

SERVITIZATION AND CIRCULAR ECONOMY:
ECONOMIC AND LEGAL CHALLENGES



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SERVITIZATION AND
CIRCULAR ECONOMY:
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Servitization and circular economy: economic
and legal challenges

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PREFACE

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Have you ever thought of renting a washing machine or subscribing to a ventilation service? The transition from a linear to a more circular economy that uses less scarce raw materials and causes less negative environmental impact, entails new business models and a shift from buying products to using products ('servitization', 'access-based consumption'). This trend has a huge potential, also in economic terms, not the least in b2b markets. However, taking into account behavioral barriers, and in absence of a clear regulatory framework, users feel uncertain and hesitant to engage in new, circular product-service systems ('PSS').

This book compiles the academic papers presented at a two-day international and interdisciplinary conference held in Leuven on 21 and 22 April 2022. This conference was organized at KU Leuven by Consumer Competition Market and CEDON, in cooperation with the *Renson Chair for data-driven servitization in creating healthy spaces*, and the Université de Lille, with the support of the *European Law Institute*. This book identifies economic and behavioral drivers and barriers of servitization as well as the main legal challenges in the servitization process.

1. ECONOMIC ASPECTS

In Chapter 1 (*Human behavior in the transition from a linear to a circular economy*), **Siegfried Dewitte** (KU Leuven) focuses on the behavioral challenges that the transition to a circular economy entails and on the role that human behavior plays in slowing down that transition. Dewitte sketches the '**classic approach**' to attempts at changing human behavior and the problems that this approach based on the model of the rational decision maker runs into. For example, consumers, in spite of sufficient knowledge and the right corresponding attitude, fail to engage in the corresponding behavior ('attitude-

behavior gap'). Next, Dewitte turns to 'social marketing', which tries to adapt the principles of marketing to societal issues. Dewitte argues that, even though this approach has its merits, it also has its limits. Most importantly, the social marketing approach remains an inherently rational approach which misses the deeper underlying characterization of human decision makers as behavioral machines. Subsequently, Dewitte introduces a promising and complementary approach to the existing approaches, called 'behavioral economics', stressing that humans are not only rational decision makers but also forceful behavioral machines. Dewitte introduces the influential EAST model (standing for Easy, Attractive, Social, and Timely), which summarizes the four main 'buttons' of the behavioral machine one should take into account when designing interventions. Finally, Dewitte discusses **two main challenges that the 'behavioral economics' approach faces** before it can really contribute to policy in a solid way. The first problem relates to the lack of a general operational model and the second problem pertains to the lack of insights in the heterogeneity of the market. The main conclusion of his analysis is that much more research is needed, along two axes: (i) more fundamental research by behavioral scientists to find ways to deal with the intricacies of context and individual factors that may dampen or boost effects; (ii) more 'market research' by policy makers, fully acknowledging these behavioral machine aspects of human decision making, when launching new policies. As to the transition from linear to circular models, Dewitte argues that we need a rich arsenal of insights into the barriers and facilitators in a wide range of segments and situations. Building on that, we also need a strong narrative to motivate people to incur the costs that come with the transition.

In Chapter 2 (*Trust and consumer's attitudes towards product-service systems: Comparing Flanders and the Netherlands*), **Caroline Lavigne** and **Sandra Rousseau** (KU Leuven) start from the findings of previous studies that product-service systems (PSS) have the potential to decouple fulfilling consumer needs from material usage and environmental impacts, but nonetheless are rarely seen by consumers as perfect substitutes for product ownership. Several drivers and barriers have an impact on the adoption of PSS. In their chapter, Lavigne and Rousseau focus specifically on the role of trust in determining consumer intentions toward the adoption of PSS, while taking other relevant consumer characteristics into account. For their analysis, they relied on data collected through an online survey of Flemish and Dutch consumers. Specifically, they compare consumers' intentions for a wide variety of PSS and investigate the importance of trust in this setting. In addition, they compare consumers in two Dutch-speaking, neighboring regions – Flanders (Belgium) and the Netherlands. Lavigne and Rousseau explain that, while PSS-specific **trust related to regulation, contractual conditions and service producers** is an important element of consumer intentions, general trust levels and trust towards other users seem to play a negligible role. Besides consumer trust and consumer attitudes, their findings also confirm the **importance of**

the duration of use of a product. On the one hand, temporarily or sporadically used products (such as sports equipment) are more likely to be considered to be accessed via PSS than via full product ownership. On the other hand, consumers considering continuously used products (such as clothes for adults) are less open regarding PSS and seem to prefer product ownership. Overall, the findings by Lavigne and Rousseau reveal a fairly homogenous picture with **limited differences between the two neighboring, Dutch-speaking regions.** Still, the results of their study show a consistently higher reported level of openness toward PSS in Flanders (Belgium) compared to the Netherlands. Finally, the selection of specific service providers to illustrate each case did not lead to country-specific differences in trust levels – specifically trust in service providers – related to differences in brand familiarity or market shares.

