aims to identify new sufficiency practices that have been adopted by retailers and to assess to what extent these practices have transformed their traditional business model, thus providing useful insights to practitioners, policymakers and the nascent academic literature on the topic. Through a combination of action research and case studies of the French actors Fnac-Darty and Decathlon, this article emphasizes that retailers may try to slow material and value loops by assessing products' repairability and durability and informing customers through a specific index, for certain products or more globally their overall product portfolio, but also by using such indexes in eco-design requirements to suppliers, supplier selection processes, and product purchasing policies. By favoring the most repairable products and excluding the least durable ones, retailers can also improve their value proposition to customers. Through concrete examples, this study also shows that sufficiency-based business models can be scaled up and describes some of the associated processes. On a less optimistic note, certain limitations of the observed ongoing upscaling processes are highlighted, amongst which are the limited number of retailers that have started this process, the limited contribution of these new practices to overall value creation and capture at the firm level, and clear evidence of rebound effects.</p>
Suggested Reviewers:	<p>Nancy Bocken nancy.bocken@maastrichtuniversity.nl - Author of the main paper that is discussed. - Chair of the track of a NBM conference where related research is discussed.</p> <p>Marc Dijks marc.dijks@maastrichtuniversity.nl Current research on sufficiency-related practices within firms</p> <p>Valérie Guillard valerie.guillard@dauphine.psl.eu Current research on sufficiency-based circular practices.</p> <p>Samuel Short sws1001@cam.ac.uk Current research on sufficiency-based BM.</p>

Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Highlights

New sufficiency-based circular practices adopted by retailers are identified.

Sufficiency-based business models can be scaled up.

Some key processes associated with scaling up sufficiency-based models are described.

Sufficiency-based models play only a minor role at the firm level.

Clear evidence that sufficiency practices can entail rebound effects is provided.

CRedit authorship contribution statement

Rémi Beulque: Conceptualization, Methodology, Investigation, Formal analysis, Writing - Original Draft. **Helen Micheaux:** Conceptualization, Methodology, Investigation, Formal analysis, Writing - review & editing. **Joël Ntsondé:** Conceptualization, Methodology, Formal analysis, Writing - review & editing. **Franck Aggeri:** Conceptualization, Methodology, Investigation, Formal analysis, Writing - Original Draft, Writing - review & editing. **Chloé Steux:** Conceptualization, Methodology, Investigation, Formal analysis, Writing - review & editing.

Sufficiency-based Circular Business Models: an established retailers' perspective

Rémi Beulque ^{a,d*}, Helen Micheaux ^b, Joël Ntsondé ^{c,d}, Franck Aggeri ^d, Chloé Steux ^e

^a ISC Paris, 75013, Paris, France

^b Paris-Saclay University, INRAE, AgroParisTech, UMR SAD-APT, 91123 Palaiseau, France

^c ISTECH, 75010 Paris, France

^d CGS-i3, UMR 9217, Mines Paris - PSL, 75006 Paris, France

^e Université Laval, QC G1V 0A6, Canada

*rbeulque@iscparis.com

Abstract

Taking on the much-criticized concepts of green growth, bioeconomy, and efficiency, both sufficiency and, in certain circumstances, the circular economy, are presented as potential new paradigms that can play a central role in a transition towards a stronger sustainability and enable humanity to remain within planetary boundaries. In this context, this study aims to identify new sufficiency practices that have been adopted by retailers and to assess to what extent these practices have transformed their traditional business model, thus providing useful insights to practitioners, policymakers and the nascent academic literature on the topic. Through a combination of action research and case studies of the French actors Fnac-Darty and Decathlon, this article emphasizes that retailers may try to slow material and value loops by assessing products' repairability and durability and informing customers through a specific index, for certain products or more globally their overall product portfolio, but also by using such indexes in eco-design requirements to suppliers, supplier selection processes, and product purchasing policies. By favoring the most repairable products and excluding the least durable ones, retailers can also improve their value proposition to customers. Through concrete examples, this study also shows that sufficiency-based business models can be scaled up and describes some of the associated processes. On a less optimistic note, certain limitations of the observed ongoing upscaling processes are highlighted, amongst which are the limited number of retailers that have started this process, the limited contribution of these new practices to overall value creation and capture at the firm level, and clear evidence of rebound effects.

1
2
3
4
5
6
7

Key words

8
9

Strong Circular Economy, Servitization, Repair services, Product rental services, Product durability, Repairability

10
11

Main text

12

1. Introduction

13
14
15
16
17
18
19
20
21

In the context of the war in Ukraine and the related energy supply challenges in the European continent, the concept of sufficiency, which entails reducing consumption and making do with less, has become a pressing issue for industry and society. Until recently this concept was seemingly not fully understood amongst policymakers and business organizations since it was often associated with degrowth and the negative connotations it implies for the economy and society (Walker et al., 2021).

22
23
24
25
26
27
28
29
30
31

This recent trend echoes academic debates. These debates present both sufficiency and, in some circumstances, the circular economy, as potential new paradigms that can play a central role in the transition towards a stronger sustainability and enable humanity to remain within planetary boundaries (Alexander, 2012; Bocken and Short, 2020). While there are various definitions of the concept, sufficiency is traditionally understood as an organizing principle aimed at bringing both production and consumption within natural limits, through a new paradigm in which *enough* would be desirable (Princen, 2003; Spangenberg and Lorek, 2019).

32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49

Firms have a role to play in fostering a transition at the macro level. At their micro level, they can adopt more disruptive business models, which focus on slowing material and value loops through sufficiency-based circular business models (Bocken and Short, 2016). If these are upscaled and become widely adopted amongst and across industry players, they could affect more macroeconomic level phenomena such as consumption modes, industry structures or natural resource consumption (Aggeri et al., 2023). Nonetheless, this issue remains an emerging topic in academic spheres (Jungell-Michelsson and Heikkurinen, 2022; Niessen and Bocken, 2021). It is also still only an emerging trend, especially in established firms with traditionally linear business models. In such organizations, these newly launched circular business models, in which recycling activities are over-represented, are in many cases simply additions to the company's business model portfolio. Moreover, their traditionally linear business models, based on ever-increasing volumes and resource consumption, is not or only marginally affected. Therefore, these changes in practices stay limited to a weak circularity approach (Aggeri et al., 2023; Alberich et al., 2023).

50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

Retailers in particular could play a significant role in fostering sufficiency at macro level. Indeed, the fact that their traditional business model is centered on a purely volume-based approach gives them strong leverage in the event of a transition towards more sufficiency-based strategies. In parallel, this traditional volume-based approach is intrinsically unsustainable and constitutes a strong challenge to any transition, as it is the core of value creation and capture at firm level (Bocken and Short, 2021). Nonetheless, some retailers in France have recently begun to investigate sufficiency strategies (Aggeri et al., 2023). In addition to consumers' increasing demand for sustainable products, sometimes coupled with the desire to lower their level of consumption, recent regulations and lawsuits are driving a

1 growing interest in these models. Indeed, after initial legislation that extended legal
2 warranties (Law n°2014-344) or forbade planned obsolescence (Law n°2015-992), the AGEC
3 Law (MTE, 2020) passed in 2020 introduced several measures such as repairability and
4 durability indexes concerning specific product categories, financial mechanisms to support
5 product repair and reuse, minimum availability periods for spare parts in certain industries,
6 bans on the destruction of unsold products, and reuse targets in Extended Producer
7 Responsibility schemes. In addition, several lawsuits have been launched by the NGO HOP
8 (Halt to Planned Obsolescence) against firms such as Apple on the grounds that they have
9 encouraged planned obsolescence or have intentionally limited the repairability of their
10 products (HOP, 2022).
11

12 In this context, based on the Business for Sufficiency (BfS) framework (Niessen and Bocken,
13 2021) the present research focuses on (1) identifying new sufficiency practices that have
14 been adopted by retailers and (2) on assessing to what extent these practices have
15 transformed the traditional business model of these actors. To this end, the article will
16 answer the following research question: How and to what extent can sufficiency-based
17 circular strategies transform established retailers' business models? Through a combination
18 of action research and case studies, the article aims at providing useful insights for
19 practitioners and policymakers seeking to implement sufficiency initiatives and at contributing
20 to the nascent academic literature on the topic.
21
22
23
24
25

26 **2. Literature review**

27 Researchers agree that we are living in an era called Anthropocene, characterized by the
28 fact humans are the driving force shaping the planet and having a major impact on nature
29 (Reichel and Perey, 2018). By 2022, the impacts of human activities on natural ecosystems
30 had led to six of the nine planetary boundaries being breached (Wang-Erlandsson et al.,
31 2022).
32
33

34 In this context, sustainability considerations have gained increasing prominence within
35 academia, industry, and broader public discourse. However, a growing number of
36 researchers criticize traditional sustainability paradigms such as green growth, bioeconomy,
37 efficiency or belief in purely technological solutions as inadequate to address pressing
38 environmental concerns, and instead advocate stronger sustainability paradigms (Alexander,
39 2012; Kurz, 2019; Parrique, 2020). Indeed, rebound effects and ever-increasing resource
40 consumption limit these traditional paradigms to promoting weak sustainability patterns at the
41 best (Wiedmann et al., 2020).
42
43
44

45 Both sufficiency and, in certain circumstances, the circular economy, have been presented
46 as potential new paradigms that can play a central role in a transition towards such a
47 stronger sustainability and enable humanity to remain within planetary boundaries
48 (Alexander, 2012; Bocken and Short, 2020; Jackson, 2005; Velenturf and Purnell, 2021).
49

50 While there are various definitions of the concept, sufficiency is traditionally understood as an
51 organizing principle aimed at bringing both production and consumption within natural limits
52 (Princen, 2003). Its core assumption is based on the idea that the current search for 'more
53 and faster' needs to be replaced by a new paradigm, in which 'enough' would be desirable
54 (Spangenberg and Lorek, 2019). As evoked by Jungell-Michelsson and Heikkurinen (2022),
55 sufficiency is understood both normatively as an end in itself and more descriptively, as a
56 means to bring consumption and production within ecological limits. In the literature,
57 sufficiency is mostly seen through the lens of customer behavior, with a view to consuming
58
59
60
61
62
63
64
65

better and less through self-imposed restrictions based on conscious values and norms (Allievi et al., 2015; Guillard, 2019; Sandberg, 2018).

