

# A Legal Framework for Using Smart Contracts in Consumer Contracts: Machines as Servants, Not Masters

Mateja Durovic\*  and Chris Willett†

Smart contracts, as a newly developed technology, may radically re-shape traditional contractual relationships, transferring the power to perform and enforce from contractors to robots. This paper provides a framework which seeks to ensure that this transfer of power does not undermine vital consumer law values. The starting point is the well accepted idea of consumer law being based on values aiming to protect consumers as weaker parties in their relationships with traders and this will be built on using various new arguments. First it will be argued that any brave new world of smart contracts will still need the law to provide the sorts of rights it already does: smart contracts may enhance data preferences and improve choice up to a point, but they cannot produce market choices replacing the need for such legally mandated rights. Next it will be shown that to reflect underpinning protection values, some such rights must operate in particular ways. This includes rights concerning information and contract cancellation, conformity standards, remedies, and unfair terms: ‘time sensitive’ rights that must be available at certain stages of the relationship.

## INTRODUCTION

### Core arguments, significance and scope

What are the latest challenges of the Fourth Industrial Revolution for consumer-technology law? Contract formation by electronic means (such as Internet or email) has been around for a long time now, and consumer law has responded with specialised consumer protection approaches, for example information and cancellation rights to protect consumers in such ‘distance’ contracts.<sup>1</sup> However, this article deals with the more recent scope for yet further significant automation of business to consumer (B2C) contractual relations, particularly via so called ‘smart contracts’ (SCs), which employ distributed ledger or ‘blockchain’ technology.<sup>2</sup> This can involve creation of a legal contract, but more typically involves the SC code performing the obligations, the actual legal contract having been made in natural language form.<sup>3</sup> Our

\*Reader in Law and Co-director of Centre for Technology, Ethics, Law and Society at King’s College London.

†Professor of Law at the University of Essex.

- 1 Consumer Contracts (Information, Cancellation and Additional Charges) Regulations 2013/3134 (CC(ICA)R 2013); On the consumer vulnerabilities these rules aim to protect against, see Geraint Howells, Christian Twigg-Flesner and Thomas Wilhelmsson, *Rethinking EU Consumer Law* (London: Routledge, 2018) ch 3.
- 2 Law Commission, *Smart Contracts, Call for Evidence* (2020) 2.5; Law Commission, *Smart Legal Contracts: Advice to Government* Law Com No 401 (2021) para 2.12.
- 3 Law Commission, *Smart Legal Contracts: Advice to Government* *ibid* para 1.4.

focus here is on this performance dimension, understood very broadly as any way the technology may automate the performance of a contract or related activity. This may be pre-contractual, for example supporting provision of statutory information or cancellation rights, or later, for example the trader being automatically paid on product delivery,<sup>4</sup> or automated enforcement of the terms. It also includes how the SC technology may need to develop or to interact with other forms of automation (such as AI) or with humans, to produce desired outcomes (for example, as proposed below here, to facilitate human analysis of complex legal concepts).

The central point of this paper is that consumers, as weaker parties in their relationship with traders, need to be protected by pausing the continued operation of SC technologies, thereby suspending, for example, consumer payment obligations, and enforcement action against the consumer while complex questions of (necessary protective) law are decided off chain. There is a developing scholarship on how existing legal rules (on matters such as formation, vitiating factors, and remedies) might apply to SCs in both business to business (B2B) and B2C contracts.<sup>5</sup> However, this paper does something quite fundamental that has not been done in any of this previous work. It constructs a framework to guide the relationship between consumer law and SCs (in their pre or post contractual role in delivery or performance of a contract or contractual-related activity) and consumer law. This framework, inter alia, aims to highlight when SCs are compatible, and when they may not be compatible, with underpinning consumer law values (such incompatibility being an example of the tension between the 'code *as* law' emphasising the primacy of technological code such as SCs, and the 'code *of* law' emphasising the primacy of legal values).<sup>6</sup> According to the framework presented here, there may be compatibility in some cases (for example information and cancellation rights), but where there is a conflict (for example where the automated performance may hinder enforcement of legal rights on conformity, remedies and unfair terms, which rights reflect consumer law values) then consumer law values should take primacy.

To ensure this, we may need *new* rules or at least smart use of current unfair practices rules requiring long-term B2C contracts only to use SC technology designed to enable the human analysis of complex legal rights reflecting consumer law values and it is noted that this may require a greater focus on designers as part of 'law's audience'.<sup>7</sup> It is recognised that this choice to legally mandate protection via human intervention, while reflecting consumer protection values, may conflict with the more libertarian 'code as law' values of crypto-space and blockchain and increase the risk of errors and bugs. However, it is argued that there are means to reduce these risks, and *failure* to mandate human intervention may involve more serious risks of substantial consumer detriment.

---

4 *ibid* para 2.19.

5 See, for example, *ibid*.

6 Karen Yeung, 'Regulation by Blockchain: the Emerging Battle for Supremacy between the Code of Law and Code as Law' (2019) 82 MLR 207.

7 Laurence Diver, *Digisprudence: Code as Law Rebooted* (Edinburgh: Edinburgh University Press, 2022).

In constructing this framework, UK rules are taken as the main examples, but these rules and the values they reflect are seen across the EU (for example with the UK rules on information requirements, cancellation, conformity of goods and unfair terms originating in EU Law)<sup>8</sup> and much more broadly across the world.<sup>9</sup> Therefore the framework may be of significance for scholars and legal policy makers across the globe in considering the relationship between automation in contractual relations and underpinning consumer law values. It may also contribute to debates as to how SCs and other forms of automation affect values and rules (for example on termination) in B2B contract law, how consumer law should respond to disruptive technology generally,<sup>10</sup> and how law overall should respond to disruptive technology, in particular the role to be played by theories about ‘coherentism’ and ‘regulatory instrumentalism’.<sup>11</sup>

It is true that SCs are still far from being the norm in B2C contracts and the specific problems we flag as possible here (for example on conformity standards, remedies and unfair terms protection) have not *yet* been reported to have arisen. Possibly SCs will never become more routine, possibly the risks they might pose will never materialise. Nevertheless, as we explain further (in the second part below), given the pace of technological and market developments, the potential efficiency advantages of SCs, the vulnerable position of consumers, and the radical changes SCs could bring to contractual performance and enforcement, it is prudent to identify potential risks, especially if as suggested here we could reduce these risks by mandating appropriate technological design. The usage of SCs may raise a huge range of legal questions, for example as to applicable law, and compliance with the data protection requirements.<sup>12</sup> However, due to limited space, the framework developed here focusses on the sort of core substantive B2C contract law rules already mentioned, such as information and cancellation rights, conformity standards, remedies, and unfair terms protection.

## Structure

This article is structured as follows. The second part explains the basics of SCs, how they may become important in consumer law, and how previous scholarship does not address the questions addressed here as to the maintenance of consumer law values. The following parts build the framework that addresses

8 See Howells, Twigg-Flesner and Wilhelmsson, n 1 above, chs 3–5 (on the rules and underpinning values).

9 Geraint Howells, Ian Ramsay and Thomas Wilhelmsson, *Handbook of Research on International Consumer Law* (Cheltenham: Edward Elgar Publishing, 2018) chs 1, 6, 7, 8 and 12 (on the similar rules and values internationally).

10 Geraint Howells, ‘Protecting Consumer Protection Values in the Fourth Industrial Revolution’ (2020) 43 *J Consum Policy* 145.

11 Roger Brownsword, *Law, Technology and Society: Re-imagining the Regulatory Environment* (London: Routledge, 2019).

12 Thibault Schrepel, *Smart Contracts and the Digital Single Market Through the Lens of a ‘Law + Technology’ Approach* (Luxembourg: Publications Office of the European Union, 2021).

these questions. The third part sets out the accepted core values and legal rights aimed at protecting the consumer. From this point the paper takes completely original steps in developing the framework.

The fourth part shows that some such rights must operate in particular ways to reflect underpinning protection values. In such cases the question is when the SC technology can help the rights to operate in these ways and when it may actually hinder the appropriate operation of the rights. In the case of 'time sensitive' rights based on simple legal reasoning (for example fixed term cooling off periods) the fourth part shows that SCs may improve compliance and enforcement efficiency, although this is not certain and there are some risks, especially with unauthorised cancellation so more work is needed on these issues. However, this part also shows that other 'time sensitive' rights related to conformity standards, remedies and to unfair terms protection, depend on open textured norms (for example 'proportionality' and 'good faith'), which involve more complex legal analysis, whereby two or (often many) more factors must be balanced against one another.

The fifth part argues that if a single SC covers a long-term relationship, then to ensure that these open textured rights can be exercised at the appropriate stages in the relationship, any SC technology used in B2C contracts such that it can be paused (suspending, for example, payment obligations, and enforcement action) to enable humans to perform the sophisticated analysis; the SC process then being re-activated to deliver on what has been decided. This must be required by law: ideally via new rules, or at least by imaginative use of existing unfair practices rules, and probably with increasing emphasis on the responsibility of designers. The fifth part also reflects on how to address the enforcement challenges in an often pseudonymous and international environment. It further considers the tensions here between libertarian crypto-space and blockchain values and consumer protection law values, and how to guard against errors and bugs.

Then, going beyond the 'time sensitive' nature of some rules, the sixth part argues that the future research agenda should be to identify other legal responses that may be needed to ensure SCs and other forms of automation support and do not undermine consumer protection values; and reflects on possible opportunities and challenges in regulating automation, for example the use of AI in enforcement, penalties, and compliance.

The Conclusion summarises the arguments and reflects on what they can contribute to scholarship on law and disruptive technology more generally: in consumer law, general contract law (such as in relation to the termination remedy), and technology law and theory (in particular on 'coherentism' and 'regulatory instrumentalism').