2. COMPETITION LAW AND INTERNAL MARKET LAW ASPECTS

In Chapter 3 (*Servitization, IoT and Circular Economy*), **Janja Hojnik** (University of Maribor) focuses on the need for regulatory intervention at EU level. She first discusses the correlation between economic motives for servitization, the digital impetus for servitization and the (non-)correlation with sustainability goals and concludes that regulatory intervention is needed to create the environment that enhances motivation for sustainable servitization. Subsequently, Hojnik delves into relevant **EU regulation.** She analyses the **free movement provisions** and the difficulties the blurring distinction between goods and (digital) services causes. She subsequently gives an overview of the limitations **competition law** entails for servitization models. **Consumer law** is a third field of EU law that is heavily influenced by new servitization models. Hojnik points out that legislative changes are due in the field of product liability and product safety. Servitization can furthermore contribute to a better **resource efficiency** in Europe and Hojnik makes clear that quite a number of European instruments and proposals stimulate this process. Finally, she analyses the importance of **public procurement law** allowing for outcome-based contracting. She concludes with a plea for regulation that assures the legal advancement of various servitization business models but also social and environmental advancement.

In Chapter 4 (*Servitization and competition law*), **Bostoën, Van Acker and Devroe** (KU Leuven) look at the competition law implications of product-oriented, use-oriented and result-oriented PSS. They use the car sector as a case study, given the financial/economic significance of cars for consumers, the enthusiasm with which car makers have embraced servitization, and the particular competition law framework applicable to this sector. As regards product-oriented PSS, Bostoën, Van Acker and Devroe first examine the **restrictions that competition**

law imposes on manufacturers in vertical relationships. They then examine possible techniques for manufacturers to bypass the obligations imposed by competition law. Vertical integration has proven a commercially difficult and legally flawed way to avoid such regulation. Subsequently, Bostoen, Van Acker and Devroe explain that **the use-oriented model** is able to effectively bypass the obligations imposed by competition law. This model will be able to (a) lock out independent repairers by including repairs (and other aftermarket services) in the subscription price; and (b) completely prevent parallel trading by eliminating sales. The prohibition of tying as an abuse of dominance could perhaps provide some counterweight, but its effectiveness remains to be tested in a servitization scenario and becomes even more difficult – if not impossible – in cases of **result-oriented PSS**, where product and service have effectively become one. Although Bostoen, Van Acker and Devroe certainly do not claim that these legal aspects are the (main) source of inspiration for the launching of subscription-only models, they do believe that **the impact of such models on current competition law and policy** deserves to be taken into account from a consumer welfare perspective.

3. CONTRACT LAW AND PRODUCT LIABILITY LAW ASPECTS

In Chapter 5 (*Managing the need for product change in contract and product liability law*), Vibe Ulfbeck (University of Copenhagen) addresses how contract and liability law can cope with the need for product adaption in servitization models. She points out the current unclarities that could pose barriers for actors who want to implement circular servitization models. As far as contract law is concerned, Ulfbeck makes clear that the existing default **contract law provisions** provide limited inspiration for ‘Product as a Service’ contracts because of their linear approach. A better source of inspiration are other PaaS contracts. As far as **liability law** is concerned, the complexity of the liability rules may create a barrier for successful PaaS models so that Ulfbeck pleads for clear indemnity clauses in PaaS contracts. Take backs and reentry pose similar challenges for contract law and liability law. There is little guidance on how to make conformity assessments or safety assessments of **second life products**. Ulfbeck pleads for the development of new standards and norms to eliminate this uncertainty and respond to a new circular reality.