In contrast, scholars stress that a paradigm shift is needed for the circular economy to reach its full potential. Indeed, current policies, business organizations' practices and discourses mainly belong to what is beginning to be called a weak circularity paradigm. Even if the concept isn't comprehensively characterized yet, it entails no real hierarchy between circular strategies, and most of the time a focus on recycling activities, at the margin of a growth-oriented paradigm that is neither questioned nor modified (Aggeri et al., 2023; Alberich et al., 2023; Stål and Corvellec, 2018). In opposition to this, a growing number of voices advocate a strong circularity approach that would, amongst other features to be specified, be sufficiency-based (Aggeri et al., 2023; Arnsperger and Bourg, 2017; Bocken and Short, 2020). Indeed, to date, no current sustainability paradigm enables the decoupling of GDP from the material footprint of human activities, whereas the extraction and processing of materials, fuels and food is responsible for half of total global greenhouse gas emissions, and more than 90 per cent of biodiversity loss and water stress (EEA, 2021; UNEP, 2019).

At a micro level, previous research has shown that experimentation of new business models is a key pathway for accelerating the circular economy transition in established organizations and in startups (Adoue et al., 2014; Jørgensen & Pedersen, 2018).

Some companies have been successful at creating business models focused on resource efficiencies and 'narrowing' (Bocken et al., 2016) or 'intensifying' and closing loops through 'cycling' (Beulque et al., 2018). In many cases, and especially in established firms with traditional linear business models, the circular business models that are being experimented are based on recycling activities, and constitute just another activity in the company's business model portfolio (Aggeri et al., 2023; Stål and Corvellec, 2018). Indeed, their traditional and unsustainable linear business models, based on ever-increasing volumes and resource consumption, are not or only marginally affected, thereby limiting these changes to a weak circularity approach (Aggeri et al., 2023; Bocken and Short, 2021; Corvellec and Stowell, 2023).

More challenging business models, that require rethinking and disrupting the linear economy business status quo are, however, much less common and are less understood by practitioners (Blomsma et al., 2022; Walker et al., 2021). Niessen and Bocken (2021) have identified twelve different strategies that companies can leverage to drive sufficiency (see Table 1). These include reuse, life extension and demand reduction services or moderating sales, exchange platforms, support for repair, short distance promotion, design, and awareness raising. Such strategies have been integrated into a tool called the Business for Sufficiency framework. Nonetheless, these more disruptive models, which contribute to stronger circularity approaches by focusing on slowing material, energy and value loops through sufficiency-based circular business models, are still only a nascent topic (Jungell-Michelsson and Heikkurinen, 2022; Niessen and Bocken, 2021).

	Rethink <i>Consume differently</i>	Reduce <i>Consume less</i>	Refuse <i>Don't (over)consume</i>
Less clutter <i>Simplified & less</i>	- No ownership (N.O.) - Personalized production - Green alternative	- NO.+ price incentive - Demand reduction service	- Moderating sales - Question consumption
Less speed <i>Slower & more reliable</i>	- Reuse - Personalized production	- Life extension service - Long product warranties	- Question consumption

	- Green alternative		
Less distance <i>Regional & disentangled</i>	- Green alternative	- Short distance promotion	- Question consumption
Less market <i>Beyond commerce</i>	- Open-Source creation - Exchange platforms	- Support for repair & reuse - Exchange platforms	- Support for self-sufficiency
	Design	Awareness raising	

Table 1: the Business for Sufficiency framework (Niessen and Bocken, 2021)

In this context, the present study seeks to provide readers with some insight about how and to what extent sufficiency-based circular business models can transform established retailers. More precisely, it analyzes how these new models can transform retailers' traditional business models, and which new business models or value propositions have been developed, as an addition to the existing portfolio.

Indeed, established retailers constitute core actors of the linear economy at a global scale, with unsustainable traditional business models based on an ever-increasing volume of new products and resource consumption (Bocken and Short, 2021). Together with more disruptive circular entrepreneurs, platforms and Extended Producer Responsibility schemes, established firms from the linear economy can play a key role in the transition to greater circularity (Beulque *et al.*, 2018). Building upon Niessen and Bocken (2021), the article aims to identify new insightful sufficiency-based circular practices, which will complement those that have already been identified by the Business for Sufficiency framework.

The upscaling of business models based on a strong circularity approach is another key research gap in the literature. Indeed, these models would need to grow further than experimentation on a limited scale to move beyond weak circularity approaches and be able to represent a significant part of value creation at firm level, be considered attractive enough to be widely adopted by numerous actors as a core business model, and thus play a crucial role in a transition at the macroeconomic level (Aggeri *et al.*, 2023; Sandberg and Hultberg, 2021). Therefore, the present study also sought to assess to what degree these new practices change the overall organization and value creation of the analyzed retailers, the associated processes, and the limitations to these trends.

3. Research design

As already stated, the goals of this article were to (1) enrich the Niessen and Bocken (2021) Business of Sufficiency framework by identifying other strategies that could be implemented by established retailers, and (2) to understand whether and to what extent related practices could be upscaled. To this end, a two-stage research was carried out.

3.1. Phase 1: Exploratory search of potentially relevant firms

During an initial exploratory phase, the study aimed at identifying potentially innovative firms that would experiment sufficiency practices and try to upscale their related business models.

Actors were selected on the basis of two main criteria. Given that our project was to study established retailers, firms were first selected according to their importance in the French market. In this initial selection, actors known for experimenting sufficiency-based circular business models were opted for. In addition to what was known to the authors, several types of data were searched by means of keywords (see Appendix A) and used, including firms'

communication documents available online, grey literature about sufficiency strategies, social network feeds such as LinkedIn, and discussions with experts and the civil society organization HOP (Halt to Planned Obsolescence), which is working on sufficiency.

This first phase permitted to identify two innovative firms, which were chosen as case studies for the second part of the research (see Table 2).

Retailers	Key features	Reasons for selection
Fnac-Darty	<p>Leading retailer in France for Electrical and Electronic Equipment, IT goods, and cultural goods.</p> <p>Turnover (2021): EUR 8 billion.</p>	<ul style="list-style-type: none"> - Emphasis on product repairability and durability. - Potential evolution of elements of the business model based on repairability and durability. - Potential upscaling of repair services.
Decathlon	<p>Leading retailer in France for sport equipment and clothing.</p> <p>Turnover (2021): EUR 3.4 billion.</p>	<ul style="list-style-type: none"> - Potential upscaling of rental services. - Potential strategy for assessing products' eligibility to sufficiency-based circular business models.

Table 2: Retailers selected for the Phase 2 of the research

3.2. Phase 2: Action-research and in-depth analysis of two innovative case studies

3.2.1. Data collection

In this second phase, primary and secondary data were collected on the two firms. Primary data was collected through 26 main semi-directive interviews (see Table 3 and Appendix B.1.), communication documents available online, commercial websites, visits in design center, and financial communication documents. This data was progressively identified through iterative online searches based on companies' names, the names of the services, tools and initiatives they had developed, the companies they had acquired when relevant, and the key practices that had been identified during interviews (see Appendix A). Additional primary data, collected between November 2022 and March 2023 for another study centered on the perception of the French repairability index by its key stakeholders, was also used. In the case of Darty, it had been gathered through ten interviews of salespersons, based on four visits of three different shops (see Table 3 and Appendix B.2.).

Firm	Position	Number of interviews	Id
Fnac-Darty	Service and Durability Director	5	FD1
	Technical Director in charge of Products Life Extension	1	FD2
	Lead 'aftersales service barometer' data analyst	1	FD3
	Shop salespersons	10	FD4
Decathlon	Durability and Repairability Design and Offer manager	6	D1
	Renting services leader	2	D2

	Brand owner	4	D3
	Brand sales managers	4	D4
	Sustainable development leader	2	D5
	Sustainable development project manager	1	D6

Table 3: List of interviews conducted

The interviews with Decathlon eventually enabled one of the authors to propose an action research to the company, as part of the firm's strategy to develop sufficiency-based business models.

Action research aims to create new models and to implement them so as to participate in the transformation of a company. It is particularly suited for creating knowledge that is relevant to both practitioners and academics (Mihalic, 2016). It is useful to accelerate research in pressing issues such as sustainability challenges, and can be fruitfully combined with case studies (Prendeville et al., 2017).