## WHAT SCS ARE, WHY THEY MATTER AND THE GAPS IN EXISTING SCHOLARSHIP

### Nature and use of SCs

The use of SCs has grown considerably over the last decade. Among many different definitions, Cornell and Werbach provide a useful description of SCs as ‘self-executing digital transactions using decentralised cryptographic mechanisms for enforcement’.<sup>13</sup> Moreover, in its recent Advice to Government, the Law Commission lists three broad characteristics of a SC:

- (1) some or all of the obligations ... are performed automatically by a computer programme on the occurrence of specified conditions (‘automaticity’);
- (2) the computer programme is deployed on a distributed ledger or blockchain technology; and
- (3) the contract is legally enforceable.<sup>14</sup>

From the perspective of traditional contract law, the notion of a SC is to some extent a misnomer. It is true that the SC can represent the actual contract itself in the sense of a legally enforceable agreement between two or more contractual parties. So the SC coding technology might play the role of one of the parties to the contract in the actual formation of the contract, the other party being a human; or the code might play the role of both (or more) parties in the formation of the contract.<sup>15</sup> However, often SCs do not create legal contracts, in the sense of legally enforceable agreements between two or more contractual parties, rather the SC is the technology used to secure performance of promises established through a legal contract which was made by humans in natural language form.<sup>16</sup> Importantly, also some so-called SCs are not tied to legal contracts at all,<sup>17</sup> for example where non-fungible tokens (NFT) SCs are used by one party to manage and enhance their own digital assets, with no other party being involved – and there obviously therefore being no legal contract.<sup>18</sup>

However, the focus here is on the role played by SCs in performance/enforcement of legal contracts that have been made in the ‘traditional’ way between two humans in natural language form. We understand ‘performance/enforcement’ very broadly for these purposes, as any way the technology may automate the performance of a contract or related activity. Importantly this may go right back to the pre-contractual stage where, for example, the SC might support provision of statutory information or cancellation rights. It may cover performance of the obligations of either party, for example automatic

13 Nicolas Cornell and Kevin Werbach, ‘Contracts Ex Machina’ (2017) 67 *Duke Law J* 313.

14 Law Commission, *Smart Legal Contracts: Advice to Government* n 2 above, para 2.5.

15 *ibid.*

16 *ibid.*

17 Kelvin F.K. Low and Eliza Mik, ‘Pause the Blockchain Legal Revolution’ (2020) 69 *ICLQ* 135, 165–166.

18 See Kelvin F.K. Low, ‘The Emperor’s New Art: Cryptomania, Art & Property’ (2022) 86 *Conveyancer and Property Lawyer* 378.

payment of the trader on delivery of the goods, services, or digital content.<sup>19</sup> Equally, it might include automated enforcement of the terms, for example deducting sums from the consumer's bank account to pay a fee due for breach of the consumer's obligations. Further, it may cover how the SC technology may need to develop or to interact with other forms of automation (such as AI) or with humans, to produce the kind of solutions argued for below here ie pausing performance or enforcement to enable humans to analyse complex legal concepts.

In contrast to traditional contracting where performance depends on voluntary actions of the parties, the automaticity of contractual performance is the key distinctive feature of SCs. According to Nick Szabo, the inventor of SCs, the general objectives of SC design are to 'satisfy common contractual conditions (such as payment terms), minimize exceptions both malicious and accidental, and minimize the need for trusted intermediaries like banks or other kind of agents.'<sup>20</sup> SCs therefore aim to guarantee certainty and predictability in contractual performance by minimising not just the need but even the very possibility of human intervention in contractual performance.<sup>21</sup>

From the beginning, the use of SCs through encrypted blockchain has been closely tied to financial transactions involving virtual or cryptocurrency such as bitcoin. However, the use of blockchain-enabled SCs in B2C transactions is not confined solely to cryptocurrency trading, with alternative payment methods (APMs) like e-wallets and instant payments now being utilised by several platforms as a means of payment for goods and services. Strictly speaking, only contracts involving exclusively digital assets (for example cryptocurrencies) can be *fully* automated, as the performance of many other contracts would depend on physical delivery of the contractual subject-matter (for example moveable goods).<sup>22</sup> However, as indicated, automation of performance is what really marks out the 'smart' nature of the process, and so automated blockchain forms of e-payment may be considered a form of smart contracting, given that at least this payment element of the contractual obligation is automated. Firms with food delivery operations like Uber and Southeast Asia's Grab have invested in instant payments technology, incentivising users of their platforms to pay for transactions with their Uberpay and Grabpay e-wallets.<sup>23</sup> Although not currently reliant on blockchain technology, Grab plans to develop the necessary blockchain technology, as another firm has already done, in order to cut down the costs of transactions and to secure performance.<sup>24</sup>

19 Law Commission, *Smart Legal Contracts: Advice to Government* n 2 above, para 2.19.

20 Nick Szabo, 'Smart Contracts: Building Blocks for Digital Markets' (1996) 18 *Journal of Transhumanist Thought* 16.

21 Alicia Lim, '502 bad gateway: rebooting smart contracts' (2020) 20 *Legal Information Management* 106.

22 Alexander Savelyev, 'Contract law 2.0: "Smart" contracts as the beginning of the end of classic contract law' (2017) 26 *Information and Communications Technology Law* 1.

23 Financial Times, 'Grab: superapp secures superior price' *Financial Times* 13 April 2021 at <https://www.ft.com/content/51595b13-3697-495a-bd8c-9b6778856ac8> (last visited 11 April 2023).

24 'A Blockchain-Based Alternative to Grab is Now Listed on Binance' *FinTech News Singapore* 25 June 2019 at <https://fintechnews.sg/31813/blockchain/binance-mvl-tada-blockchain-chain-car-transparent-information-selling/> (last visited 11 April 2023).

This automated blockchain approach distinguishes such payments from standard online payments. A preference for contactless payment during the Covid-19 pandemic, and a rise in B2C distance contracts in e-commerce,<sup>25</sup> has driven an increase in such instant payment technologies.<sup>26</sup> SCs are also now being used for the delivery of photographs to consumers and in ‘ride-sharing’ contracts.<sup>27</sup>

### Why care about the relationship between consumer law values and rights, and SCs?

There are countless consumer-trader transactions every day across the world, for a vast and ever-growing variety of products. Within these transactions, as a result of defective performance, unfair standard terms and unfair practices consumers suffer hundreds of millions of pounds of financial detriment, as well consumer surplus losses (distress, negative impacts on private life) every year.<sup>28</sup> Many legal regimes have rules to limit such detriment.<sup>29</sup> These rules are explicitly or implicitly underpinned by values that see the consumer as more vulnerable than the business: in terms of ability to self-protect on entering the contract (for example less information, behaviourally irrational, limited choice, weaker bargaining power), and in terms of loss-bearing ability should things go wrong.<sup>30</sup> So it is self-evidently important to ask how a new form of contracting may support these values and rights, or conflict with/hinder them.

We have already noted the significant use of SCs in the field of financial services, and to pay for goods and services more generally. We have also noted that they are now being used in digital photographic and ride-sharing contracts, this signalling a move into mainstream digital content contracts, and contracts combining goods and services. This may be only the start. There is scope for enormous expansion in SC use.<sup>31</sup> What about contracts for movable goods? Certainly, as noted above, a SC cannot physically deliver goods to one’s door, but it *can* control if, when, by whom, how regularly, and for how long, the human (physical) deliveries will take place. In the case of digital content and

25 A distance contract is any contract concluded without the simultaneous physical presence of the trader and consumer. CC(ICA)R 2013, n 1 above, reg 5.

26 *The 2020 McKinsey Global Payments Report* (McKinsey and Company, 2020) at <https://www.mckinsey.com/~media/mckinsey/industries/financial%20services/our%20insights/the%202022%20mckinsey%20global%20payments%20report/the-2022-mckinsey-global-payments-report.pdf> [https://perma.cc/8KNV-PWKQ].

27 Law Commission, *Smart Legal Contracts: Advice to Government* n 2 above, para 6.33–6.34.

28 In the UK National Trading Standards alone dealt with over £1 billion in detriment between 2014–20. UK Department for Business, Energy and Industrial Strategy, *Reforming Competition and Consumer Policy* (2021) para 3.3.

29 See Geoffrey Woodroffe, Christian Twigg-Flesner and Chris Willett, *Woodroffe and Lowe’s Consumer Law and Practice* (London: Sweet and Maxwell, 10th ed, 2016) (UK); Howells, Twigg-Flesner and Wilhelmsson, n 1 above (EU); Howells, Ramsay and Wilhelmsson, n 9 above (internationally).

30 Chris Willett, ‘Re-theorising Consumer Law’ (2018) 77 CLJ 179; further at n 58 below, and related text on the greater than average vulnerability of certain consumer groups.

31 The most suitable type are ‘permissioned’ SCs, that would allow one or both authorised parties (for example the contractors) to perform a particular activity on the system, rather than ‘permissionless’ SCs that are more generally open to the public. Law Commission, *Smart Legal Contracts: Advice to Government* n 2 above, paras 2.34–2.44.

digital services, it can do all this, *and* it can ‘deliver’ the main subject matter of the contract (into one’s computer, phone, or AI operated fridge). There has also been increased discussion of their potential application in sectors such as healthcare, which could potentially affect huge numbers of consumer purchases of medicines and medical equipment or insurance policies.<sup>32</sup>

Of course, it is true that SCs are not *yet* widely used in B2C contracts, and they may never be so used. It is still too early to predict. However, SCs do have potential to be more broadly used in B2C contracts. As it stands now, there is no research showing that the specific problems we flag as possible here (such as on termination rights and unfair terms protection) have arisen in practice. Yet, we should surely think proactively rather than waiting for problems to arise. Indeed, a key theme in legal policy and scholarship in recent times has been how to develop approaches that are ‘future-proof’, ie capable of dealing with changing market and technological developments.<sup>33</sup> SCs are not the fanciful imaginings of an eccentric computer scientist. They are being used in real B2C contracts, albeit of course they are far from being the routine way of doing business, and they may never be. However, given the pace of technological and market developments (for example from virtually no internet to the internet becoming the main marketplace, in only about 30 years), it is hardly fanciful to imagine that SCs use *could* take off significantly. They may not be something that is actively campaigned for by consumers. However, businesses may see great attractions in using automated performance both to save on human (employee) costs, and to minimise the scope for consumer complaints and queries.

