3. Doing business with durables

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3.1 Introduction

A profound transformation in the mode of market-based value creation, capture, and distribution seems inevitable to ensure the preservation of the essential human life-supporting systems of nature. As highlighted in Chapter 1 of this volume, one of the problem clusters triggering the current Earth crisis has been the massive level of production and accumulation of things, which has obviously been accompanied by a steady increase in demand for natural resources in the last decades. From a durable economies position, the current so-called value chain is based on a take–make–stockpile value creation (and destruction) logic that starts with the extraction of finite natural resources, which are transformed into human artefacts, followed by distribution, and a use phase that finally culminates in stockpiling and storage. There are plenty of reasons why people in the global North accumulate masses of things. These include not only the increasing temporal and spatial flexibility of work and private life or the flaunting of material wealth, but also the perceived change in sociotechnical time structures in post-industrial societies (Reckwitz 2019; Rosa 2005). It seems that flexible access to products and their functions (even if the temporary benefits sometimes last only fractions of a second) has led to people being willing to use resource-intensive space (renting bigger apartments, building larger houses, and heating garages, basements, and attics) in order to store their just-in-case items. In the larger metropolitan areas, we can observe that even the business of renting storage containers is booming, despite horrendous prices for 15 square metres of storage capacity.

Most companies still operate according to a largely stockpiling economy, with business models that are designed for fast-paced consumption and little responsibility for the use and reuse of the products they sell. In this article, we assume that firms that incorporate business model patterns that support the

creation, capture, and delivery of economic value by using and offering products and components that pass through multiple-use cycles contribute to a decrease in overall consumption levels and a reduction in anthropogenic pressure on nature. We assume that the products required to do this kind of business need to be durable. There are, of course, several definitions of product durability. We rely on the definition of the common standard on environmental management systems, ISO 14009 (ISO 2020), which defines durability as the 'ability to function as required, under defined conditions of use, maintenance and repair, until a limiting state is reached'. A limiting state can be a failure or a wearing out – that is, a primary or secondary function is no longer delivered. The limiting state can be changed to a functional state by maintenance or repair. If this is no longer viable due to technical or socioeconomic factors, the limiting state can change to an end-of-life status (CSN 2020). Durability can be expressed in units appropriate to the part or product concerned, such as calendar time, hours of use, or operating cycles. Thus, we also consider a product to be more durable if it withstands a higher use intensity over a specified timespan compared with an alternative product – although both products might have the same calendar lifetime. Both 'conditions of use, maintenance and repair' and the 'limiting state' need to be defined for each product group.

Durables can be commercialised in a sales business model – combined with after-sales services such as maintenance and repair – or in a products-as-a-service business model (PaaS), where products and services are combined in a system to deliver a specific benefit. PaaS business models include economic activities such as renting, leasing, pay-per-service, and sharing. In theory, the combination of alternative product designs (design for reparability, maintainability, reliability, etc.) and PaaS business models can result in products and components being used for longer and/or more intensively (e.g. by several users). However, no matter how good companies are at showcasing their new PaaS business model portfolios – and some pioneers have started to experiment with such new models – the reality is that only a limited percentage of products are shared or pass through multiple-use cycles successfully.

We followed two research approaches in order to identify characteristics and typical practices of companies doing business with durables. In the first approach we conducted two in-depth business case studies on companies providing PaaS. To complement this information, we analysed the webpages of companies known to produce and sell durable products (sales business model). We combine the insights of both approaches in a so-called operating model; this is a visualisation that explains how the organisation operates in order to

deliver value to its different stakeholder groups (Hewes et al. 2019). It indicates which structural, procedural, and personnel aspects are necessary for the implementation of innovations based on producing, distributing, and providing durables.

We look only at companies producing and providing consumer goods. We do not consider companies operating and maintaining socially essential infrastructures (e.g., electricity grids, water networks, schools, health infrastructures), nor do we incorporate companies that have been in the market for a long time and can therefore be regarded as 'durables' in the sense of being resilient and long-lasting social systems (e.g. old family-run businesses).