During four months in early 2023, this action research at Decathlon concentrated on testing no ownership business models for two of Decathlon's sport-specific brands. With one of these brands, the goal was to organize a first test on products to be defined, and depending on products characteristics, also to be specified during the action research. First concrete customers were identified, based on target customer types defined by the firm, and their interest in a potential offering was tested. Following this test, recommendations were carried out on approaches to potential business models. With the other sport-specific brand, a critical assessment of a first test of a no ownership business model, which had been previously carried out on a given product, was formulated. It was based on internal data analysis and interviews with the key internal and external stakeholders who had participated in it.

From the rich data that action research is able to collect, detailed notes were taken concerning new sufficiency practices, related challenges, and the extent to which they could transform the traditional business model of the actor. In addition to helping to collect confidential data about the ongoing upscaling process at firm-level and its limitations, this data would prove useful in the data analysis phase, to triangulate primary data collected through interviews and to reinforce their validity.

Secondary data was collected to complement the primary data, through video and written interviews, newspaper articles, French language grey literature about sufficiency strategies and interviews with experts from the civil society organization HOP. This data concerns the practices of Decathlon and Fnac-Darty and, when available, of other France-based retailers. It was collected through the same process as the primary data that had been gathered in addition to interviews, through iterative online searches based on company names, the names of the services, tools and initiatives they had developed, the companies they had acquired when relevant, and the key practices that had been identified during interviews (see Appendix A).

3.2.2. Data analysis

Data analysis followed a three-step process. At first, data was analyzed based on the Business for Sufficiency framework, which was used to identify new sufficiency practices. The analysis process consisted of coding of the data, comparing the codes and identifying themes (Braun and Clarke, 2006). Inductive coding was used, with no codes predefined ahead of time, in order to identify the various new sufficiency practices in an exploratory and iterative process (see coding samples in Appendix C). These themes were later used to structure the narration of the related results sections (4.1. and 4.2.). Whenever possible, their degree of adoption by other actors was assessed by comparing the practices of Decathlon

1 and Fnac-Darty to those of other France-based retailers. Ultimately, newly identified
2 sufficiency practices were classified on the two axes of the Business for Sufficiency
3 framework (see Table 1). On the one hand, this framework distinguishes whether the
4 practices involve rethinking, reducing or refusing consumption. On the other hand, it
5 distinguishes strategies that entail less clutter, less speed, less distance or less market.

6
7 Second, in a complementary manner to the static approach of the Business for Sufficiency
8 framework (Niessen and Bocken, 2021), which aims at identifying practices and classifying
9 them depending on their effects, a dynamic approach was adopted to analyze to what extent
10 these practices transform the traditional business model of the actors. A mix of inductive and
11 deductive coding was used to analyze this upscaling process and its limitations (see
12 Appendix C). Deductive coding, with pre-established codes, was used to track the presence
13 of data such as turnover (growth, percentage, targets), gross margin, potential impact on the
14 material footprint of the companies, number of customers in a year, number of products
15 covered by value propositions, and the evolution of the business compared to previous
16 years. In contrast, inductive coding was used to unravel the limitations of these upscaling
17 processes, with codes that progressively emerged through an iterative analysis that enabled
18 the data to be explored. These codes were later used to structure the narration of the related
19 results section (4.3.).
20
21

22
23 Triangulation was used to reinforce the validity of the results (Dumez, 2016). Primary data
24 extracted from the main interviews was systematically compared with secondary data and
25 other primary data from online communication documents, commercial websites, financial
26 communication documents, interviews with in-store salespersons and notes taken during the
27 numerous interactions that occurred during the action research process.
28
29
30

31 **4. Results**

32
33 This section is divided into three parts. At first, the article showcases the innovative
34 sufficiency strategies that were identified and the processes through which Fnac-Darty (4.1.)
35 and Decathlon (4.2.) try to upscale them. Whenever possible, these practices are compared
36 to those of other retailers. In the third subsection, evidence of such upscaling processes and
37 their limitations are provided (4.3.).
38
39
40

41 **4.1. Sufficiency practices and upscaling processes at Fnac-Darty**

42
43 The different practices that were identified are classified according to their impact on the
44 firm's overall business model. This section therefore starts with less impactful practices,
45 which only affect reporting and customer information routines, and concludes with processes
46 that have a more substantial impact, since they modify core components of the firm's
47 business models and value propositions.
48
49
50

51 **4.1.1. Assessment of product repairability and customer information**

52
53 In France, product repairability has improved in recent years, as several retailers are
54 beginning to assess the repairability of some of their products and to improve customer
55 information.
56
57

58 Indeed, the French AGECE law introduced a repairability index, which became mandatory on
59 first products (televisions, laptops, smartphones, some washing machines and lawnmowers)
60
61
62
63
64
65

1 in 2021, and has since been extended to other electrical equipment. The index aims to better
2 inform customers about the repairability of products. It consists of a score from 0 to 10
3 according to the characteristics of the product, based on criteria defined by law. A few
4 months after its entry into force, the French Ministry of Economy launched a campaign
5 regarding its implementation, which revealed that 42% of retailers' physical stores still did not
6 correctly display this repairability index (DGCCRF, 2021). Nonetheless, these figures confirm
7 that assessing product repairability and improving customer information is becoming a
8 dominant practice, which can be observed among actors such as Ikea, Decathlon, Fnac-
9 Darty and Leroy Merlin. These practices, however, are limited to the small number of product
10 categories covered by law.

11
12 Fnac-Darty stands out amongst these actors because repair is an older and more
13 widespread practice that the firm adopted to differentiate itself from its competitors. Indeed,
14 the firm has played a key role in putting on the public agenda the mandatory repairability
15 index. The company was the first to create a repairability index in 2018, with the idea of
16 convincing the public authorities of its relevance and the need to make it mandatory in order
17 to respond to consumers' demand for extending the lifespan of products.

18
19
20 *"We independently decided to create a repairability index, together with an NGO (HOP,*
21 *which stands for Halt to Planned Obsolescence), and then we communicated about it. It was*
22 *a seminal decision for us. We then invited the Secretary of State for the Ecological Transition*
23 *in order to explain to her how it worked, and we shared our repair data with ADEME (French*
24 *environmental agency) to help it develop its own statistics".* Technical Director in charge of
25 Products Life Extension, Fnac-Darty
26

27
28 Since 2018, Fnac-Darty has also launched a comprehensive tool called "Baromètre du SAV"
29 ('Aftersales service barometer'). Its scope is more ambitious, since it already encompassed
30 15 product families at the outset, a number that had increased to 77 categories by 2021. This
31 unique in-house tool has made it possible to evaluate not only the repairability of products,
32 but also their durability, thanks to feedback from its after-sales service and customer surveys
33 on product reliability. In 2021, this barometer used as input the data of 41 000 customers and
34 721 000 repair interventions, which gives the company a unique competence. Specific efforts
35 to promote the visibility of this tool in the company's shops and in vendor training may also
36 be highlighted.
37

38
39 This strategic move needs to be situated within the history of the firm, in that after-sales and
40 repair services have featured in its value proposition since its creation, and are key assets in
41 differentiating itself from its competitors.
42

43
44 *"We are the last fully integrated distributor. We have 2,500 people in our after-sales service.*
45 *It's unique in Europe. We are the leading repair company for electrical and electronic*
46 *products. [...] This is an asset that other retailing companies don't have and it is a model that*
47 *is difficult to replicate as it requires between two and three years to train a skilled repair*
48 *technician. BUT and Conforama historically had repair activities, but they sold them. Only*
49 *Boulangier still owns a similar business though a subsidiary".* Service and Durability Director,
50 Fnac-Darty
51
52

53 54 55 **4.1.2. Extensive assessment of the repairability and durability of the product** 56 **portfolio** 57

58
59 Fnac-Darty goes further in its pioneering practices in terms of repairability. The firm has
60 developed a global index at company level. While other actors only display the repairability
61
62
63
64
65

1 index of products, and only for the limited number of products for which it is mandatory by
2 law, Fnac-Darty's tool combines the repairability and durability scores of a large number of
3 product families, including small and large electronic equipment, and IT products. This tool,
4 based on data from the firm's 'after-sales service barometer', provides a broader and more
5 comprehensive assessment of the evolution of its product portfolio and value proposition in
6 terms of repairability and durability.