We should not let any associated problems creep up on us. Certainly, the UK Law Commission and the EU Commission have thought it important to be ahead of the game. They have produced reports of 227 pages and 60 pages respectively, covering a huge range of issues that could be important if SCs become more typical,<sup>34</sup> although neither considered the issue of contract law values. SCs potentially radically re-order contractual relations, shifting the power to perform and enforce from contractors to computer code/robots. It is surely extremely important to consider the challenges this could pose for contract law values both in B2C relations which we focus on here, but also in B2B relations, which we consider briefly below. Indeed, in addressing these questions, one may also advance the broader debate on whether social values or technical and economic possibility are more important.<sup>35</sup>

32 Asma Khatoun, ‘A Blockchain-Based Smart Contract System for Healthcare Management’ (2020) 9 *Electronics* 94.

33 Geraint Howells, Christian Twigg-Flesner and Chris Willett, ‘Protecting the Values of Consumer Law in the Digital Economy: The Case of 3D-Printing’ in Alberto De Franceschi and Reiner Schulze (eds), *Digital Revolution – New Challenges for the Law: Data Protection, Artificial Intelligence, Smart Products, Blockchain Technology and Virtual Currencies* (München: Verlag C. H. Beck oHG, 2019) 214.

34 Law Commission, *Smart Legal Contracts: Advice to Government* n 2 above; Schrepel, n 12 above.

35 On which, see Brownsword, n 11 above, ch 11.



## The existing discussion and the way forward

In recent scholarship, attention has been given to which elements of traditional contracts are covered by SCs, particularly whether they concern only contractual performance, or also extend to offer and acceptance – a view potentially already accepted in Singapore.<sup>36</sup> A similar case has not yet been decided by an English court.<sup>37</sup> However, as indicated above, the Law Commission takes the view that SCs can both form, and perform, a contract. More generally there has been a focus on the extent to which existing contract law doctrines are applicable to SCs – what Brownsword calls questions of ‘coherencism’.<sup>38</sup> For example, there has been work on breach and remedies: Can there really be a breach given the immediate and irrevocable enforceability of a SC? If there cannot, is this a problem, as breaching and paying damages may sometimes be efficient for the breaching party?<sup>39</sup> It is worth noting here that we must not assume that there is no practical way of exercising such remedies. So, an existing blockchain on which the SC has been built can be ‘forked’, ie a new blockchain branch or route is created with its own instructions or as suggested by the Law Commission it is possible to create a new SC that would reverse the effect of the first SC.<sup>40</sup> In addition to this, future technological improvement of the design of SCs may well offer further solutions for example when the payment was made by mistake.

Further questions have been raised as to what happens if the code malfunctions: whether the contractual obligations persist, or are rendered void or frustrated, issues that perhaps cannot be resolved by the code itself.<sup>41</sup> Rizzi and Skead have questioned whether the ‘trust a contracting party reposes in an algorithm [to conclude a contract] reflects the concept of trust underpinning the doctrine of undue influence’.<sup>42</sup> Then there has been work emphasising how relational aspects of contracts are necessarily reflected in open-ended provisions affording parties a wide discretion to deal with later unforeseen events<sup>43</sup> – events which cannot be conclusively spelt out when a SC is concluded. Most recently a report for the EU has argued for a partnership of law and technology in regulating SCs and discussed how this could work in relation to rules such as those on information rights, formalities, and enforcement in B2C contracts.<sup>44</sup>

The implications of SCs for underpinning values has been given limited attention. It has been noted that such values ‘cannot be wished away’ through

36 *Quoine Pte Ltd v B2C2 Ltd* [2020] SGCA(I) 2.

37 Henning Diedrich, *Ethereum: Blockchains, Digital Assets, Smart Contracts, Decentralized Autonomous Organizations* (Erscheinungsort nicht ermittelbar: Wildfire Publishing 2016); Cheng Lim, Calum Sargeant and T. J. Saw, ‘Smart contracts, bridging the gap between expectations and reality’ (Oxford Business Law Blog, 11 July 2016) at <https://www.law.ox.ac.uk/business-law-blog/blog/2016/07/smart-contracts-bridging-gap-between-expectation-and-reality> [<https://perma.cc/9Y4G-BAQQ>].

38 Brownsword, n 11 above, ch 11.

39 Savelyev, n 22 above, 15.

40 Law Commission, *Smart Contracts: Call for Evidence* n 2 above, para 5.76.

41 Savelyev, n 22 above, 15.

42 Marco Rizzi and Natalie Skead, ‘Algorithmic Contracts and the Equitable Doctrine of Undue Influence: Adapting Old Rules to a New Legal Landscape’ (2020) 14 *Journal of Equity* 3.

43 Lim, n 21 above, 107.

44 Schrepel, n 12 above.

a technological replacement.<sup>45</sup> Saveylev mentions ‘protection of the weaker party’, but says little on specific applications of such an approach in B2C relations.<sup>46</sup> Howells argues that it is important to consider the fairness of contract terms in B2C SCs, given that the exponential growth in distance contracting has already significantly expanded the use of (potentially detrimental) standard terms.<sup>47</sup> This is undoubtedly true and, as will be discussed below, there are important questions also as to many other consumer law rules, for example on conformity standards and remedies. However, central to our approach (and largely missing from other work on SCs) is that questions about unfair terms and other key consumer rights in SCs must take place based on a broader theoretical framework that engages with underpinning consumer law values.

Certainly, some prior work has emphasised the importance (in relation to SCs and digital disruption generally) of values. This work argues for choices to be made about the balance between furthering technology, and potentially competing values such as solidarity, human agency etc<sup>48</sup> but it does not engage in depth with values specific to consumer vulnerabilities. Howells, Twigg-Flesner and Willett have unpacked these values (protecting consumers from informational and bargaining weakness, and limited loss bearing capacity), arguing that the law should protect such values in circumstances of digital disruption.<sup>49</sup> However, this work did not consider SCs at all, far less the distinctive SC issues that we raise here, as to consumer protection values, time sensitive rights, rights based on simple legal reasoning and rights based on open textured general clauses.

## CONSUMER LAW VALUES AND RIGHTS

### Values-protecting consumers as weaker parties

It is well established that many consumers’ legal rights are rooted in values that aim to protect the consumer as the weaker party. One aspect of this is the idea that if traders suffer economic losses (for example due to consumer breach), they can often absorb this for instance through insurance, loss spreading across different parts of the business, etc. In contrast, consumers, as private citizens, usually have limited capacity to absorb economic losses caused by unneeded or defective products, or unfair terms.<sup>50</sup> Some types of loss are only likely to fall on consumers in B2C relations and may have devastating effects on personal and family life, for example repossession of goods and houses based on loan defaults. There may also be so called ‘consumer surplus’ effects; for example, loss of time, distress, inconvenience in personal lives or the frustration of obtain-

45 Howells, n 10 above, 155.

46 Savelyev, n 22 above, 13.

47 Howells, n 10 above, 20.

48 Brownsword, n 11 above, ch 11.

49 Howells, Twigg-Flesner and Willett, n 33 above.

50 Chris Willett, *Fairness in Consumer Contracts: The Case of Unfair Terms* (London: Routledge, 2007) 99–100.

ing no redress while (especially large) businesses are usually less likely to suffer these effects.<sup>51</sup> A further aspect of consumer vulnerability is that consumers will struggle to exercise self-reliance to protect themselves from these various forms of detriment.

Consumers will lack expertise and experience in the business in question, are known to be affected by various behavioural irrationalities, for example over-optimism or difficulty in assessing future risks,<sup>52</sup> and face increasingly sophisticated and manipulative behavioural advertising.<sup>53</sup> Consequently, consumers often have limited understanding of, and make poor choices about, how much they really need products, the risks of them failing, or the risks lurking in one-sided standard terms.<sup>54</sup> Even if consumers did better understand risks, there are often poor market choices (for example businesses often need only compete over core terms on price and main subject matter, not the huge numbers of ancillary terms)<sup>55</sup> and consumers rarely have the bargaining power to self-protect, for example by bargaining for better standard terms.<sup>56</sup> Finally it is important to mention the very significant work that moves beyond considering the position of consumers generally (as per the above sketch), looking at special characteristics or circumstances that may make some consumers even more vulnerable than is typical for consumers generally.<sup>57</sup> However, there is no space to develop this as part of the current framework.

More generally, and relevant to both average and especially vulnerable consumers, it should be noted here that there may be potential for AI to identify some unfair terms.<sup>58</sup> One possibility would be for this to be used to highlight the terms in question to consumers, potentially making for more informed choices by both average and vulnerable consumers. A step further would be for the terms to be removed, either automatically by the AI or by enforcement agencies who have been alerted by the AI generally. This might significantly reduce consumer detriment. However, as discussed further in the next part below, such systems are not by any means routinely in place, and even if they were, they would only work with a limited number of terms. So the above points as to consumer vulnerabilities still stand.

51 For evidence of this, with reference to lost leisure time and emotional costs. Citizens Advice and Oxford Economics, *Consumer Detriment: Counting the cost of consumer problems* (2016) chs 5 and 7; European Commission and Consumers, Health, Agriculture and Food Executive Agency, *Study on measuring consumer detriment in the European Union: final report, Part 1: main report* (Luxembourg: Publications Office of the European Union, 2017).

52 See, for example Florian Exler and others, *Consumer credit with over-optimistic borrowers* (Bank of Canada, Staff Working Paper No 2020-57, 2020) at <https://www.bankofcanada.ca/2020/12/staff-working-paper-2020-57/> [<https://perma.cc/846A-Y3DN>].

53 Federico Galli, 'Online Behavioural Advertising and Unfair Manipulation: Between the GDPR and the UCPD' in Marta Cantero Gamito and Martin Ebers (eds), *Algorithmic Governance and Governance of Algorithms* (Cham: Springer International Publishing 2021) 109-135.

54 Willett, n 30 above, 9.

55 *ibid.*, 26-27.

56 *ibid.*, 9-10.

57 Christine Riefa and Severine Saintier, *Vulnerable Consumers and the Law: Consumer Protection and Access to Justice* (London: Routledge, 2020).

58 Hans-Wolfgang Micklitz and others, 'The Force Awakens: Artificial Intelligence for Consumer Law' (2020) 67 *Journal of Artificial Intelligence Research* 169.