3.2 Research approach

To develop our first tentative and practice-relevant ideas on how firms initiate, shape, and manage value creation processes and value propositions that rely on durables and their functions, we conducted two in-depth business case studies. We used polar types (Eisenhardt 1989; Eisenhardt and Graebner 2007) by sampling cases that differ in size, industrial contexts, and economic scope but nevertheless share the objective of achieving innovation through PaaS business models running on durables, to generate comprehensive insights and to identify co-occurring patterns across firms that exhibit significant differences in their business attributes. An overview of each case is illustrated in Table 3.1.

Table 3.1: Case study description.

Attributes	Case I: KitchenStar[1]	Case II: GreenMountain
Company description	Developing and manufacturing products for cooking and baking, dishwashing, cooling and freezing, washing and drying, and digital home connection applications	Developing, producing, and distributing outdoor equipment: functional outdoor clothing, backpacks, bags, sleeping bags, tents, shoes, and camping accessories
Industry	Home appliance industry	Outdoor and textile industry
Founded	1967	1974
Size	Approx. 60,000 employees worldwide.	Approx. 530 employees worldwide.
Operating radius	Global	Europe
Sustainability concept	Advocate of the triple bottom-line approach – they want to prove that nature conservation, social responsibility, and economic performance are not mutually exclusive, but that their interdependence is the basis for a prosperous business	Pioneer company of the common good economy – sustainability is the omnipresent core of business operations
Motivation /guiding principle	'We want to be the first choice for consumers worldwide. We grow responsibly and contribute to protecting our natural resources.'	'As the most sustainable outdoor outfitter in Europe, we contribute to a world worth living in.'

1 The names have been changed to ensure the anonymity of the companies.

Attributes	Case I: KitchenStar[1]	Case II: GreenMountain
Product durability activities	Investing in different business experiments that explore various forms of value creation processes focusing on and using durables: · Instead of selling washing machines and dryers, offering their functionality by equipping and running common shared laundry rooms · Renting highly efficient home appliances at a fixed monthly fee embedded into a PaaS · All appliances used in the PaaS and the common shared laundry rooms are returned to KitchenStar for a second life (selling them on a second-hand online platform or harvesting spare parts for reuse and remanufacturing)	Investing in different business experiments that explore various forms of value creation processes focusing on and using durables: · A PaaS that offers the functionality of backpacks, tents, camping mats, saddlebags, and trolleys by temporary access through rental contracts · Establishment of new alliances, e.g., with the internet platform iFixit, which provides repair and care instructions for GreenMountain products · Collaboration with digital platforms operating second-use marketplaces · Establishment of a repair index for all products in the portfolio – the higher the index score of a product, the faster and easier it is to repair

We complemented the case study analysis with an investigation of the websites of companies that produce and provide durables (see Table 3.2). We selected companies from different industries and of different sizes based on our knowledge of 'typical' companies producing and providing durables. We screened the website of each company to identify company values and practices related to the creation and provision of durable products.

As a first step, we collected information by company; second, we clustered the information and identified overarching categories. We are aware of the limitations of using publicly available information: the information might rep-

resent merely a narrative about the company's values and practices; internal processes and strategies that are not intended for the public are not published on the website; and the website describes only the current state of the company (there is no evidence that values and principles were also followed in the past). Nevertheless, we assume that the information given to interested stakeholders has a relation to the company's internal values and practices.

Table 3.2: Case studies for website screening.

Attributes	Company					
	Vitsoe	**Thonet**	**Miele**	**Moccamaster (Technivorm)**	**Vorwerk**	**Original Glashütte**
Company description	Producing and selling a shelving system, a chairs and tables	Producing bentwood and tubular steel furniture	Manufacturing kitchen and home appliances	Manufacturing filter coffee machines	Manufacturing home appliances (kitchen appliances and hoovers)	Manufacturing high-quality watches
Industry	Furniture	Furniture	Home appliances	Home appliances	Home appliances	Luxury
Founded	1960	1849	1899	1964	Approx. 1890	1990 (historical roots in 1845)
Size	SME	SME	Large enterprise	SME	Large enterprise	Large enterprise (brand of Swatch Group)
Operating radius	Based in UK, direct sales worldwide	Production in Germany, sales worldwide	Worldwide	Production in the Netherlands	Production in Germany and France, direct sales worldwide	Production in Germany, sales worldwide