7
8 By means of this tool, the company is able to measure its overall progress as well as the
9 different criteria that compose the score. The tool also enables the firm to evaluate the
10 performance of different brands within the same product family, as well as for the low-
11 repairability and low-durability categories. For instance, Fnac-Darty shows that its index
12 increased from 100 in 2018 to 105 in 2019, mainly due to longer availability of spare parts,
13 which rose from seven to ten years, and therefore impacted the repairability of older
14 products. In the same year, it also stressed that the main improvement concerned large and
15 small appliances, whereas major improvements were still needed for TVs, connected
16 watches and electric scooters. Thanks to its aftersales service, the company can also find
17 out the average replacement age of its products and inform customers about the average
18 price of spare parts.
19

20
21 *"We can now tell our customers that spare parts represent on average 7% to 8% of the price*
22 *of the new product, but that when it comes to TVs, for example, it peaks at 25% to 57%".*

23
24 Technical Director in charge of Products Life Extension, Fnac-Darty
25

26 27 **4.1.3. Eco-design prescriptions and support to suppliers**

28
29 Several France-based retailers are also beginning to voluntarily use the repairability index as
30 an eco-design tool and integrate its various criteria (availability of technical documents and
31 spare parts, price of spare parts, disassembly) into the specifications they impose on their
32 suppliers. This practice is often applied to more product categories than those covered by the
33 law, in anticipation of future extensions of its scope. For example, in anticipation of the future
34 durability index imposed by the AGEC law, actors such as Fnac-Darty are also introducing
35 related criteria (repairability, reliability, upgradeability) into these specifications.
36

37
38
39 *"Suppliers increasingly tell us that they are waiting for the results of our 'after-sales service*
40 *barometer', and our teams are being asked to provide support on how to enhance*
41 *repairability and durability".* Service and Durability Director, Fnac-Darty
42

43
44 Interestingly, suppliers, and especially the big players, report that they are beginning to take
45 these new eco-design criteria into account, since their brand reputation is at stake. This trend
46 exceeds the case of Fnac-Darty. Nonetheless, it appears to be more impactful for the
47 manufacturing suppliers of the 77 product families monitored by its 'Aftersales Service
48 Barometer', which state they are awaiting its annual results. At Fnac-Darty, these
49 specifications are complemented by "improvement plans" for suppliers who obtain the worst
50 results.
51

52 53 54 **4.1.4. Selection of manufacturing suppliers, product purchasing and evolution of** 55 **retailers' value proposition** 56

57
58 Fnac-Darty also uses its barometer in its supplier selection and product purchasing policies.
59 In the absence of improvements on the part of the supplier, products whose score is below a
60 certain threshold are delisted. In contrast, the highest rated products are promoted through
61
62
63
64
65

1 an internal label called 'les produits durables' (Durable products). Interestingly, Fnac-Darty
2 claims that being classified in this product category can have a dramatic effect on sales,
3 which can increase "by a factor of 4 to 10".
4
5

6 **4.1.5. Diversification and upscaling of maintenance and repair services**

7
8 Several retailers are also beginning to develop a diversity of repair services. Along with the
9 repair cafés that have flourished in grassroots organizations and gatherings during which
10 people can help each other repairing a variety of products, these services include access to
11 technical documentation, online videos and tutorials, and 3D printing of spare parts. Online
12 or on-site repair activities by technicians are also growing, as well as in stores and dedicated
13 centers. Depending on the retailer, these activities are internalized or offered to customers
14 through partnerships. For instance, Decathlon offers repair services for several product
15 categories such as tents, bikes, fitness equipment, scooters, kayaks, plus some climbing,
16 snorkeling, and riding equipment. While the interviewees admit that repair services are
17 currently limited compared to the company's overall product portfolio, they appear to be
18 swiftly expanding, as the feasibility of launching such services is reportedly being assessed
19 for "dozens of new product categories". In a similar way, Leroy Merlin organizes repair cafés,
20 and partnered with Spareka, to promote auto-repair through 3D printing of spare parts and
21 online tutorials.
22
23
24

25 *"Upscaling repair services is a fantastic way to create value through the expertise of our*
26 *after-sales service, while enhancing products lifespan"* Service and Durability Director, Fnac-
27 Darty
28

29
30 Nonetheless, the most noteworthy change can be attributed to Fnac-Darty. In addition to the
31 diversification of its repair services, the firm has significantly upscaled repair and
32 maintenance services through a monthly subscription revenue model. The firm launched the
33 'Vanden Borre Life' offer in Belgium early 2021, and partnered with WeFix to offer fast
34 smartphone repair services to its customers. Most importantly, it launched three offers called
35 Darty Max from 2019 to 2021, which includes unlimited and priority access to repairs by a
36 technician. The subscription covers a technical diagnosis, the cost of labor and free supply of
37 spare parts, and applies both to products sold by Fnac-Darty and to non-Fnac-Darty
38 products. In the event that the product cannot be repaired, a voucher is provided.
39 Maintenance services are also included, with an annual video call with a service expert and
40 access to online advice and tutorials. The difference between the three offers concerns the
41 number of product categories covered: €9.99/month provides cover for large electric
42 appliances; €14.99/month provides customers with additional repair and maintenance
43 services on small appliances, televisions, and sound equipment; and €19.99/month extends
44 the coverage to cameras and multimedia such as computers and printers. According to
45 interviewees, this offer appears to be making a promising contribution to the company's
46 gross margin and value creation. Interestingly, this subscription model is starting to be
47 imitated, since another France-based retailer, Boulanger, launched a similar offer in 2023.
48
49
50
51
52
53

54 **4.2. Sufficiency practices and upscaling processes at Decathlon**

55
56 At Decathlon, sufficiency-based circular business models appear to be upscaling through two
57 main processes.
58
59
60
61
62
63
64
65

4.2.1. Experimentations to upscale a diversity of rental services

Decathlon is currently carrying out experiments to scale up rental services, which were launched in the mid-2010s through several Proofs of Concept (PoC). This upscaling of its concept of 'sport as a use' involves various processes. A growing number of the company's sport-specific brands, for instance related to rock-climbing or horseback-riding, are testing this model on various product categories. Their goal is to go further than the products that were originally rented, such as bikes, and fitness, camping, skiing and surfing equipment. Once successfully tested, mostly in France and Belgium, these rental services are being gradually deployed in other mostly European countries.

In parallel to this brand-centered approach, the extension of the number of products that can be rented is reinforced by an experiment called 'We Play Circular', often referred to as a 'Sports Netflix' or 'Spotify'. During its initial test phase, 70 Belgian families were allowed to access all the products of two Belgian shops, based on three subscription formulas. For €20 per month, they could use as many products as they wanted from these shops, up to a limit of €400 worth of equipment. If the customers agreed to pay €40 per month, they could use equipment up to a value of €1,000. Finally, €80 per month enabled them to use up to €2,000 worth of equipment. After the success of the first test phase, We Play Circular launched a second test phase in 2023, based on 2,000 families with shops located in Belgium and France. Amongst other findings, this phase will enable Decathlon to better understand for which products rental is desirable and traditional stores represents a suitable distribution channel.

"Short-term, long-term, products, brands, type of customer, ... we launch new experiments in every possible way". Renting services leader, Decathlon

In addition to traditional shops, this upscaling process is based on testing online distribution, and distribution through networks of partners. For instance, managers are faced with similar questions: Is it more appropriate to rent martial arts clothing in shops, or directly in the sports clubs where customers will use it?

This upscaling process also results from the multiplication of rental service durations. Short-term rentals, by the day or week, have already been tested since 2018 for various equipment such as skiing and surfing gear or paddle boards, and seem to correspond to seasonal use of specific products in specific geographical locations. For example, short-term rentals of surfing equipment have potential in summer for some oceanfront stores. Even though this type of rental is judged to be able to participate in the upscaling process, through its deployment for a growing number of products, stores and countries, managers naturally consider it limited to certain products, seasons and locations.

Experimenting with medium-term, month-long rentals for new brands and products also supports the upscaling process of rental services. Such a model is already being implemented for bikes, golf equipment and fitness gear in more than 300 French stores as well as in other countries such as Belgium and Spain. This medium-term rental model is also the one followed by "We Play Circular". In its second test phase, all the products of certain stores will be available for renting, with a 3-month minimum duration. Following on from products such as electric bikes, new tests are now being launched for long-term rental, over minimum periods of a year, for equipment that requires a significant financial investment for customers.

Finally, this process of diversification of rental services is prompting Decathlon to go beyond its traditional business-to-customer position, and to consider new customers such as sports clubs, in a business-to-business approach.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

4.2.2. Systematic assessment of products' eligibility for sufficiency-based circular business models

The development of diversified rental services appears to be part of a more global strategy. Indeed, Decathlon is beginning to systematically assess the eligibility of products for various circular business models. A number of experiments have shown that certain products do not seem to be suitable for rental services, as customers expressed little or no interest in such a formula. Instead, they showed a preference for repairing and reusing products. For instance, Decathlon concluded that rental is not appropriate for sports shoes or fleece jackets, which customers prefer to buy and then sell as a second-hand item. In this context, different brands of the group are currently conducting a systematic review of their product categories to determine which sufficiency-based business model they would be best suited to.

16
17
18
19
20

"We are screening all the product families of the brand, to determine whether they are more suited to rental, reuse, repair, or in some cases just recycling". Brand owner, Decathlon

21
22

4.3. Sufficiency-practice upscaling processes: evidence and limitations

23
24
25
26
27
28
29

In this subsection, the article provides evidence that sufficiency-based circular business models are undergoing an upscaling process in these two French retailers, to the point they could play a significant role in the global value creation and capture processes at firm level. Some of the limitations of these processes were also highlighted.

30
31

4.3.1. Evidence of ongoing upscaling processes

32
33
34
35
36
37
38
39
40
41
42

At Fnac-Darty, Darty Max repair and maintenance subscription and WeFix appear to be starting to become key value creation drivers. While their contribution to the group's overall turnover is confidential, both firm's managers and its public communication claim to have observed an upsurge, and interviewees are on agreement that repair services have already made a 'double-digit contribution' to its revenue just four years after the launch of Darty Max. By 2025, the aim for Darty Max to account for a third of the firm's turnover. This value proposition also plays a significant role in capturing value, with a gross margin "much higher than average".

43
44
45
46

"This (Darty Max) is a profitable activity for us. As we have skills and precise data on repair costs, we are able to set subscription prices in such a way that we generate sufficient margin." Service and Durability Director

47
48
49
50
51
52
53
54
55
56
57

Other figures confirm this trend. As confirmed by press releases from the company, at the end of 2021, 500,000 customers had subscribed to Darty Max, against only 200,000 a year earlier. Late 2023, the service attained a million subscribers. To reach its publicly communicated objective of 2 million subscriptions by 2025, the offer is now available online and in all of the group's stores, and covers more than 4 million products. In 2019, its after-sales service reported 620,000 repairs carried out, making it the leading firm in France for repair activities. By 2022, that number had risen to 1.1 million. The company expects to reach 2.5 million per year by 2025. For its part, WeFix repaired more than 250,000 smartphones in 2020.