What are the implications of these vulnerabilities in the context of SCs? It should be emphasised that it is not being argued here that consumers are necessarily any more vulnerable in terms of informational and bargaining weaknesses when they enter a contract that will be performed by SC technology, than when they enter any other type of contract: smart contracting is mainly about automated performance, and SCs have no obvious characteristics likely to exacerbate the above discussed consumer informational or bargaining weaknesses at the pre-contractual phase. The crucial point, rather, is how SCs interact with the rights that reflect the vulnerabilities enumerated above. We set out these rights immediately below. Then we begin to construct the entirely novel elements of our framework. In the fifth section we explain how SCs may aid enforcement of some such rights (for example cancellation rights), and in this way help to counter the vulnerabilities above; but argue that SCs may seriously hinder enforcement of rights on conformity, remedies, and unfair terms, and in this specific sense SCs may exacerbate the above vulnerabilities.

### Legal rights reflecting these values

#### *Information and Cancellation*

Many legal systems, including the UK and EU, require traders to provide consumers with certain pre-contractual information.<sup>59</sup> These information rights aim to correct some of the abovementioned problems: to help consumers better understand the risks and benefits of the transaction on entering the contract, and better understand their rights when they may need to complain.<sup>60</sup> In partnership with pre-contractual information rights are cancellation rights: the right for consumers to withdraw from a distance or off premises goods contract within 14 days.<sup>61</sup> Such rights in the UK emanate from EU law, apply across the EU<sup>62</sup> but also exist elsewhere.<sup>63</sup> They are based again on the asymmetry of information between consumer and trader which poses an even greater risk in distance and off-premises contracts, where consumers may have had less opportunity to inspect the goods and where consumers may be even more likely to make impulsive, behaviourally irrational decisions to buy what they do not need.<sup>64</sup>

59 CC(ICA)R 2013, n 1 above (UK); Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights (Consumer Rights Directive).

60 Howells, Twigg-Flesner and Wilhelmsson, n 1 above, ch 3 (on rationales and limits of information rules).

61 CC(ICA)R 2013, n 1 above, reg 30(2).

62 Consumer Rights Directive, n 59 above.

63 Christian Twigg-Flesner Reiner Schulze and Jonathon Watson, 'Protecting rational choice: Information and the right of withdrawal' in Howells, Ramsay and Wilhelmsson, n 9 above, ch 6.

64 Howells, Twigg-Flesner and Wilhelmsson, n 1 above, ch 3 (on rationales and limits of cancellation rights).

### *Conformity Standards and Remedies*

Reflecting protective values, in particular aiming to protect consumers from large economic and consumer surplus losses, most legal systems impose conformity standards on suppliers of products, and provide remedies for breach of these standards.<sup>65</sup> In the UK, the goods and digital content conformity standards come in the form of statutorily imposed terms, for example on quality, fitness for purpose and compliance with description and with a package of remedies: short and long term refund, repair, replacement, price reduction and damages.<sup>66</sup> For services a key conformity standard is that requiring the supplier to carry out the service with reasonable care and skill, with remedies of repeat performance, price reduction, damages and (for serious breach) termination.<sup>67</sup> The idea that consumers need special protection from economic and surplus losses is reflected in this broad menu of remedies, as well as the fact that these conformity rules cannot be excluded or restricted.<sup>68</sup>

### *Unfair Terms Control*

As indicated above, part of recognising consumer vulnerability is acknowledging the substantive losses that unfair terms may impose on consumers and the limited capacity of consumers to understand these risks or bargain to reduce them. Many legal systems make provision for this via dedicated B2C unfair terms regimes that give more protection to consumers than to parties in B2B contracts.<sup>69</sup> In the UK, the Consumer Rights Act 2015 B2C regime covers terms excluding business liability to consumers and terms that are detrimental to consumers in other ways, such as allowing businesses to impose unfair obligations and liabilities on consumers or to vary (to the detriment of the consumer) the consumer's obligations, or allowing the business to take action that may be detrimental to the consumer such as terminating the contract. All such terms must be transparent and are subject to a test of unfairness.<sup>70</sup>

### **Technology cannot produce market choices that replace these legal rights**

There has been some work on how in online dealing the technology may be able to produce market choices that help protect and empower consumers for example in relation to professional certification, defamation, fraud-prevention,

65 Cynthia Hawes and Christian Twigg-Flesner, 'Sales and Guarantees' in Howells, Ramsay and Wilhelmsson, n 9 above, ch 8.

66 Consumer Rights Act 2015 (CRA 2015), Part 1, chs 1-3, common law damages remedy preserved by ss 19(9), (10) and 11(a).

67 *ibid*, Part 1, ch 4. Common law damages and termination remedies preserved by ss 54 (7)(a) and (f).

68 *ibid*, ss 31, 47 & 57.

69 Chris Willett and Thomas Wilhelmsson, 'Unfair Terms and Standard Form Contracts' in Howells, Ramsay and Wilhelmsson, n 9 above, ch 7.

70 CRA 2015, ss 61-63.

and copyright law,<sup>71</sup> and by improving bargaining opportunities in relation to data preferences.<sup>72</sup> Building on such approaches, it may be possible that SC technology can be designed in a way that improves compliance with, and enforcement of, consumer law requirements. However, it is accepted that this is unlikely to be able to extend to the point where the market choices can replace the need for the basic existence of the above sorts of core consumer rights in the context of SCs<sup>73</sup> or indeed in other contexts such as the 3D-printing market.<sup>74</sup> In short, the above rights (on information, cancellation, conformity, remedies and unfair contract terms) remain vital to ensure that we continue to respect consumer protection values.

### RESPECTIVE ROLES FOR TECHNOLOGY AND HUMANS: TIME-SENSITIVITY, SIMPLE RIGHTS, AND COMPLEX RIGHTS

The next (previously unexplored) question is to what extent SCs may help in the enforcement of the legal rights that reflect underpinning consumer protection values and when, by contrast, the technology must defer to human intervention to effectively deliver these rights. A lot here depends on the distinctive features of these rights: How are they worded? What exactly do they require to happen? What obligations are owed by who and when must these be fulfilled? The overarching question must be whether there is something distinctive about how any given right must be approached to make sure it reflects background protection values. We do not claim here to have a comprehensive answer to this in relation to all consumer rights. However, our contention is that one feature of some key consumer rights is time-sensitivity, and that this has huge implications for the use, and limits, of SCs, particularly in determining when SCs must allow for human intervention.

#### Time sensitivity and simple rights

Some rights are time-sensitive in that they must be exercised at particular stages in the relationship if they are to truly reflect underpinning protection values. What we show in the following sub-sections is that SCs *might* be able to help enable more efficient compliance in relation to the rules on information and cancellation, but that this is not certain, that there are risks, and that further work is required on this. In the case of more complex rights on conformity, remedies and unfair terms that need to be exercised later, it is shown that SCs could cause serious problems.

71 David Johnson and David Post, 'Law and Borders: The Rise of Law in Cyberspace' (1996) 48 *Stanford Law Review* 1367, 1381; David Post, 'Against "Against Cyberanarchy"' (2002) 17 *Berkeley Technology Law Journal* 1365, 1387.

72 Lawrence Lessig, *Code and other Laws of Cyberspace* (New York, NY: Basic Books, 1999) 161.

73 Joshua A. T. Fairfield, 'Smart Contracts, Bitcoin Bots, and Consumer Protection' (2014) 71 *Washington and Lee Law Review Online* 36, 38.

74 Howells, Twigg-Flesner and Willett, n 33 above.

*Information and Cancellation Rights*

Time-sensitivity is most obvious with information and cancellation rights, especially as the law itself specifically lays down time windows for these rights: information to be provided before the contract is concluded, cancellation within 14 days.<sup>75</sup> Yet the full extent of this time sensitivity is only captured by reflecting more deeply on the rationale for these rights, what is lost if they are not delivered at the right time, and the limits of an alternative compensation remedy.

As outlined above, in seeking to protect consumers from informational and behavioural vulnerabilities, and their limited capacity to absorb losses caused by unsuitable purchases, these rights aim to improve informed choice as to the pros and cons of a contract and based on this to allow the consumer to choose to cancel. Research has shown that pre-contractual information will often not be made use of by consumers in practice, when they are more focussed on the core elements of the transaction; and that they may make more use of certain information (for example on the identity of the trader or complaints procedures) at the stage when a dispute arises.<sup>76</sup> So, there may be a case for the law to insist on such information being re-issued/emphasised at the dispute stage. Nevertheless, providing the information pre-contractually, as is currently required, is arguably important in at least giving consumers the *chance* to make more informed choices,<sup>77</sup> in particular about the right to cancel, which is only available for 14 days.

Damages cannot properly compensate for information not being provided at the required time. Compensation is technically available for failure to supply the required information to cover costs incurred by the consumer due to the failure to supply the information, these costs being limited to the price of the goods, services, or digital content.<sup>78</sup> This might cover, for example, return of charges that the consumer did not realise were payable because the required information as to the full cost was not disclosed. However, it does not cover the inconvenience, time or stress caused by the undisclosed costs and the need to dispute these charges.

If the information not disclosed is as to the consumer's cancellation right, then the recoverable costs could be the full price of the product under the contract. However, the rule that the claimable costs are limited to the contract price means the consumer would not be compensated for the time, inconvenience, stress, or other surplus losses, or for consequential financial losses, caused by having stayed bound to a contract they might otherwise have cancelled and that was unsuitable for them.

<sup>75</sup> notes 60–62 above, and related text.

<sup>76</sup> William C. Whitford, 'Contract Law and the Control of Standardised Terms in Consumer Contracts: An American report' (1995) 3 *European Review of Private Law* 193, 195–199.

<sup>77</sup> Chris Willett, 'The Functions of Transparency in Regulating Contract Terms: UK and Australian Approaches' (2011) 60 *ICLQ* 355, 375.

<sup>78</sup> CRA 2015, ss 19(5), 42(4) and 54(4).