In Chapter 6 (*Contractual liability, exoneration and redress in the B2B contractual chain*), Dorothy Gruyaert (KU Leuven) examines if and to what extent the contractual liability in a B2B relationship forms a legal barrier to servitization. Her analysis focuses on Belgian law and EU law, with some references to Dutch and English law. Gruyaert first explains that liability rules as such do not form an obstacle to a servitization model, given the **contractual freedom**. However,

there are also **legal boundaries to contractual freedom**, most importantly in the form of the control of unfair contract terms, also in a B2B context. Open norms play a crucial role in this regard. Gruyaert furthermore explains how contractual liability can also be a tool of private enforcement to encourage sustainable business and how certification can increase the relevance of process obligations. She also explains how new due diligence obligations and obligations to monitor the entire supply chain expand the role of contractual relationships. She concludes that servitization makes contract drafting increasingly demanding and complex but that clear and adequate contract drafting is also crucial for the success of servitization.

In Chapter 7 (*Movable servitization: Contractual liability in the B2C relationship*), **Harry Slachmuylders** (KU Leuven) focuses on **contractual liability in use-oriented and result-oriented PSS contracts for movables**. First, Slachmuylders focuses on the EU (consumer) acquis for service contracts and sets out the **national legal framework in Belgium and the Netherlands for service contracts**. Given the importance of contractual freedom for service contracts, Slachmuylders subsequently gives a brief overview of the **content of a typical PSS contract available on the B2C market** and briefly addresses how circularity can be included in PSS contracts. Finally, he deals with the issue of **contractual liability** whenever one of the parties to the PSS contract fails to fulfil its obligations. He discusses the notion of **breach of contract** in the specific situation of non-performance by either the PSS supplier or the PSS user, the **remedies** in case of breach of contract, and how the PSS supplier often contractually modulates these remedies or contractually limits or excludes its liability. Finally, this book chapter analyses the **effects of force majeure**.

In Chapter 8 (*Ensuring Circularity in Service Contracts*), **Alberto De Franceschi** (University of Ferrara) analyses the growing shift from sales to services contracts. He focuses on **how to embed circularity** in services contracts. De Franceschi discusses a specific business case – the ‘Elevator as a Service’ – to illustrate the role a digital passport can play in ensuring circularity. He subsequently analyses more in general the European developments with regard to the **Digital Product Passport** and the role of such passport as a tool for enhancing sustainability. He concludes with an analysis of a number of **policy options** to stimulate servitization, amongst others the reinforcement of the Eco-Design directive and the development of a digital product passport, an adaptation of the Product liability directive and the extension of the protection provided by the EU Directive on digital content and digital services to the B2B sector and to the analogic environment.

4. PROPERTY LAW AND INSOLVENCY LAW ASPECTS

In Chapter 9 (*Property Law and Circular Economy*), **Vincent Sagaert** and **Kato De Schepper** (KU Leuven) start from the observation that in a circular, service-oriented economy ownership fades into the background. In their chapter the authors evaluate to what extent property law and recent reforms, such as the recodification of Belgian property law, facilitate the development of a circular, service-oriented economy. Their focus is on Belgian law, but Dutch, French, German and Swiss property law is also discussed. The chapter first analyses how modern property law, and specifically the **principles of unity and transparency**, currently cause problems or at least legal uncertainty for circular real estate projects. However, several recent reforms in Belgian law do provide more options to split the property status of the building, in the form of an **enhanced retention of title** and/or an **accessory building right**. The authors therefore do not see a need to abandon the rules on immovable accession and the unity principles to achieve circular buildings. The chapter furthermore not only analyses the **internal operation** of these instruments but also **their party effectiveness** as an important element in the protection of the supplier of circular goods.

In Chapter 10 (*Servitization in Real Estate and Insolvency Risk*), **Denis Voinot** (Université de Lille) looks into the insolvency risks of the servitization trend in the real estate sector. Starting from the observation that buildings have a particular value in the eyes of their users, Voinot claims that servitization creates a **particular relationship between the supplier/owner and the user of the building, which is not without risks**. On the supplier side, servitization does not necessarily guarantee better profitability and may even increase the **business insolvency risk**. On the user side, as the user is not the owner of the goods he uses and hence has less assets which serve as collateral for his obligations, there is an increased **personal insolvency risk** as well as an increased **risk of consumer overindebtedness**, which is not duly addressed by current consumer credit law. Next, Voinot investigates how to reduce the insolvency risks in a servitized residential real estate sector. First, Voinot argues that **consumer protection should be strengthened** (e.g. more transparency, extension of consumer credit law to operational leasing and even to service contracts). Also he argues that, in the event of non-payment, the user of the building should be protected (e.g. continued entitlement to the provision of the service; any asset made available during the provision of the service could be deemed temporarily non-returnable). Second, Voinot suggests to **mitigate the business insolvency risk** by including a substitution clause from the outset, allowing the service provider to be replaced by another company in order to continue the service.

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