58
59
60
61
62
63
64
65

With a lag of a few years, Decathlon appears to be undergoing a similar upscaling process, through the implementation of sufficiency-based business models for a growing number of

1 products. The precise revenue target and contribution to the company's overall revenue is
2 confidential. Nonetheless, managers state that a double-digit contribution to the firm's value
3 creation is expected by 2026, less than a decade after its first experiment. Similarly,
4 managers claim that in-store rental services may be nine to thirteen times more profitable
5 than the traditional sales-based model. Other figures testify to this trend, with 20 000 bike
6 rentals in 2022, and 40,000 product references covered by its monthly subscription rental
7 service.

10 **4.3.2. The limitations of ongoing upscaling processes**

11 The implementation and willingness to foster sufficiency-based models upscaling is a
12 relatively new phenomenon, whereas business transformation processes are inherently long-
13 term processes. Therefore, at this stage, any conclusion can only be provisional.
14 Nonetheless, these upscaling processes appear to face serious limitations.

15 First, such strategies have only been adopted by a limited number of pioneering retailers,
16 when sufficiency at a macro level would require wider adoption.

17 Second, even when adopted by established retailers, these practices appear to remain minor
18 – or minority – business models, among an overall portfolio of business models that is still
19 linear and volume-based. Indeed, neither the financial communication nor the carbon
20 emission scenarios of actors such as Decathlon or Fnac-Darty show that these practices
21 could eventually account for the major part of the firms' value creation, or that these actors
22 decided to give up on volume-based growth. In fact, there are also uncertainties about the
23 percentage of the actors' product portfolios that would ultimately be considered as suited to
24 sufficiency-based models.

25 *“Many entry-level products will be replaced by second-hand ones, but we are no exception,
26 we haven't renounced to growth in sales volumes.”* Brand sales manager, Decathlon

27 Third, concern about the possible cannibalization of their traditional linear value propositions
28 has motivated these retailers to establish synergies between sufficiency-based and
29 established volume-based models, which in turn can induce rebound effects. For example,
30 Fnac-Darty offers vouchers to its Darty Max subscribers when their products can't be
31 repaired, as well as free delivery and special offers related to new products. It also concludes
32 that Darty Max subscribers have a purchasing frequency “1.5 times higher than the average”
33 of its non-subscribing customers, and an average basket size 25% higher. While this data
34 does not imply that repair services cannot reduce sales in the long run, due to the fact
35 products are kept in service for longer, it does provide clear evidence of a rebound effect
36 through increased sales in the short term. Managers face here a traditional limitation of
37 emerging circular business models, whose acceptance by trade departments often requires
38 synergies with traditional linear business models (Beulque *et al.*, 2018).

39 Fourth, additional research is still required to confirm that some business models, such as
40 rental services, systematically have a slowing effect on material flows, and conversely cannot
41 in some cases accelerate them, for instance if products were to be oriented towards
42 recycling after being used only for a short period of time. Faced with these methodological
43 challenges, Decathlon is currently conducting carbon emissions assessments with the
44 French environmental agency (ADEME) to make decisions based on robust data. Indeed, the
45 firm has included carbon emissions assessment as a GO/NO GO step for related
46 experiments.

1 Fifth, the profitability of sufficiency-based practices remains an open question. Indeed, these
2 two case studies show that, under certain conditions, rental or repair services can potentially
3 be profitable. Nonetheless, data shows that in other cases, both types of services may not be
4 profitable. These last considerations match the more general conclusion drawn by the
5 French environmental agency ADEME that, overall, repair shops face “major difficulties” and
6 “a widespread issue of profitability”. Therefore, further in-depth research on the specific
7 conditions under which repair and rental activities are profitable appear necessary.

8
9 *“In certain cases, there is a real profitability issue concerning some categories of small*
10 *electronic appliances. The cost of a diagnosis, including logistics and manpower, can already*
11 *amount to around 40 euros. This makes it hard to compete with new products.”* Service and
12 Durability Director, Fnac-Darty
13

14 Lastly, both the retailers studied complained that the upscaling of their repair services is
15 hampered by the lack of a properly trained workforce and about the difficulty of training their
16 employees or recruiting new ones. Such a situation originates from the absence of
17 specialized educational programs, which gradually disappeared as they were no longer
18 considered strategic. To overcome this challenge and in order to recruit 500 additional repair
19 technicians by 2025, Fnac-Darty decided to create new specialized training courses and
20 academies all over France. While the lack of a trained workforce is not an insurmountable
21 difficulty for the firm, since its after-sales service already comprises 2,500 employees based
22 in four repair centers and a spare part warehouse, it makes it unlikely that other retailers will
23 develop such sufficiency-based practices in the short term.
24
25
26
27
28

29 5. Discussion

30
31 This retailer-focused article aimed to contribute to the emerging literature on the adoption of
32 sufficiency-related practices by firms (Aggeri *et al.*, 2023; Jungell-Michelsson and
33 Heikkurinen, 2022; Niessen and Bocken, 2021; Walker *et al.*, 2021). From an empirical
34 perspective, the study seeks to provide insights for managers who desire to promote
35 sufficiency in their organization.
36

37
38 First, following the foundational article by Niessen and Bocken (2021), the present research
39 identifies new sufficiency-based circular practices. They complement those already identified
40 by the Business for Sufficiency framework, such as no ownership models, repair services
41 that extend the life of products and second-hand products resale. It shows that sufficiency
42 can be promoted by assessing the repairability and durability of products and informing
43 customers through a specific index. Furthermore, repairability and durability indexes can be
44 used by purchasing and design departments as eco-design requirements and support
45 services addressed to suppliers. Retailers can also usefully integrate such prescriptions in
46 the supplier selection process and product purchasing policy. By favoring the most repairable
47 products and excluding the least durable, a practice that has been referred to as “choice
48 editing” in the literature (Gunn and Mont, 2014), they can also improve their value proposition
49 to their customers, whose user experience can benefit from products with a longer lifespan.
50

51
52 Based on the Business for Sufficiency framework (see Table 4), all these strategies directly
53 participate in transforming customers’ behaviors, towards less consumption, different
54 consumption patterns and in some cases arguably refusing consumption (Rethink, Reduce
55 and Refuse). As such, they have a potential to lessen products and natural resources
56 consumption, in general and for customers who desire to question - or refuse - the act of
57 buying (less clutter). These strategies can also diminish the speed of material flows in the
58 economy (less speed). At firm-level, they enable the traditional business model of retailers to
59
60
61
62
63
64
65

1 evolve towards more sufficiency-based circular business models, which focus on slowing
 2 material and value loops (Bocken and Short, 2016; Niessen and Bocken, 2021). In contrast
 3 to traditional weak circularity approaches, which mainly settle for adding small-scale
 4 recycling activities alongside the company's business model portfolio, these strategies are
 5 situated within a strong circularity approach (Aggeri *et al.*, 2023; Alberich *et al.*, 2023). These
 6 characteristics are promising. Indeed, at a micro-level, managers of both Fnac-Darty and
 7 Decathlon say that raw material extraction and product manufacturing account for more than
 8 75% of their greenhouse gas emissions. At a macro-level, no current sustainability paradigm
 9 has enabled GDP to be decoupled from the material footprint of human activities, and
 10 together with fuels and food, the extraction and processing of materials contribute to half of
 11 total global greenhouse gas emissions, and more than 90 per cent of biodiversity loss and
 12 water stress (EEA, 2021; UNEP, 2019). More indirectly, it can be argued that all strategies
 13 associated with no ownership, repair and the repairability and durability of manufactured
 14 goods tend to simplify product design (less clutter), and ultimately favor more local repair
 15 activities in stores, through local partners and repair cafés, or 3D printing services for spare
 16 parts, as opposed to mainly imported new products and components (less distance). Lastly,
 17 some sufficiency-based practices, such as repair cafés and life extension services that
 18 include guidance to consumers on how to maintain products and enhance their lifespan, also
 19 enter into strategies focused on less market, which ultimately helps promote sufficiency
 20 (Niessen and Bocken, 2021).
 21
 22
 23

	Rethink <i>Consume differently</i>	Reduce <i>Consume less</i>	Refuse <i>Don't (over)consume</i>
Less clutter <i>Simplified & less</i>	- No ownership (N.O.) - Personalized production - Green alternative	- NO.+ price incentive - Demand reduction service	- Moderating sales - Question consumption No ownership
Less speed <i>Slower & more reliable</i>	- Reuse - Personalized production - Green alternative - Assessment of products' repairability and durability - Provide information about product repairability/durability - Repairability and durability eco-design requirements and support services suppliers - Selection of suppliers based on repairability and durability - Product purchasing based on repairability and durability - Repairable and durable products value proposition	- Life extension service - Long product warranties - Assessment of products' repairability and durability - Provide information about product repairability/durability - Repairability and durability eco-design requirements and support services suppliers - Selection of suppliers based on repairability and durability - Product purchasing based on repairability and durability - Repairable and durable products value proposition	- Question consumption - Provide information about product repairability/durability - Product purchasing based on repairability and durability - Repairable and durable products value proposition
Less distance	- Green alternative	- Short distance promotion	- Question consumption