*Information and Cancellation as 'Simple' Rights*

Where time sensitive rights are grounded in simple legal analysis it might be possible for SCs to be programmed to deliver on these rights; and sometimes this may be more efficient for the trader and more sensitive to underpinning consumer protection values, compared to traditional approaches.<sup>79</sup>

While SCs are typically talked of as *performing* the contractual obligations (so only coming into play after the parties are bound by the contract), there seems no reason that SCs cannot be employed pre-contractually, for example to support provision of statutory information or cancellation rights. In relation to the information rights, the rules are simple: certain specific information must be provided to the consumer prior to conclusion of the contract.<sup>80</sup> So a SC could surely be programmed to release this information on receipt of the consumer's offer to enter the contract. Of course, the SC's role would only be to trigger release of the information. The information, unlike the SC which is in algorithmic language, must be provided in ordinary natural language to enable it to serve its purpose of improving informed choice.<sup>81</sup> It might be that SCs add nothing at all here. Automation has been around since the 1960s, whereby information stored on a centralised system can be released automatically at certain pre-determined times; this has been how the sort of information being discussed here has been released so far to consumers. However, if the trader is in any case using a SC for other elements of the execution of the contract, then it might be more efficient if this pre-contractual information provision was programmed into the SC along with everything else, reducing the number of information sources. More work is probably required on the technical and financial advantages and disadvantages of such a move.

Cancellation is also generally a 'simple' right that does not require any complicated analysis. It is available for a set period (14 days) after a specific point in time (delivery of goods, or entry into a digital content or services contract). A SC might be able to make exercise of cancellation rights more efficient. The SC might be programmed to give prominent reminders to consumers of the cancellation period, there being a button consumers can press within 14 days to exercise the cancellation right. The technology seems to be capable of then 'killing' the original SC;<sup>82</sup> and presumably a separate SC can have been pre-programmed to respond appropriately, indicating that

79 On using SCs to more efficiently and effectively enforce other rights for example by triggering automatic payment of flight delay compensation, see Oscar Borgogno, 'Usefulness and Dangers of Smart Contracts in Consumer and Commercial Transactions' in Michel Cannarsa, Larry Dimatteo and Cristina Poncibò (eds), *Smart Contracts and Blockchain Technology: Role of Contract Law* (Cambridge: CUP, 2019). This may work well as these are 'simple' rights that the technology can easily process and act upon: if the flight is delayed for more than a specific period, a specific amount becomes payable. Regulation (EC) No 261/2004 of the European Parliament and of the Council of 11 February 2004 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights.

80 CC(ICA)R 2013, n 1 above, reg 13(1)(a).

81 Mateja Durovic and André Janssen, 'The Formation of Blockchain-based Smart Contracts in the Light of Contract Law' (2018) 26 *European Review of Private Law* 753; Law Commission, *Smart Legal Contracts: Advice to Government* n 2 above, para 6.9.

82 Schrepel, n 12 above, 37.



the payment is not due or providing a refund. As with information rights, it may be more efficient for traders for this whole process to be built into a SC. It may also benefit consumers, to the extent that it provides a simple, prominent means (a button) to cancel. This may make more consumers likely to reflect on this right and whether they wish to exercise it as currently the evidence is that there is poor take-up, this possibly being partly due to lack of awareness of the right and the steps (for example an email) required to exercise it.<sup>83</sup>

One slightly complex issue with cancellation is that if the consumer has expressly consented to receive services during the 14-day period, they must pay a proportionate sum for the services received.<sup>84</sup> So a calculation must be made as to what this sum should be. This may be too complex an analysis to be left to the technology (see further below on complex analysis); but at least the technology will have completed its role in reversing the transaction, and the amount of the refund can be calculated/negotiated by the humans.

It might be argued that using SCs to exercise cancellation rights is problematic. After all a key feature and purpose of SCs is their irreversibility, this helping to engender efficiency and trust in enforcement; so that their whole purpose might be said to be defeated by programming them to perform cancellation functions. However, one might say that the whole point of contracts generally is to be enforced, yet the law deviates from this in cases like cancellation rights in order to reflect underpinning consumer protection values. So, whether SCs are used or not, these cancellation rights need to be respected, and if doing this via a SC is more efficient and potentially more reflective of consumer protection values, then there is a case for this approach. Further, as has been pointed out above, the notion of reversing or changing direction is already part of the technical reality, whether via ‘forking’ the original blockchain on which the SC has been built, or by creating a new blockchain. None of this of course means that the irreversibility/immunity of SCs should not continue to be taken as the default position.<sup>85</sup>

One potentially important problem with using SCs for cancellation rights is the risk of unauthorised cancellation. Interaction with SCs on blockchains often involves the use of private keys paired to public addresses and this so-called ‘asymmetric cryptography’ may be susceptible to being hacked,<sup>86</sup> or subjected to attack through social engineering such as phishing. There are safeguards, for example use of mechanisms that warn users of actions being taken and delay final execution of the action. This is typically about giving the users the chance

83 Howells, Twigg-Flesner and Wilhelmsson, n 1 above, 116.

84 CC(ICA)R 2013, n 1 above, reg 36(2).

85 In support of appropriate compromises on SC immutability, see Schrepel, n 12 above, paras 4.2.1.1–4.2.1.2.

86 Andreas M. Antonopoulos, *Mastering Bitcoin: Programming the Open Blockchain* (O’Reilly Media Inc, 2nd ed, 2017) ch 4; On different forms of hacking, see Kevin F. K. Low, ‘Confronting Cryptomania: Can Equity Tame the Blockchain?’ (2020) 14 *Journal of Equity* 240.

to protect funds by withdrawing them,<sup>87</sup> but it might be possible to apply it to allow the users to prevent an unauthorised cancellation.

So, as with information rights, more work is probably needed on whether there would really be efficiency savings in using SCs for cancellation rights; and work is also needed on the specific challenges of protecting against unauthorised cancellation in SCs.

### Time sensitivity and complex rights

Now we turn to other rights, where the issue of time sensitivity may be less obvious than with information and cancellation rights; and where the complexity of the rights may mean that the SC technology cannot play the sole role in delivering on these rights.

#### *Remedies and Time Sensitivity*

If a consumer is due a financial payment in the form of a refund, price reduction or damages, then significant delays in payment leave the (often more financially vulnerable) consumer without that money (and the interest it might earn). The larger the sums involved, the larger the detriment caused by the delay. The longer the delay also, the more chance the consumer will never get around to claiming, as a degree of apathy sets in. If a consumer seeks a 'cure' remedy (repair or replacement), significant delays may leave the consumer with goods that do not work properly and that perhaps (for example in case of computers) cannot perform functions that are essential to daily routines. Delays in curing a service may cause similar problems: not being able to use badly serviced cars, computers, appliances etc. In the case of home renovation services, delays in putting things right may cause very serious disruption to home and family life affecting use of kitchens, bathrooms etc. Indeed, in the case of very serious breaches, consumers may lose confidence entirely in the trader and wish to exercise a termination remedy, to escape their future obligations to accept and pay for the goods, services, or digital content.

Now obviously there may be delays in providing remedies in any type of contract. However, as we shall now see, delays could be a particular problem in long-term relationships whose performance is secured by SC.

#### *Complex Rights and Long-Term Contracts*

Where the non-conformities lie in the technical digital sphere (for example defective digital content, security flaws) there is no doubt increasingly available

87 Gleb Zykov, 'How to protect private keys' (FX Empire, 21 November 2021) at [https://uk.style.yahoo.com/protect-private-keys-084400182.html?guce\\_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce\\_referrer\\_sig=AQAAAAAnle4R5I3XTgq-HPK6x9ONwT8vGBeehNBgTxUJiMdWgZh1pGTwCdIY-6Krr0vBf7M8atDALyBL0Rdq-E3P9RB-CGj6t9y0vSehan1dWDWsjBa7xHyEyfa6Rbav7eTELXpB19cSAw0zWuQZ1oP\\_87Ivp532ZGhex2ikD72K1kvG8u&gucounter=2](https://uk.style.yahoo.com/protect-private-keys-084400182.html?guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAAAnle4R5I3XTgq-HPK6x9ONwT8vGBeehNBgTxUJiMdWgZh1pGTwCdIY-6Krr0vBf7M8atDALyBL0Rdq-E3P9RB-CGj6t9y0vSehan1dWDWsjBa7xHyEyfa6Rbav7eTELXpB19cSAw0zWuQZ1oP_87Ivp532ZGhex2ikD72K1kvG8u&gucounter=2) [<https://perma.cc/FG8E-X9LP>].

capacity for the SC technology to identify these problems. However, it is harder to see how the technology can identify, for example, defects in goods or bad financial advice; although even here this might be possible for instance where, following a sale of goods, the SC continues to be linked to goods, or where in relation to a financial transaction, the SC could employ algorithms that provide some measure as to the standard of financial advice. Where the technology *cannot* detect the problem, there is immediately a stumbling block, because it will then be for the consumer to report the problem, but if the SC is programmed to be irreversible, then the report may be irrelevant – the SC ignores the report and nothing can be done until the end of the relationship.

Suppose though that the SC *can* be programmed to recognise an alert the consumer makes by pressing a certain ('non-conformity') button, and that the SC is supposed to then take action to resolve matters. The problem is how exactly the technology should do this. Contractual conformity standards and the associated remedies are based on a host of open textured standards that require sophisticated legal analysis, for example balancing two or more factors against one another. How is SC technology supposed to *apply* such open textured standards?<sup>88</sup> In the UK for example, there is a breach giving rise to remedies if the goods are 'unsatisfactory' by the standards of the reasonable person.<sup>89</sup> based on factors such as price, description, durability, fitness for common purposes, appearance, safety, and whether a pre-contractual examination by the consumer should have revealed the defects.<sup>90</sup> In the case of services, there will normally only be a breach if the service has not been carried out with reasonable care and skill,<sup>91</sup> which depends on normal industry practice, taking into account the costs and benefits of any other steps that could have been taken.<sup>92</sup> Then on remedies, for instance, whether a trader can refuse to repair or replace goods or digital content, depends on whether the remedy the consumer wants, for example replacement, is 'disproportionately' more expensive than repair, taking into account the reduced value of the goods caused by the defect, the 'significance' of the defect (for example the trouble it has caused) and whether 'significant inconvenience' would be caused to the consumer if replacement is refused and they must accept repair.<sup>93</sup>

It is hard to see how a robot can perform this sort of sophisticated legal analysis. The SC technology is based on typical 'if, then' logic, which can carry out simple analysis, for example if a contract is to be concluded, specific information X, Y and Z must be supplied to the consumer. Now one might say that concrete numerical scores could be assigned to the above criteria and these scores coded into the SC. So, for example, in applying the satisfactory quality term, the SC could be instructed to apply 10 points for safety problems, five points for minor defects, etc; and if a certain score is reached the goods are of

88 Howells has noted the difficulty of SCs applying such standards and the related problem of SCs only being capable of very literal interpretation of contractual provisions. Howells, n 10 above, 154.