Attributes	Company					
	Vitsoe	**Thonet**	**Miele**	**Moccamaster (Technivorm)**	**Vorwerk**	**Original Glashütte**
Product sustainability concept	Produce product with a long lifetime to reduce the environmental impact to a minimum	Strive for a balance between profitable growth, protection of the environment, and responsible actions towards all shareholder groups	Make better, smarter appliances so the homes and businesses they serve become more sustainable, from one generation to the next	Made by hand in the Netherlands from sustainable and recyclable materials	Carefully examine the recyclability of used materials, the share of machining and environmental friendliness, and the sustainability of materials	Focus on high quality (no dedicated product sustainability concept)
Motivation/ guiding principle	Living better, with less, that lasts longer	Pioneering furniture design with a long tradition	Forever better	Life is too short to drink bad coffee	Commitment to high quality, family company taking the long view, openness to innovate, designed for human connection	Innovative watchmaking art that meets the highest standards

Attributes	Company					
	Vitsoe	**Thonet**	**Miele**	**Moccamaster (Technivorm)**	**Vorwerk**	**Original Glashütte**
Product durability activities	· No price reductions · Lifelong service · No change in models · Modular systems of high quality: simple, flexible, robust, simple to construct, change, repair, and dismantle · Item is designed and built to last as long as possible · Goal to allow for reuse of systems · Spare part provision	· Physical and aesthetic longevity of products ('heirloom quality') · Products produced on demand · Models stay in portfolio (over centuries) · Use of high-quality materials · Repair service · Care instructions provided	· Household appliances tested up to 20 years · Fast and efficient after-sales service	· Sustainable and high-quality materials that last a long time · Modular construction · Each product tested twice at factory · Spare parts provided	· Certified quality management · High-quality components facilitate long-lasting high performance with minimal wear · Repair service	· Own tool development and manufacturing · In-house production of nearly all parts · Manual assembly · Intensive testing · Maintenance service

Source: www.glashuette-original.com/de/; www.miele.de; www.moccamaster.eu/; www.thonet.de; www.vitsoe.com; www.vorwerk.de/.

3.3 Doing business with durables: experiences from practice

It is apparent that small modifications of product attributes, such as using recycling input materials or biodegradable packaging, are incremental changes that may lead to eco-efficiency gains, but they do not shift prevailing core business rationales that promote PaaS based on durables. But how can incumbents radically rethink and rearrange their business activities and explore new and suitable approaches to tackle the stockpiling of valuable durables?

As a pioneer company of the common good economy, GreenMountain has set its business motivation as developing durable and nature-friendly outdoor textiles and outdoor equipment. Nature protection, transparency, and respect for human rights across its business ecosystem are GreenMountain's guiding principles for action. Through its new PaaS business model, iShareIT, outdoor enthusiasts have the opportunity to rent equipment such as bike bags, tents, or backpacks for a limited period of time. GreenMountain steps into the role of a product steward – that is, they provide only the functionality of the products offered for rent and thus take responsibility for their use phase. The products can be rented via an online platform in the company's own stores or at the main production site. With iShareIT, GreenMountain offers an infrastructure to ensure that outdoor equipment is used as intensively as possible, for as long as possible, and throughout the entire year, instead of lying around unused in a closet, cellar, or garage for 50 out of 52 weeks a year. The items available through iShareIT, and malfunctioning products sent in by customers, are maintained and repaired by the in-house repair division. To align products developed, produced, and offered with durability, they have established a repair index. The higher the index score, the quicker and easier it is for the product to be repaired. Further, they collaborate with digital ecosystem platforms to provide repair instructions, spare parts, and care instructions, as well as operating a second-use marketplace. Hence, GreenMountain is engaged in intensive community building and strengthens a culture of using durables in mass consumer markets.