<i>Regional & disentangled</i>	- Open-Source creation	- Life extension service - NO.+ price incentive	
Less market <i>Beyond commerce</i>	- Open-Source creation - Exchange platforms	- Support for repair & reuse - Exchange platforms - Life extension service	- Support for self-sufficiency
		Design	Awareness raising

Table 4: Business for Sufficiency framework with the new practices identified in bold (adapted from Niessen and Bocken, 2021)

While the implications of the sufficiency paradigm on redefining consumption and business models is still an emerging topic, the upscaling of business models based on a strong circularity approach constitutes a key research gap, since upscaling can play a role in a transition at the macroeconomic level (Aggeri *et al.*, 2023; Jungell-Michelsson and Heikkurinen, 2022; Sandberg and Hultberg, 2021). In this context, in a complementary manner to the static approach of the Business for Sufficiency framework (Niessen and Bocken, 2021), which identifies and classifies practices, a dynamic approach showing that sufficiency-based business models can be upscaled in the case of established retailers was adopted. Indeed, these two case studies reveal that far from being doomed to remain small-scale experiments, such business models can result in millions of products being repaired instead of being discarded or recycled, and being rented or bought second-hand instead of requiring new products to be manufactured. Such an upscaling process goes beyond regulatory compliance strategies. On the contrary, it is based on value propositions that concern important parts of the product portfolio of the firms, tens of thousands of products, and leads to massified operations, with for instance millions of repairs carried out each year in the case of Fnac-Darty. From a financial perspective, only a few years after being launched, these business models also prove able to represent tens of percents of the overall value creation at firm level and generate double-digit profitability, to the point where an established retailer can strive for these strategies to account for a third of its turnover in the short term. The article also describes some of the processes related to upscaling, such as upscaling through the diversification of maintenance, repair or rental services, systematic assessment of products' eligibility for sufficiency-based circular business models, and overall evolution of a firm's suppliers, purchases and value proposition based on products' potential for reparability and durability.

On a less optimistic note, evidence is provided about the limitations of the upscaling processes that were observed. Indeed, most significant sufficiency-based strategies have been adopted only by a limited number of retailers, which have gone beyond their legal obligations in a voluntary approach of sufficiency, whereas widespread adoption would be required to provoke macro level changes in production and consumption patterns (Aggeri *et al.*, 2023; Jungell-Michelsson and Heikkurinen, 2022). On the contrary, wider adoption amongst retailers has only been observed for less impactful practices such as displaying the reparability index of five product categories, in accordance with the regulations (the AGEC law) that make this change towards sufficiency mandatory. This finding can therefore also contribute to the debates over the respective roles of voluntary and mandatory approaches in moving towards sufficiency (Jungell-Michelsson and Heikkurinen, 2022), and underscores the need for policy interventions to support the more sufficient options highlighted by Niessen and Bocken (2021). Similarly to what has been observed for all circular business models (Stål and Corvellec, 2018), when adopted by established retailers, and despite fast and

1 significant upscaling processes, the sufficiency-based strategies identified in this article
2 currently appear to remain minor – or minority – value propositions and business models. In
3 the case of Decathlon, they still apply to only a minor part of the firm’s product portfolio.
4 Indeed, retailers’ overall portfolio of business models continue to be volume-based, in an
5 unsustainable dynamic that does not curb or phase out linearity (Bocken and Short, 2021;
6 Corvellec and Stowell, 2023). Therefore, further upscaling and adoption seem necessary to
7 lead to macro-level changes in production and consumption patterns.

8
9 The profitability of sufficiency-based practices also remains an open question. The present
10 research shows they can be upscaled, and generate a double-digit margin and a significant
11 proportion of an established retailer’s revenue. Nonetheless, these two case studies also
12 show that, under other circumstances, both rental and repair services may not be profitable.
13 These findings concur with the conclusion of previous studies, which have stressed the need
14 for public policies to improve the financial performance of sufficiency strategies (Ademe,
15 2020; Aggeri *et al.*, 2023; Niessen and Bocken, 2021).

16
17
18 Following the early debates on this issue (Bauwens *et al.*, 2020; Beulque *et al.*, 2018;
19 Niessen and Bocken, 2021), the present article also confirms that the design of sufficiency-
20 based circular business models can lead to rebound effects, at least when interactions
21 deemed to be “positive” by established retailers are designed with their traditional linear
22 business models. This finding corroborates previous research. Indeed, Gyde and McNeill
23 (2021) showed that consumers may be less careful with products when they know they are
24 covered by accidental damage insurance or repair schemes, or when using a rental service,
25 which can lead to reduced product lifespan. They also highlighted the existence of a
26 tendency to use rental as a try-before-you-buy scheme, thus having little impact on reducing
27 new sales in the long run. Finally, the article concurs with previous scholars’ assessment of
28 the need and complexity of evaluating the material footprint and environmental impacts of
29 some sufficiency strategies such as renting (Zamani *et al.*, 2017). A case-by-case analysis,
30 to be used as a KPI of related projects, appears necessary to confirm that renting helps
31 reduce the material footprint.
32
33
34
35
36

37 **6. Conclusion, limitations and research agenda**

38
39 This study pinpoints new sufficiency-oriented circular practices that can be adopted by firms,
40 and more specifically retailers, finding that effectively supplement those previously identified
41 by the Business for Sufficiency framework (Niessen and Bocken, 2021). In addition, through
42 concrete examples, the study shows that even in established retailers whose traditional
43 business model is volume-based, sufficiency-based business models can significantly be
44 scaled up, both in terms of contribution to overall turnover and gross margin, product portfolio
45 coverage and operations. In that respect, these established actors go beyond current weak
46 circularity dominant approaches, which remain centered on small scale business models that
47 don’t try to slow material, energy and value loops. Some of the processes fostering this
48 upscaling trend have also been described, such as upscaling through the diversification of
49 maintenance, repair or rental services, systematic assessment of products’ eligibility for
50 sufficiency-based circular business models, or overall evolution of a firm’s suppliers,
51 purchases and value proposition based on products’ reparability and durability potential.
52 Even if these two concepts may at first seem to be in conflict, this is nevertheless an
53 important result since no transition appears possible at a macro level without an upscaling of
54 sufficiency practices at the micro level of firms, in what is beginning to be called a strong
55 circularity paradigm.
56
57
58
59
60
61
62
63
64
65

1 Less optimistically, this study contributes to the nascent literature on sufficiency strategies in
2 firms by highlighting certain limitations of these upscaling processes, which impact their
3 ability to trigger a wider trend towards transition at the macro level. Indeed, most significant
4 sufficiency-based practices, which have gone beyond the legal obligation, have only been
5 adopted by a limited number of established retailers. Also, even when significant and fast-
6 paced upscaling trends were observed, they remained minority practices, whose financial
7 performance appears variable. Therefore, macro-level changes in consumption and
8 production patterns, appear to remain conditioned by further upscaling and improvements in
9 profitability, as well as wider adoption amongst retailers. Lastly, the article provides clear
10 evidence that sufficiency practices can entail rebound effects.
11

12 While this study provides useful insights for the academic literature, practitioners, and
13 policymakers, it also suffers from several limitations. These need to be addressed in future
14 empirical work on sufficiency strategies, which remains a relatively underdeveloped area of
15 research.
16

17 As the article is centered on a research action and case studies of two firms, it could only
18 identify a given number of new practices. Therefore, many other sufficiency strategies will
19 certainly be identified in the future. Sufficiency upscaling also requires further investigation.
20 As the present research was carried out over the period of a few months and focused on
21 strategies launched relatively recently, it fails to give definitive answers on many topics.
22 Indeed, longitudinal studies on upscaling processes would help to assess the extent such
23 processes can achieve, and the limitations they face. Wider adoption of sufficiency-based
24 circular business models by retailers also comes across as a prerequisite for a macro level
25 transition. Within this perspective, since regulation emerges as a key driver for wide adoption
26 of practices, more attention should be paid to public policy for sufficiency. The specificities
27 of the firms that have already upscaled them should be analyzed, as well as more generally
28 challenges and enablers of business model innovation for sufficiency. To assess more
29 thoroughly than this article the degree of transformation achieved by organizations, future
30 research could focus on the conditions under which products are considered suited to such
31 business models by established retailers, and the percentage of their product portfolio
32 potentially concerned. This question is of particular importance for entry level products, which
33 tend to be less durable, while rental, repair or reuse require the opposite, and calls for further
34 study of product design for sufficiency. The article was also unable to provide quantitative
35 findings on another key topic, namely the percentage of suppliers and products that have
36 already been excluded by a retailer such as Fnac-Darty on the grounds of lack of repairability
37 and, more generally, enablers, challenges and limitations to these efforts to drive durability
38 improvements through the supply chain. More in depth exploration of financial performance
39 and the long-term viability of these strategies also requires more attention in the future, as
40 well as assessment of their environmental impacts and, from a marketing perspective, their
41 potential interest for customers and their longer-term impacts on consumption patterns.
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