89 CRA 2015, s 9(2).

90 CRA 2015, s 9(3).

91 CRA 2015, s 49.

92 *Bolam v Friern Hospital Management Committee* [1957] 2 All ER 1184.

93 CRA 2015, ss 23(3)(a)/(4), 43(3)(a) and (4).

unsatisfactory quality. In reality, traditional open textured legal reasoning fixes a subjective value on these various criteria and on whatever cumulative value should be achieved overall for a breach: it is just a value that is not as explicit as a numerical value.

But how can this sort of simple ‘scoring’ approach be applied to criteria that are external to the subject matter being judged, and that depend on personal or broader market circumstances? For instance, how, in assessing satisfactory quality, can a code determine whether defects are to be discounted because the particular consumer should have noticed these during an examination?<sup>94</sup> How can the code assess whether a repair remedy would cause a consumer ‘significant inconvenience’ as part of an assessment of whether the requested alternative replacement remedy is disproportionate? How can a code decide on average market standards of performance, for the purposes of applying the ‘reasonable care’ standard in services contracts?

These problems for SCs in carrying out more sophisticated legal analysis, may be irrelevant in discrete ‘spot’ contracts where provision of the goods, digital content or services takes place within minutes or a few days or weeks. The SC will have completed its job, and then if the consumer wishes to complain about a lack of conformity, and to claim remedies, they do so in the normal way, by human engagement over the law and facts. The problem could be in long-term contracts where goods, digital content or services are supplied periodically and continuously, such as contracts for phones, cloud storage or financial services. Here, if the SC cannot carry out the necessary analysis to provide redress, resolution of the problem may be delayed until the end of the long-term contract, this being a problem given the time sensitive nature of the issues.

### *Unfair Terms and Time Sensitivity*

It seems likely that if SCs do become increasingly widely used in B2C relations, they will make at least some use of standard form contracts. As Low and Mik have noted, because drafting a SC is expensive, SCs ‘will only be cost-effective where a standard form will eventually be used in scale.’<sup>95</sup> This does not necessarily mean that all the detailed standard terms will be coded into the SC script itself. The sheer numbers of standard terms in some contracts, and the complexity of some of them, could unduly exacerbate the complexity and costs of programming. Perhaps the easiest and most obvious terms that might be coded in would be those involving consumer payment obligations, consumer default on these obligations, and resulting enforcement. These issues will often be quite easily measured and coding them would arguably fit the SC philosophy of simplifying (by automating) performance and enforcement. There might for instance be coded terms that allow for price or interest rate increases, or that set a minimum interest rate notwithstanding drops in national

<sup>94</sup> CRA 2015, s 9(4)(b).

<sup>95</sup> Low and Mik, n 17 above.

rates;<sup>96</sup> and where the code then goes onto to provide that if the consumer does not pay, default consequences automatically ensue, for example charges, the commencement of debt recovery proceedings or reports to credit reference agencies.

It is true that many such things are already automated, but SCs could just roll out automation more broadly, meaning that these negative consequences occur more and more without any human interaction or chance to dispute the fairness of the term or what is owed or allowed under it. Yet respect for consumer protection values surely makes it important that consumers can challenge such terms and actions as quickly as possible. Significant price and interest rate increases, and default charges, leave the (often more financially vulnerable) consumer without that money. The longer the delay also, the greater risk that apathy will set in, and the consumer will never get around to seeking to recover the money. The more quickly enforcement proceedings have been able to advance against the consumer without challenge and without the chance to pause, the greater the consumer surplus effects. Just as with remedies as discussed above, we shall now see that delays could be a particular problem in long-term contracts performed by SC technology.

### *Complex Unfair Terms Rules and Long-Term Contracts*

SC technology may be able to play a useful preventive role in controlling unfair terms. Many unfair terms regimes have ‘blacklists’ of terms that are always unfair, for example in the UK terms excluding or limiting the above conformity standards and remedies on quality.<sup>97</sup> As indicated in the previous section above, AI technology may have the potential to spot unfair terms<sup>98</sup> and either to highlight these to consumers to enable more informed decision making, or to assist in their removal from the contract altogether. It may in turn be possible to do this via SCs. These sorts of approaches may be possible in the case of blacklisted terms where it is very clear under the rules that the terms are unfair.

However, blacklists are a small element of most regimes. Most terms are not blacklisted, although there are generally long ‘grey-lists’ of terms that may be unfair, for example because they exclude consumer rights that would otherwise exist, add to consumer obligations or liabilities that would otherwise exist or allow traders to make unreasonable price increases.<sup>99</sup> There are *relatively* concrete benchmarks here, and AI may be able to use these at least to identify whether there *could be* unfairness. Going forward, this could be very useful in helping enforcement agencies to remove unfair terms proactively, and for traders themselves to improve compliance.<sup>100</sup> Of course we are nowhere near the point yet that preventive control is as effective as this so very large numbers of grey-listed potentially unfair terms are still in daily use. Presumably also, in many of these

96 So-called ‘floor’ clauses, see for example C-421/14 *Banco Primus SA v Jesús Gutiérrez García* ECLI:EU:C:2017:60.

97 For example CRA 2015, ss 31, 47 and 57.

98 Micklitz et al, n 58 above, 181.

99 For example, CRA 2015, Sched 2.

100 Micklitz et al, n 58 above, 181–183.

cases, traders consider the terms to be perfectly fair, so it is unlikely that they would generally voluntarily adopt systems that continually check for potential unfairness.

There needs to be scope for consumers to dispute the fairness of terms during the contract, and this is where some seriously complex analysis arises. First, the term may be excluded from a fairness assessment on various grounds involving highly complex and contestable concepts. For instance, assessment of the adequacy of the ‘price’ is excluded; yet there is enormous scope for debate as to precisely which (of the vast range of charges in use in B2C contracts) count as the ‘price’, in particular on the distinction between prices and default charges that may be very detrimental to consumers.<sup>101</sup> Second, the fairness test itself is an extremely open textured one, considering, for example, whether contrary to the requirement of good faith, the term causes a significant imbalance in the parties’ rights and obligations, to the detriment of the consumer.<sup>102</sup> This involves a complex interest balancing analysis (with an inevitable element of subjectivity) as to, for example, the extent to which the term deviates from what would be the legal default position, whether the consumer would have agreed to it if they could have negotiated it, how transparent the term was, what alternative terms (from other traders) might have been available to the consumer, the nature of the goods, services and digital content and, for good measure, all the other circumstances attending the conclusion of the contract.<sup>103</sup>

Again, as with conformity standards and remedies, *perhaps* the code can place numeric values on some of these criteria and reach a conclusion based on: “points in favour” versus “points against” fairness’. One might be able for example to ‘score’ transparency (use of plain language, print of a certain size etc) but how does one score ‘external’ factors such as whether the consumer would have agreed to the term if they could have negotiated it, whether there were alternative fairer terms in the market and all the other circumstances attending the conclusion of the contract?

As with conformity standards and remedies, this inability to analyse the fairness of terms would mean that, notwithstanding the time sensitive nature of such assessments, they may be delayed for significant periods in the case of long-term contracts.

### SCS IN PARTNERSHIP WITH HUMANS TO DELIVER TIME SENSITIVE COMPLEX RIGHTS

To the extent that SCs cannot perform the sort of sophisticated analysis just described in relation to remedies and unfair terms, one possible solution is to require that long-term relationships are broken down into various mini SCs, following each of which humans can carry out any complex analysis. However, this seems an unrealistic general option: whether because the long-term

101 Willett, n 30 above, 23–28.

102 For example CRA 2015, s 62(4) (UK), reflecting the Unfair Terms in Consumer Contracts Directive 93/13/EEC (UTCCD), Art 3(1).

103 CRA 2015, s 62(5), reflecting UTCCD, Art 4(1).

contract in question cannot in technical legal terms be divided up into severable workable chunks, is not cost effective, creates too much complexity or the trader is not willing to surrender control to a SC in this way.

The other solution is that if a single SC is used for a long-term relationship, then the parties must ensure that the automated SC process can be paused when it is signalled by the SC itself or by the consumer, that, for instance, there is a lack of conformity or an unfair terms problem. During this pause, there would be suspension of key obligations and rights so that undue consumer detriment cannot occur without due consideration of the legal position. So, the consumer's payment obligation would typically be suspended where this obligation is dependent, for example, on goods or digital content being of satisfactory quality or where it is dependent on the fairness of terms imposing charges or allowing for price variations. Trader enforcement rights would be suspended where these rights are dependent on the fairness of terms that deal with such issues.

During this period of pause, humans perform the sophisticated analysis and negotiation required. For instance, the trader and consumer debate the rules (with the help of lawyers where this is justified) and reach an agreement. A possible variation here is that the human intervention could involve an ADR body. This might be an efficient and attractive option, saving the parties the time and resources involved in negotiation. It could be agreed when the contract is first made that when the consumer raises a dispute over certain issues this is routed automatically to ADR by the SC. This would avoid the need for the parties to make formal applications for ADR. Alternatively, when consumers ask for a pause in the SC, the parties could then discuss whether to go to ADR.<sup>104</sup>

Whether the human element comes in this ADR form, or just involves the parties, the next step would be execution of what is required. This might involve simply restarting the initial SC, for example if the consumer's complaint about non-conformity or unfair terms is rejected. It might involve a new SC which provides, for example, for the cure that the consumer is entitled to, or which does not provide any more for the price variation that has been found to be unfair. It might involve 'killing' the original SC to facilitate a termination remedy.<sup>105</sup> It might involve killing a particular term that is unfair, and for example returning money already paid under it.

It is worth noting here that the Law Commission has said that SCs: 'should only be used in the B2C context if they incorporate mechanisms that facilitate ... rights [such as termination]. Traders would be well advised to design the B2C smart legal contract so that, where a consumer wishes to exercise their right to treat the contract as at an end, they have the practical means of doing so'.<sup>106</sup>

However, the Law Commission's analysis of this was essentially confined to the technical possibility of terminating a contract by 'killing' the SC.<sup>107</sup> Of course, this misses the difficulties discussed above as to how to apply the legal

104 More generally on ADR and SCs, see Andre Janssen, 'Smart Dispute Resolution in the Digital Age' (2021) 9 *International Journal on Consumer Law and Practice* 54.