GreenMountain has institutionalised 'doing durability' as a strategic investment aim for corporate development; this can be observed in, among other things, the introduction of the repair index, the establishment of the new PaaS business model iShareIT, and strategic alliances with digital platforms pushing forward ecological sustainability. Furthermore, they try to initiate a discourse about repair and durability in the public and political field. Through the support of the 'right to repair' movement, by launching

awareness-raising campaigns to reduce consumption, and in its environmental positive lobbying, GreenMountain strives to performatively transform the market and social conditions in order to abolish the stockpiling mentality. This idea of ecological and social performativity (Hofmann and Jaeger-Erben 2020; Hofmann and Knyphausen-Aufseß 2022), which goes hand in hand with corporate awareness about solving ecological wicked problems, does not imply adapting to stakeholder demands in a reactive mode; rather, it involves a proactive contribution to a sustainable transformation of society.

KitchenStar builds its durability efforts on keeping products and materials in use. It aims to reduce the use of natural resources, any type of emissions, and energy consumption across its entire business ecosystem to a minimum. An innovation spin-off called BlueHousing has successfully established a new PaaS business model focused on renting highly efficient home appliances at a fixed monthly fee. BlueHousing owns the appliances, and the subscription covers maintenance, repairs, and replacements – ensuring a hassle-free household. If the devices cannot be repaired, they are returned to BlueHousing, which salvages reusable parts for remanufacturing processes. Another in-house start-up at KitchenStar, BetterTogether, is running shared laundry rooms for serviced apartments, multi-unit residential dwellings, and dormitories instead of selling washing machines and dryers. Digitising everything from booking the machines to paying for the washing and drying cycle simplifies the entire laundry process. According to KitchenStar, BetterTogether's shared laundry rooms have the potential to reduce the number of washing machines and dryers needed in residential facilities by 70 per cent. Besides repairing services, BetterTogether takes back appliances after several years of service, checks, refurbishes, and returns them, after hygienic cleaning, so they can enjoy a second lifecycle.

To avoid unidimensional silo solutions and simultaneously encourage cross-functional collaboration, a diverse team of employees developed a roadmap that directs strategic investments to boost business activities promoting durables, among other things. The interdisciplinary team is responsible for the whole strategic road mapping process, from developing to realising it and then to reflecting on it. The roadmap was communicated within and across company boundaries with a clear mission statement from the top management. In the case of KitchenStar, the purpose of internal cross-functional collaboration is to combine many perspectives and enable collective testing, sharing, and elaboration of ideas about how novel value creation activities can emerge that culminate in innovative PaaS business models based on durables.

3.4 Doing business with durables: public image

To complement the in-depth case studies above we analysed the websites of several companies that focus on creating and providing durables (see Table 3.2). We identified typical company values, value propositions, and practices and strategies related to product design and manufacturing.[2]

3.4.1 Values

Statements on companies values often relate to excellence, superiority and high quality, continuity, trustworthiness, authenticity, and reliability as well as modernity, innovation, and creativity. It is stated that a combination of expert knowledge, passion, and creativity lead to high-quality products. Often, companies refer to their legacy and heritage. In order to create durables, several strategies seem to be relevant:

- long-term planning – this includes continuity of values and long-term relationships with partners;
- partial independence of shareholders in family-owned companies;
- extensive product development and intensive product testing;
- promotion of the exchange of skills and capabilities among employees, such as the teaching of craftsmanship; and
- cooperative and fair relationships with partners and stakeholders.

3.4.2 Value proposition

Much of the information on the website focuses on the value proposition for the customers. Here, the reliability of the product, the quality, and the services provided take centre stage. Messages imply that if customers choose these products, they will have taken the right, 'carefree' decision. Products are supposed to increase the consumer's quality of life, because they are easy to use, simplify everyday tasks, and are reliable. They represent modernity, individuality, and quality and as such should reflect the purchaser's values. Sometimes there are options to individualise the products: for example, by

2 The websites analysed were: www.glashuette-original.com/de/; www.miele.de; www.moccamaster.eu/; www.thonet.de; www.vitsoe.com; www.vorwerk.de/.

choosing colours, materials, or different modules. Furthermore, the companies promise reliable services such as competent and personalised advice and professional repair services.

3.4.3 Practices

3.4.3.1 Product design

A 'long life' is combined with a timeless and sometimes iconic design, which means that products do not become out of date and can be (re)used in different settings. The design combines form, function, and aesthetics. High-quality recyclable materials are combined with a 'simple' repairable and precise construction to achieve physical longevity. The choice of the materials should also minimise deterioration and/or enable 'graceful' ageing. Products are also advertised as being resource-efficient and environmentally sustainable due to being repairable, reliable, or recyclable.