References

- 1 - ADEME & Harris Interactive (2020). Les Français et la réparation : perceptions et
2 pratiques – édition 2019.
- 3 - Adoue, C., Beulque, R., Carré, L., & Couteau, J. (2014). Quelles stratégies d'entreprise
4 pour une économie circulaire moteur de croissance?, Study realized for the French
5 Institute for the Circular Economy.
- 6 - Aggeri, F., Beulque, R., & Micheaux, H. (2023). L'économie circulaire. La Découverte,
7 Paris, collection « Repères ».
- 8 - Alberich, J. P., Pansera, M., & Hartley, S. (2023). Understanding the EU's circular
9 economy policies through futures of circularity. *Journal of Cleaner Production*, 385,
10 135723.
- 11 - Alexander, S. (2012). *The Sufficiency Economy*.
- 12 - Allievi, F., Vinnari, M., & Luukkanen, J. (2015). Meat consumption and production -
13 analysis of efficiency, sufficiency and consistency of global trends. *Journal of Cleaner
14 Production*, 92, 142–151. <https://doi.org/10.1016/j.jclepro.2014.12.075>.
- 15 - Arnspurger C. & Bourg D. (2017). *Écologie intégrale : pour une société permacirculaire*,
16 PUF, Paris.
- 17 - Beulque, R., Aggeri, F., Abraham, F., & Morel, S. (2018). Business models circulaires:
18 vers une création et captation de valeur pérenne? Les enseignements du recyclage et de
19 la réutilisation automobiles. *Finance Contrôle Stratégie*, (NS-1).
- 20 - Blomsma, F., Bauwens, T., Weissbrod, I., & Kirchherr, J. (2022). The 'need for speed':
21 Towards circular disruption—What it is, how to make it happen and how to know it's
22 happening. *Business Strategy and the Environment*, Early View.
23 <https://doi.org/10.1002/bse.3106>
- 24 - Bocken, N. & Short, S.W. (2016). Towards a sufficiency-driven business model:
25 experiences and opportunities. *Environ. Innovation and Societal Transitions* 18, 41–61.
26 doi: 10.1016/j.eist.2015.07.010.
- 27 - Bocken, N. & Short, S.W. (2021). Unsustainable business models—Recognising and
28 resolving institutionalised social and environmental harm. *Journal of Cleaner Production*,
29 312, 127828.
- 30 - Bocken, N., de Pauw, I., Bakker, C., & van der Grinten, B. (2016). Product design and
31 business model strategies for a circular economy. *Journal of Industrial and Production
32 Engineering* 33(5), 308–320. <https://doi.org/10.1080/21681015.2016.1172124>.
- 33 - Bocken, N. & Short, S. (2020). Transforming Business Models: towards a Sufficiency-
34 Based Circular Economy. In: Brandão, M., Lazarevic, D., Finnveden, G. (Eds.).
- 35 - Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative
36 research in psychology*, 3(2), 77-101.
- 37 - Corvellec, H., & Stowell, A. (2023). Circular Economy Practices Will Not Automatically
38 Phase Out the Linear Economy.
- 39 - DGCCRF (2022). COMMUNIQUÉ DE PRESSE. Une information sur les performances
40 énergétiques et sur la réparabilité des équipements électriques et électroniques encore
41 largement à améliorer
- 42 - Dumez, H. (2016). *Méthodologie de la recherche qualitative : Les questions clés de la
43 démarche compréhensive*. Vuibert, Paris.
- 44 - European Environment Agency (EEA) (2021). « Growth without economic growth »
45 available at: <https://www.eea.europa.eu/publications/growth-without-economic-growth>.
- 46 - FNAC-DARTY (2022). Fnac-Darty publie la 5ème édition de son baromètre du SAV pour
47 permettre aux Français de réaliser des économies lors de l'achat de produits
48 électroménagers et électroniques.
- 49
- 50
- 51
- 52
- 53
- 54
- 55
- 56
- 57
- 58
- 59
- 60
- 61
- 62
- 63
- 64
- 65

- 1 - FNAC-DARTY (2022). Excellente performance 2021 avec une croissance exceptionnelle
2 des ventes de +7% et un cash-flow libre opérationnel à 170M€ portés par une solide
3 exécution opérationnelle.
- 4 - FNAC-DARTY (2023). 1 million d'abonnés à Darty Max.
- 5 - Guillard, V. (2019). Du gaspillage à la sobriété. Avoir moins et vivre mieux ? De Boeck
6 Supérieur, Paris.
- 7 - Gunn, M. & Mont, O. (2014). Choice editing as a retailers' tool for sustainable
8 consumption. *International Journal of Retail & Distribution Management*, Vol. 42 No. 6,
9 pp. 464-481. <https://doi.org/10.1108/IJRDM-12-2012-0110>
- 10 - Gyde, C. & McNeill, L. (2021). Fashion Rental: Smart Business or Ethical Folly?
11 *Sustainability*, 13,(16) 8888.<https://doi.org/10.3390/su13168888>
- 12 - Halte à l'Obsolescence Programmée (2022). Nouvelle plainte de HOP contre Apple pour
13 obsolescence programmée et entraves à la réparation, published on 12 december 2022.
- 14 - Jackson, T. (2005). Live Better by Consuming Less. *Journal of Industrial Ecology*, 9 (1–
15 2), 19–36. doi: 10. 1162/1088198054084734.
- 16 - Jungell-Michelsson, J. & Heikkurinen, P. (2022). Sufficiency: A systematic literature
17 review, *Ecological Economics*, Volume 195, 107380.
- 18 - Jørgensen S. & Pedersen, L.J. (2018). RESTART sustainable business model
19 innovation. Springer. <https://doi.org/10.1007/978-3-319-91971-3>.
- 20 - Kurz, R. (2019). Post-growth perspectives: sustainable development based on efficiency
21 and on sufficiency. *Public Sector Economics* 43 (4), 401–422. doi: 10.3326/pse.43.4.4.
- 22 - Mihalic, T. (2016). Sustainable-responsible tourism discourse–Towards 'responsustable'
23 tourism. *Journal of cleaner production*, 111, 461-470.
- 24 - Ministère de la Transition Ecologique (MTE), 2020. LOI n° 2020-105 du 10 Février 2020
25 Relative à la Lutte Contre Le Gaspillage et à L'économie Circulaire. Available online:
26 <https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000041553759/>
- 27 - Niessen, L., & Bocken N. (2021). How can businesses drive sufficiency? The business
28 for sufficiency framework. *Sustainable Production and Consumption*, Volume 28, Pages
29 1090-1103.
- 30 - Parrique T. (2020) Ralentir ou périr, l'économie de la décroissance, Le Seuil, Paris.
- 31 - Prendeville, S. M., O'Connor, F., Bocken, N. M., & Bakker, C. (2017). Uncovering
32 ecodesign dilemmas: A path to business model innovation. *Journal of cleaner production*,
33 143, 1327-1339.
- 34 - Princen, T. (2003). Principles for sustainability: from cooperation and efficiency to
35 sufficiency. *Global Environmental Politics* 3 (1), 33–50. <https://doi.org/10.1162/152638003763336374>.
- 36 - Reichel, A. & Perey, R. (2018). Moving beyond growth in the Anthropocene. *The
37 Anthropocene Review* 5 (3), 242–249. doi: 10.1177/2053019618799104.
- 38 - Sandberg, M. (2018). Downsizing of housing: negotiating sufficiency and spatial norms.
39 *J. Macromark.* 38 (2), 154–167. <https://doi.org/10.1177/0276146717748355>.
- 40 - Sandberg, E., & Hultberg, E. (2021). Dynamic capabilities for the scaling of circular
41 business model initiatives in the fashion industry. *Journal of Cleaner Production*, 320,
42 128831.
- 43 - Spangenberg, J.H., & Lorek, S. (2019). Sufficiency and consumer behaviour: from theory
44 to policy. *Energy Policy* 129, 1070–1079. <https://doi.org/10.1016/j.enpol.2019.03.013>.
- 45 - Stål, H. I. & Corvellec, H. (2018). A decoupling perspective on circular business model
46 implementation: Illustrations from Swedish apparel. *Journal of Cleaner Production*, 171,
47 630-643.
- 48 - UNEP (2019). UN calls for urgent rethink as resource use skyrockets – press release :
49 [https://www.unep.org/news-and-stories/press-release/un-calls-urgent-rethink-resource-](https://www.unep.org/news-and-stories/press-release/un-calls-urgent-rethink-resource-use-skyrockets)
50 [use-skyrockets](https://www.unep.org/news-and-stories/press-release/un-calls-urgent-rethink-resource-use-skyrockets)
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

- Velenturf, A.P.M. & Purnell, P. (2021). Principles for a sustainable circular economy. *Sustainable Production and Consumption* 27, 1437–1457. doi: 10.1016/j.spc.2021.02.018.
- Walker, A.M., Opferkuch, K., Roos Lindgreen, E., Raggi, A., Simboli, A., Vermeulen, W., Caeiro, S. & Salomone, R. (2021). What Is the Relation between Circular Economy and Sustainability? Answers from Frontrunner Companies Engaged with Circular Economy Practices. *Circular Economy and Sustainability* 2, 731–758. <https://doi.org/10.1007/s43615-021-00064-7>
- Wang-Erlandsson, L., Tobian, A., van der Ent, R. J., Fetzer, I., te Wierik, S., Porkka, M. & Rockström, J. (2022). A planetary boundary for green water. *Nature Reviews Earth & Environment*, 1-13.
- Wiedmann, T., Lenzen, M., Keysser, L.T., & Steinberger, J.K. (2020). Scientists' warning on affluence. *Nat. Commun.* 11 (1), 3107. doi: 10.1038/s41467-020-16941-y.
- Zamani, B., Sandin, G., & Peters, G.M. (2017). Life cycle assessment of clothing libraries: can collaborative consumption reduce the environmental impact of fast fashion? *J. Clean. Prod.* 162, 1368–1375. doi: 10.1016/j.jclepro.2017.06.128.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

Appendices.