105 Law Commission, *Smart Legal Contracts: Advice to Government* n 2 above, paras 5.128-5.134.

106 *ibid*, para 6.21.

107 *ibid*, paras 5.128-5.134.

concepts in the first place, in order to decide if the termination remedy (or any other remedy) is owed or how to decide on the fairness (and therefore non bindingness) of standard terms. Also, while it says traders 'would be well advised' to enable termination, it does not suggest any means of ensuring that remedies and unfair terms rights can be enforced nor anything along the lines of what we have suggested here involving the SC being paused for human intervention, or what we will now argue for ie, that such means should be legally mandated.

### **Tools, audience and enforcement for a duty requiring delivery of time sensitive complex rights**

It must surely be the *law* that mandates that long-term B2C contracts only use SC technology capable of being paused for human/ADR intervention, and then restarted to deliver on what has been agreed by the humans. Ideally this should be done by specific rules that provide precisely that this must happen. Currently there are no such rules. For now, one possibility is to rely on the general unfair practices' regime. Under this regime, misleading and aggressive practices are criminal offences, prosecutable principally by local trading standards authorities; and enforcement orders can be sought to prevent their continued use.<sup>108</sup> Consumers subject to such practices have private law remedies: unwinding the contract, price reduction and damages.<sup>109</sup> The aggressive practices concept could be most useful. A practice is aggressive if it: 'significantly impairs or is likely significantly to impair the average consumer's freedom of choice or conduct ... through ... harassment, coercion or undue influence; and it thereby causes or is likely to cause him to take a transactional decision he would not have taken otherwise'.<sup>110</sup>

In determining whether there is harassment, coercion or undue influence, 'account' is to be taken of a variety of factors (such as timing or location),<sup>111</sup> including: 'any onerous or disproportionate non-contractual barrier imposed by the trader where a consumer wishes to exercise rights under the contract, including rights to terminate a contract or to switch to another product or another trader'.<sup>112</sup>

It can be argued that it is an aggressive practice to use long-term SCs that are not programmed to pause and then restart after human intervention in the way described above, because this represents a barrier to consumers exercising their rights under the contract. In long-term contracts such failure could, as we have shown above, cause highly detrimental delays to exercise of various remedies, and to being able to question the fairness of standard terms.

108 Consumer Protection from Unfair Trading Regulations 2008 (CPUTR 2008); Enterprise Act 2002, Part 8; across the EU there are various forms of public enforcement against unfair practices based on the Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market (UCPD), Art 11.

109 CPUTR 2008, Part 4A.

110 CPUTR 2008, reg 7(1).

111 CPUTR 2008, reg 7(2)(a)-(c).

112 CPUTR 2008, reg 7(2)(d).



In response to this suggested analysis, one might argue first that erecting a barrier to enforcement cannot itself fully equate to one of the core requirements of either harassment, coercion or undue influence, rather that some further aggressive behaviour by the trader is required. However, this is not expressly indicated, and it is surely at least arguable that erecting a barrier to enforcement can quite plausibly be viewed as a form of coercive behaviour. A further argument might be that the SC's failure to pause is not a 'non-contractual barrier' (as stated in the criteria), but a contractual one. However, to counter this, it is arguable that 'non-contractual' is intended to cover anything not as such provided for as an obligation of the contract; and that the failure to design the SC to pause at key points is not something provided for in the contract in this sense, but rather a practice related more broadly to the contract. On this basis it would be covered by the 'non-contractual' barrier criterion. Yet even if this is so, it might be said that this does not (as is required) actually have an impact on consumer decision making; rather it simply delays consumer attempts to enforce their rights – consumer decision making not, as such, having a causal role to play in this delay.

However, on a broader understanding, it is surely arguable that the consumer is making a decision based on the failure of the SC to pause; the consumer *could* respond by immediately starting to exercise self-help remedies for example withholding payments, or by going straight to ADR or to a court and claiming for breach of contract or for a standard term to be adjudged to be unfair. In most cases they will probably not do this, rather they will decide to give up on their dispute. This probably counts as a transactional decision for the purposes of the public enforcement regime;<sup>113</sup> and given that a long-term relationship is involved, this may also often mean continuing to make payments due under the contract (a decision to make such payments or a decision to actually make a new contract being what is required for a private law remedy).<sup>114</sup>

There is certainly the possibility to address this, and possibly other emerging SC issues, via broad legal concepts like the unfair practices' rules, and after all a key rationale for such concepts is their flexibility and future-proof capacity to deal with emerging business models and technological developments (such as SCs).<sup>115</sup> However, in the longer term it is obviously better to develop rules more nuanced to the SC context – not least because of some of the doubts discussed above as to the scope of unfair practices concepts.

It is interesting to ask what this discussion adds to scholarship on the 'audience' of law. Recent work has highlighted a shift towards law becoming increasingly focussed on designers of new technologies, and perhaps operating less as a prescription for the traders or a notice of entitlement for consumers.<sup>116</sup> As indicated, the above unfair practices rules can be enforced after the fact in private law by consumers, and by bodies such as the Competition and Markets

113 Jason Freeman, 'What is a Transactional Decision: Case Note on *Care UK Health and Social Holdings*' (2022) 11 *Journal of European Consumer and Market Law* 107.

114 CPUR 2008, reg 27A(2).

115 Mateja Durovic, *European Law on Unfair Commercial Practices and Contract Law* (Oxford: Hart Publishing, 2016) 121.

116 See Diver, n 7 above.

Authority (CMA) or trading standards authorities. In the case of private law action, the consumer has a claim against a trader (anyone acting for business purposes), but only where the practice leads them to make a contract with or a payment to that trader,<sup>117</sup> which clearly excludes designers who sit behind the supplier in the contractual chain. Public enforcement action can be taken against any trader whose acts, omissions or course of conduct is ‘directly connected’ with sale or supply to consumers.<sup>118</sup> Clearly this covers any business using SCs in their relations with consumers. It is more questionable whether the activities of businesses that design SCs (for use by those that supply them to consumers) are ‘directly connected’ to the ultimate supply.

As the law stands, assuming unfair practices rules can assist at all with our SC problem, the ‘audience’ certainly includes those who supply goods, services and digital content to consumers (this audience may be subject to public enforcement and private law remedies); and consumers (entitled to private law remedies against suppliers). Now, perhaps contrary to the recent work on law’s changing audience, it is submitted that this should continue, and also be part of any new regime specifically nuanced to SCs. Private and public enforcement against front line suppliers is central to consumer law tradition and patterns and provides an easily identifiable target for consumers and regulators.

However, more in line with the changing audience scholarship, it is surely arguable that designers should also bear significant responsibility. Designs that are not programmed to pause and then restart after human intervention in the way described could, as demonstrated above, cause very significant detriment in relation to a broad range of issues (remedies for non-conformity, unfair terms) in a wide range of long-term contracts for goods, services and digital content.

Ensuring regulatory capacity to attack this at source (ie the design stage) could be the most efficient approach. This could be done either by clarifying that the SC design activities are ‘directly connected’ to the ultimate supply, and therefore can count as an unfair (aggressive) practice for public enforcement purposes (see above) or, under new specially focussed SC rules, public enforcers could be given explicit rights to act against designers. In private law the most obvious remedy for consumers would be damages to compensate for the losses suffered because the SC prevented them getting remedies for non-conformity or allowed an unfair term to be enforced. As we saw above, consumers do not have rights under the unfair practices regime to make such a claim against designers who do not supply to them directly, yet this could be an important remedy, for instance in case their front-line supplier is insolvent.<sup>119</sup> So it could be important to ‘extend law’s audience’ either by amending the unfair practices regime to provide that damages can be claimed against designers of this type, or (better) under a dedicated SC regime, to provide for a damages claim by a consumer where losses are suffered due to failure to design or to use SC technology capable of being paused for human/ADR intervention.

---

117 CPU TR 2008, reg 27(A)(2).

118 CPU TR 2008, regs 2 and 3.

119 A common law tort claim for negligence is not possible for such pure economic losses, see *Murphy v Brentwood DC* [1991] AC 398.

In the case of both public and private enforcement, there could of course be problems due to the often pseudonymous nature of cyberspace. However, there are further enforcement mechanisms that can, at least partially, try to address this issue. First, a trader commits a criminal offence of ‘misleading omission’ if they do not include in their invitations to purchase ‘material information’, which includes information as to their identity.<sup>120</sup> This could be a response where traders refuse to reveal their identity either to public enforcement bodies or to consumers making private law claims. Second, in public enforcement, enforcement officers can request documents (including documents on identity) and failure to comply intentionally or without reasonable cause is an offence.

Finally, due to their automated nature, SCs are more likely than traditional contracts to be cross-border in nature, this raising the challenge of how to have effective cross-border enforcement of the rules suggested above here. If the UK were to adopt these rules and other countries followed, then of course this simplifies matters. Assuming other countries do not have such rules, UK public enforcement bodies (such as CMA or trading standards) can of course take the steps explained above against foreign traders operating in the UK, although of course there could be practical difficulties enforcing court orders against such traders; and these problems are best reduced by establishing good cooperation with regulatory bodies in other countries.

As to private law enforcement, UK consumers should be able to rely on any UK SC legal regime in dealings with traders from EEA countries where, as will very often be the case, the non-UK trader in question promoted themselves to the consumer in the UK.<sup>121</sup> In such a case, where a contract applies the law of a non-EEA country, despite this choice the UK law on conformity of goods and unfair terms applies.<sup>122</sup> This approach could be extended to ensure applicability of the above proposed UK rules on pausing SCs for human intervention, and for this to apply to B2C contracts for any subject matter.

It should be clear that we do not underestimate the enormous practical problems of either public or private law enforcement in the pseudonymous online world.<sup>123</sup> Still, it is important to note that cross-border enforcement, especially of what happens in the digital world, remains probably the biggest challenge for the consumer law in general. This cannot however mean that we stop detecting new risks, finding legal solutions, and trying to find the best enforcement mechanisms.