3.4.3.2 Manufacturing, quality management and internal learning

Companies emphasise their in-depth knowledge and capabilities in engineering and handcrafting combined with modern production technologies. All companies have their own manufacturing facilities in their country of origin and they usually have a high level of vertical integration. Some companies also state that they still produce and assemble items (partially) manually in order to achieve a 'hand-made' quality. They emphasise that they developed the know-how to produce high-quality products sometimes over decades and that their capabilities and manufacturing technologies are continuously optimised. Thus, knowledge transfer between young apprentices and experienced employees is extremely relevant. Companies also focus on a close collaboration between research and development (R&D), production and quality management. They have their own testing capabilities, and their requirements are usually set above industry standards (e.g., testing household devices for a 20-year lifetime). They usually follow quality management standards (e.g., ISO 9001 on quality management systems) and also request that suppliers adhere to their own quality standards.

3.5 Synthesis

In the face of the massive devastation of nature, companies need to transform their mode of value creation more rapidly and more extensively than ever before. In almost every sector of the economy, complex and dynamic changes occur that have a profound impact. Therefore, it is even more important to have instruments and frameworks that allow companies and their members to find and follow possible paths through this plethora of complexity. An operating model is one widely used approach that supports decision makers in identifying, interpreting, and analysing the interdependencies of business value creation. The image of the operating model contours the essential elements of a company and serves as an instrument for reducing complexity. When done right, it functions as a source of consistent and coherent guidance to all the constituents of a company. We use an operating model as a framework to summarise, structure, and cluster the insights we have gathered.

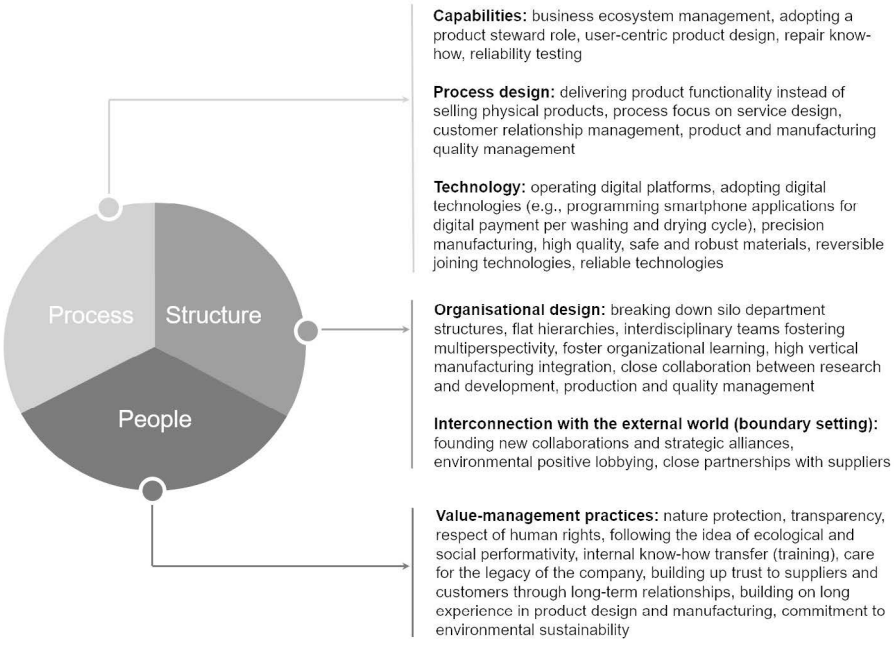
There is a wide range of ideas on how an operating model should be constituted. A tool for visualising an operating model is the template developed by Hewes et al. (2019); this template is well known and widely used in business practice. It is not designed for a specific industry or economic organisation; rather, it is universally applicable and a cross-sectoral, usable instrument. It consists of three core elements – structure, processes, people – that are mutually connected, and taken together they shape the value creation architecture:

- **Structure:** Defines decision-making processes and segmentation into different working areas. Furthermore, it sets out the framework that balances stakeholder interests and draws the boundaries between the organisation and its environment.
- **Processes:** Sets of activities to transform scarce organisational resources into products and services. Organisational resource refers to tangible or intangible assets that are needed for (re)producing the outputs that an organisation develops, owns, controls, or has access to.
- **People:** Defines the key attributes and behaviours the organisation strives to infuse within its people. It covers working norms and organisational culture issues.