Appendix A. Keywords used for online data collection

Online searches were done in French and translated into English by the authors for this article.

Phase 1: Exploratory search of potentially relevant firms:

The keywords “retailer” and “retail” were successively combined, in iterative searches, with the following other keywords “sufficiency”, “consume less”, “sell less”, “planned obsolescence”, “rental”, “repairability”, “repair”, “reuse”, and “durability”.

Phase 2: Action-research and in-depth analysis of two innovative case studies

The keywords “Darty” and “Decathlon” were successively combined, in iterative searches, with:

- The names of the services, tools and initiatives they had respectively developed, namely “After-sales service barometer” (“Baromètre du SAV” in French), “Durable products” (“les produits durables” in French), and “Darty Max” for Darty, and “We Play Circular” (in English) for Decathlon,
- The company they had acquired when relevant, namely “WeFix” for Darty,
- And the key practices that had been identified during interviews, namely “repairability”, “repair”, “durability” and “repair services” for Darty, and “rental”, “rental services”, “repairability”, “repair”, “reuse”, “durability” and “repair services” for Decathlon.

Appendix B.1. Main interview guide

1. Could you present your organization?
2. What is your role in this organization?

Sufficiency practices

3. Presentation of the sufficiency concept and the Business for Sufficiency framework.
4. Did your organization adopt other practices that could foster sufficiency?
5. Could you describe these practices?
6. Do you consider these practices to be innovative compared to your competitors?
7. How do these practices impact your organization and its stakeholders?
8. Why did your organization implement these practices?
9. Are these practices necessarily good for the environment?

Potential upscaling processes

10. Could some of these practices potentially be upscaled?
11. If so, how could they be upscaled?
12. Could you provide data to demonstrate these practices involve upscaling?
13. Did the company set itself a target to achieve the upscaling of this practice?
14. What are the main challenges that you face?

Limitations

15. Would you say these practices can become the core driver of turnover and gross margin in your organization?
16. Could we say your company has renounced to volume-based growth?
17. Do you think these practices can promote sufficiency at a macroeconomic level?

Appendix B.2. In-store salespersons interview guide

1. In your opinion, what are the main selection criteria used by consumers when choosing a product in the shop?
2. Do you think consumers pay particular attention to the ecological impacts of products?
3. Do you think consumers pay particular attention to the reparability of products?
4. Based on your experience, do consumers understand what reparability means?
5. Do consumers look at the reparability index of products?
6. Do consumers look at the “durable products” label that your firm created?
7. Are consumers interested in the new services you offer, like “Darty Max” for instance? Have you incorporated this service into your sales pitch?

Appendix C. Coding samples

First order codes	Verbatims	Id
	“We decided on our own to create a reparability index, together with an NGO (HOP, which stands for Halt to Planned Obsolescence), and then we communicated about it. It was a seminal decision for us. Then, we invited the Secretary of State for Ecological Transition to explain how it worked, and we shared our repair data with ADEME (the French Environment and Energy Management Agency) to help them develop their own statistics”.	FD2
Product reparability assessment and customer information	“We go far beyond the reparability index, and we didn’t wait for it. Our barometer (“After-sales service barometer”) covered 77 categories in 2021, and we keep on expanding it”.	FD2
	“Our system enables the customers to know the brands better.”	FD3
	“We are the last fully integrated distributor. We have 2,500 people in our after-sales service. It’s unique in Europe. We are the leading repair company for electrical and electronic products. [...] This is an asset other retailing companies don’t have and it is a model that is difficult to replicate as it requires between two and three years to train a skilled repair technician. BUT and Conforama historically had repair activities, but they sold them. Only Boulanger still owns similar activities though a subsidiary”.	FD1
Overall assessment of the reparability and durability of the product portfolio	“Large appliances, computers, phones, small electronic equipment, ... step by step, we are slowly able to find out how repairable and durable all the main categories of products we sell as a company are.”	FD1

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

Eco-design prescriptions and support to suppliers

“Our indicator is the average of two pillars: durability, which indicates whether or not a product will often break down, and repairability, to determine whether it can be repaired rather than being exchanged for a new one. There is a lot of data behind it, and it needs time to be reliable”.

FD4

“Manufacturers have few contacts with end customers and no data about the reliability of their products after the warranty period. Therefore, we have a very balanced relationship with suppliers on that topic. Fnac-Darty provides feedback on product design and breakdowns. Conversely, when recurring breakdowns occur, suppliers help our technicians to repair the product more quickly and efficiently”.

FD2

“Suppliers increasingly tell us that they are waiting for the results of our after-sales service barometer, and our teams are asked to provide support on how to enhance repairability and durability”.

FD1

“At the outset, we were rather cautious. We only published the three best brands and classified them in alphabetical order. The following year, we published a ranking of the firms that were on the podium. Now, we publish the sustainability scores of 65 product categories, for the firms that are above the average. It allows brands to stand out.”

FD2

“‘Durable products’ is a sustainability score applied to the product. In each range, we highlight the product with the best sustainability score, by price range.” (Concerning the internal label ‘Durable products’, or “les produits durables” in French).”

FD 2

“When we say that we select the most sustainable products, we also begin to allow ourselves to eliminate the least sustainable products.”

FD1

Selection of manufacturing suppliers, product purchasing and evolution of retailers’ value proposition

“The durable products is looked at by customers, perhaps even more than the [repairability] index. Maybe because it’s more visible, maybe because we highlight the notion of durability. In any case, it is consistent with the returns from our after-sales service. I have almost never found any inconsistency between the logo and the feedback that I have, and I talk really easily to the customers about it.”

FD4

“We have made commitments on the average repairability score of our products. It set in motion chain reactions. Manufacturers will have to work to improve their products, and Fnac-Darty will have to buy more durable products, and fewer products that cannot be repaired.”

FD3

Diversification and upscale of maintenance and repair services

“Even ‘durable products’ break down at one point or another. When that happens, we wanted to encourage consumers to have their product repaired, even after the warranty period, and we needed to make ourselves ready for this increase in activity.”

FD2

FD4

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

Experimentation to upscale a diversity of rental services

“Darty Max works well! People don’t want to bother anymore. We tell them “yes, it costs 150 euros per year, but for this price, you don’t have to worry anymore. It covers all your products and tomorrow, if you have a problem, we will repair them for free.”. Then they understand it is a great service.” FD1

“For smartphones, we have WeFix, which is now present in many of our shops, and has many individual points of sale. We repair 200,000 phones per year, and the speed of service is appreciated by customers.”

“Short-term, long-term, products, brands, type of customer, ... we launch new experiments in every possible way”. D2

“Many other brands have already launched or tested renting on products related to their sports. It’s our turn now. What’s important for a sales manager like me is to be able to rely on their experience and make fewer mistakes!” D4

“In Quechua (camping brand), we are already renting products for years. Now, we are more focused on deploying the model internationally, at first in Europe, and on testing rental on new products.” D3

“With We Play Circular, we are testing something that could be a revolution in the world of retail. With your subscription, as long as you bring back other products, you can just come in the shop and get the new products you want to use or just try them out.” D2

“It is a major change, in a firm that is historically centered on shops and a b-to-c model, but we definitely need to keep on experimenting on ways to be in touch with our customers other than traditional shops, and the best ways also to address b-to-b.” D3

Systematic assessment of products’ eligibility for sufficiency-based circular business models

“We are screening all the product families of the brand, to determine whether they are more adapted to rental, reuse, repair, or in some cases just recycling”. D3

“Design is increasingly working with brands, to better understand whether their different existing products should be rented, repaired or reused, and how their new products should be designed in order to be suited to those businesses.” D1

Evidence of upscaling processes

“This (Darty Max) is a profitable activity for us. As we have skills and precise data on repair costs, we are able to set subscription prices in such a way that we generate a sufficient margin.” FD1

“Repair activities already provide a double-digit contribution to our turnover”. FD1

“I can’t be more specific currently but by 2026, the circular economy will represent a double-digit contribution to our revenues”. D2

“Under certain conditions, rental services can be nine to thirteen times more profitable than sales.” D2

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

The limitations of upscaling processes

“We are the last fully integrated distributor. We have 2,500 people in our after-sales service. It's unique in Europe. We are the leading repair company for electrical and electronic products. [...] This is an asset other retailing companies don't have and it is a model that is difficult to replicate as it requires between two and three years to train a skilled repair technician. BUT and Conforama historically had repair activities, but they sold them. Only Boulanger still owns similar activities though a subsidiary”.

“Many entry-level products will be replaced by second-hand ones, but we are no exception, we haven't renounced to growth in sales volumes.”

“At this stage, and even if new design will help, I have no visibility on which proportion of our products will ultimately be circular.”

“We had job offers, but no properly trained candidates, so that we had to create a new curriculum, the same curriculum that had disappeared in recent decades.”

“Economically, the main issue of repair activities is labor cost. Repair has to be done well and quickly to make money, which means having trained technicians and a good knowledge of each product and its malfunctions.”

“What we have is the confrontation of two worlds: the world which produces goods, which extracts, which produces, which optimizes, with very low labor costs in low-income countries, and the world of repair, which is in fact craftsmanship, is not or hardly relocatable abroad, and suffers from the fact that taxes are higher on labor than on raw materials.”

FD1

D4

D1

FD2

FD1

FD1