We use the approach of an operating model to synthesise the findings from the two case studies and the website content we collected and have presented above. One of the crucial properties of an operational model is its functional

nature as a 'conceptual map'. In other words, it proposes how a certain category of corporate value architectures could be designed to fulfil its purpose. Referring to our case, we present in Figure 3.1 a potential business operating model that has as its purpose a sustainability-oriented use of durables. It serves as a conceptual map for practitioners, indicating which structural, procedural, and personnel aspects are necessary for the implementation of innovations based on producing, distributing, and providing durables. As with all conceptual models, the final model presented below necessarily abstracts social life by drawing a simplified picture of reality. However, we do not intend this to be complete; rather, we sought to identify the main influencing parameters that appear to be important for doing business based on durables.

Figure 3.1: Operational model for companies doing business with durables.



Our findings show that companies doing business with durables have a strong focus on creating user-friendly high-quality products and services in close relationships with suppliers and business ecosystem partners. To

do so, they need reliable hardware but also advanced digital technologies and strong internal collaboration between R&D, manufacturing, and quality management. Thus, internal and external organisational design focuses on collaboration and learning. The companies analysed here are driven by their own legacy and values such as transparency and sustainability, and they focus on having a fair and equal relationship with employees and business partners.

3.6 Conclusion

The proposed operating model and the case studies can give a first tentative guide to the ways in which companies have to be organised to provide durable products. However, there are many assumptions regarding what such a business constitutes. The information required to determine the characteristics of businesses providing durables was gathered via two different research approaches, which lead to inconsistencies in the insights obtained (e.g., what type of information was collected). Thus, the proposed operational model is a first attempt to grasp the most important characteristics of companies providing durables. This model needs to be tested with companies: for example, by assessing the status quo and practices within companies in more detail. Furthermore, each model is an abstraction of reality and thus cannot cover all aspects of the actual context. This might lead to blind spots. Certain aspects are not covered within the model: for example, specific governance structures (e.g. incentive systems) and detailed procedures (e.g. supplier management systems and requirements).

Furthermore, the two research approaches had a slightly different focus. The case study analysis looked especially at companies that provide PaaS business models, whereas the website screening focused on companies producing long-lasting and reliable products. In both cases, however, there is no guarantee that the products are in fact used for a long time or very intensively, as stated in our definition of durability. Actual user practices were omitted from the analysis and thus the picture is not complete.

Moreover, we could not assess whether businesses focusing on durable products will lead to environmental (and social) sustainability. Here, indicators need to be developed that link, for example, the longer lifetime of a product to the socio-ecological benefits created – if any. Besides, in many cases durability is not a desirable quality: for example, plastics that end up in the ocean or persistent chemicals in nature and the food chain. Here, a

better differentiation is needed of what needs to be durable in which context. Furthermore, different levels of durability can also be addressed: for example, how 'durable' a company is in the sense of it being resilient and long-lasting. What are the characteristics of those companies? Also, to be examined are innovation cycles or the maturities of certain technologies: that is, how long has a certain technology been on the market and undergone development cycles? Taking the material perspective, one could also ask how many times a material can be recycled and retain the same quality (for the same or similar use). All these different aspects of durability need to be analysed to understand what supports or hinders the creation of durables and the positive or negative social or environmental effects this has.

To conclude, doing business with durables still fulfils the capitalistic paradigm that knowledge and assets belong to the company. In the long run, we envision businesses that are shaped by modern ways of collaboration between stakeholders to tackle the environmental (and social) challenges which lie ahead of us. This means that roles and responsibilities between producers, consumers, associations, interest groups, and politicians must be newly negotiated – especially opening up company's internal processes, knowledge, and assets. In the future, the provision of services fulfilling the needs and attending to the well-being of the people might lie in all our hands; instead of working to consume goods and services, we might take an active part in a global networked economy that shares assets and knowledge to provide goods and services catering to the needs of local communities – and thus creating resilient and durable economies.

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