### Value tensions and intervention risks

The arguments made here (for rules requiring long-term B2C contracts only to use SC technology capable of being paused for human/ADR intervention)

120 CPUTR 2008, regs 10, 6(1)(b) and 4(b).

121 CRA 2015, s 74(2); Regulation (EC) No 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations, reg 1(b).

122 CRA 2015, s 32(1) and 74(1).

123 On these challenges in the cybercrime context, see Tyler Moore, Richard Clayton and Ross Anderson, ‘The Economics of Online Crime’ (2009) 23 *Journal of Economic Perspectives* 3.

are of course grounded in protecting the consumer protection values and rights set out in the third part above. In consumer law scholarship, this can be seen as prioritising protective ‘need-oriented’ values over values of consumer self-reliance/business self-interest.<sup>124</sup> Where does this map onto debates and tensions more familiar in law and technology literature? Key here is the tension highlighted by Karen Yeung. On the one hand there is a ‘code as law’ approach, which seems broadly in congruence with a consumer self-reliance/business self-interest vision in which the technical code is given maximum freedom to operate and consumers must often exercise self-reliance to protect their interests against risks of consumer detriment that come with the technology. Supporters of this approach presumably would reject or view very suspiciously the legal intervention proposed here. Yeung points on the other hand to a ‘code of law’ approach, which is broadly in line with what is argued for here; whereby the law and its underpinning (here, protective) values should be given priority, and the code restricted to the extent that it conflicts with these values.

One argument in favour of the more libertarian ‘code as law’ approach, and against the protective, ‘code of law’ interventions proposed here, could be that the human intervention needs to be facilitated by increasing the number of lines of code, and this in turn may increase the risk of errors and bugs.<sup>125</sup> This could make use of SCs less attractive. This is a particular concern amongst blockchain purists who wish to keep as much as possible on chain and to have minimal human intervention. However, we should not lose sight of the fact that *failure* to mandate human intervention brings the risks of very substantial consumer detriment outlined above. So, arguably the key is to mandate human intervention, but to reduce the risks of errors and bugs: (i) by legal policy makers being as precise as possible as to the circumstances when human intervention should start and finish, and (ii) by executing this via the most cutting edge, effective and secure technological means.

## FUTURE RESEARCH AGENDA; OPPORTUNITIES AND CHALLENGES IN REGULATING AUTOMATION

Beyond the case study here on time sensitive rights, consideration must be given to other distinctive ways that consumer rights must operate, to reflect underpinning protection values and whether SCs or other forms of automation help or hinder the rights to operate in this way. Either way the next step is to consider appropriate legal responses: whether rules that help automated technology improve on delivery of consumer rights or rules that restrict such technology and insist on human intervention. Any such rules should surely usually be carefully nuanced to the SC context, given how distinctive the issues are likely to be (as shown in this paper). This has been supported by recent work done for the EU in which Schrevel asked whether legal regulation of SCs might take place under the ‘conformity assessment procedure’ in the new EU AI regime

124 Willett, n 30 above.

125 Low and Mik, n 17 above, 173.

but argued that SCs should be excluded from AI Act as it might be too broad in its coverage, placing too many restrictions on use of SCs.<sup>126</sup>

There has already been work done in relation to the transparency of contract terms in SCs.<sup>127</sup> There has also been some work (albeit not grounded as such in underpinning protection values) on how SCs may affect cross-border enforcement of consumer rights, and how they may affect privacy rights.<sup>128</sup> Going forward it will also be important to consider the effect of SCs and other forms of automation on particularly vulnerable consumers. As indicated above, there may be some consumers even more vulnerable than is typical for consumers generally: based on cognitive limitations (for example affecting the very young) or on poverty or social exclusion.<sup>129</sup> It is important to consider whether SCs can offer extra help to such consumers; and whether there are instances in which SCs may impede proper legal protection of such consumers. Based on this, appropriate legal responses can be designed.

The far-sighted recent work by Micklitz et al has shown just how much might soon be possible in terms of consumer protection agencies using AI to monitor and enforce rules in the digital environment generally.<sup>130</sup> If we were to apply this to SCs it might include ‘cradle to grave’ regulation of SCs from their initial design, through monitoring how they are being used, intervening directly (by pausing, killing etc certain SCs) to protect individual consumers from rule breaches, to proactively ordering general market practices to change and imposing fines or other penalties.

The expertise of agencies probably means that they should not only enforce rules, but also play a part in their design. There may also be a role for SCs themselves to be designed in a ‘SC factory’ and then distributed and their use/compliance with monitored, possibly along with various regulatory tools such as safe harbours, sandboxes etc.<sup>131</sup>

A further question is whether in the long term, regulation of SCs and other forms of automation should be done by a new specialist dedicated agency or as part of a general agency such as the UK CMA. Schrepel has argued that a specialist agency for SCs would be unfair overkill; potentially preventing SCs even getting onto the market in the first place, and requiring huge expense.<sup>132</sup> Of course whether an agency is specialist or not, it need not routinely prevent entry to a market. It can take steps short of this, such as requiring amendments to how the SC is used; similar to what an agency like the CMA currently does with standard terms.<sup>133</sup> However, if the design and operation of the SC or other form of automation would cause serious consumer detriment (for example in depriving consumers of the ability to enforce rights at the time they need to be enforced), then what is wrong with excluding this from the market, as is

126 Schrepel, n 12 above, 43–44.

127 Durovic and Janssen, n 81 above.

128 Schrepel, n 12 above, 40.

129 Eleni Kaprou, ‘The current legal definition of vulnerable consumers in the UCPD: benefits and limitations of a focus on personal attributes’ in Riefa and Saintier, n 57 above.

130 Micklitz et al, n 58 above.

131 Schrepel, n 12 above, 46.

132 *ibid*, 44.

133 See CRA 2015, s 70 and Sched 3.

done with dangerous financial products?<sup>134</sup> As to expense, of course this is a factor and we must wait and see whether the scale of consumer detriment is such as to justify whatever cost there is. A possibility, if specialism is needed, but expense is a problem, is to develop enforcement work as a branch of an existing agency. Possibly that could be within the recently established Digital Markets Unit within the CMA which is particularly designed to deal with the legal challenges brought by digitalisation of the market.<sup>135</sup>

## CONCLUSION

SCs have the potential to disrupt traditional regulation of contractual relationships, transferring the power to perform and enforce from contractors to the technology. Their real impact is still to be seen in consumer transactions in particular, but the potential problems and legal solutions should be considered in good time, in order to be able to respond if and when necessary. It is true that the entire story with SCs may turn out to be less of success than had initially been thought, perhaps even a total failure, as was the case with some other new technologies, but as their application is still being tested and they are increasingly being used in practice, there is a need to be ready with an adequate regulatory response in consumer law. Consumers must remain protected from the dangers that the SC technology could bring: in particular the automatic and self-enforcing nature of SCs which could make it much harder, or even impossible, to rely on vital consumer rights at the precise time when they need to be relied on.

Accordingly, this paper has provided a framework which at its core seeks to ensure that consumers as weaker parties remain protected even in case of SCs. The starting point was the well accepted idea of consumer law being based on values aiming to protect consumers as weaker parties in their relationships with traders and this was built on using various new arguments. It was shown that to reflect underpinning protection values, some such rights must operate in particular ways. This includes rights on information and contract cancellation, conformity standards, remedies, and unfair terms: 'time sensitive' rights that must be available at certain stages of the relationship.

SCs might be able to support this time sensitivity in the case of information and cooling off rights, which involve simple analysis, but will struggle to perform the complex analysis involved in open textured rules on remedies and unfair terms. For these rights to be exercised at the right time in long-term relations, the law should enable the necessary complex reasoning to be carried out by humans. This will often need to be done by pausing the SC for human intervention, simultaneously pausing appropriate consumer obligations such as payment, and appropriate trader rights such as enforcement rights, and then

134 See, for example, the rules capping high-cost short term credit in the Consumer Credit Sourcebook (2023), Conc 5A; Andrea Fejős, 'Achieving safety and affordability in the UK payday loans market' (2015) 38 *Journal of Consumer Policy* 181.

135 'Digital Markets Unit' (Competition and Markets Authority, 7 April 2021) at <https://www.gov.uk/government/collections/digital-markets-unit> (last accessed 11 May 2023).

re-starting the SC to deliver what has been agreed. This must be legally mandated: ideally with specific new rules, but possibly in the short term via existing unfair practices rules. We discussed also who such rules should be aimed at (the ‘audience’), various enforcement challenges, and the value tensions and risks involved.

Beyond these examples of time sensitive rights, the paper discussed more generally what research, law-making and enforcement should look like in consumer law in relation to increasing contractual automation: Research should focus on identifying other legal responses that may be needed to ensure this works in support of and not against consumer protection values. Consumer protection agencies must have a key role in enforcement and perhaps rule making and should make appropriate use of emerging technology, especially AI.

This framework for consumer law also contains insights that can contribute to the scholarship on general contract law and how traditional contract law is being affected by the development of new technologies. As indicated above, there is a developing body of work on general contract law looking, for example, at the role of SCs in contractual formation and performance, the effect of SCs on remedies such as rectification, termination and damages, and on vitiating factors. However, this work has not considered some key issues raised here. Central to our framework is the idea that certain rights in B2C contracts have characteristics, for example time-sensitivity, that may cause problems in long-term contracts performed by robotic, immutable SCs. A key question then is whether the same may sometimes be true in B2B contracts. It surely *is* the case, for example, in relation to the right to terminate a long-term contract, there being an obvious interest in escaping what may be years of expensive future commitments. Could there be a need for B2B contract law to require that SCs can be paused where serious breaches are alleged, allowing the parties to analyse whether the breach deprives the other party of substantially the whole benefit of the contract<sup>136</sup> (a complex analysis the SC will typically not be capable of)?

Further, our framework for consumer law can contribute to the broader scholarship on law and technology theory. One particular theme is the tension between what Brownsword calls ‘regulatory instrumentalism’, where the priority in legal policy is responding to digital disruption in ways aiming to achieve broad regulatory goals; and ‘coherentism’, which is more concerned with responding in ways that maintain the coherence of existing doctrine or values.<sup>137</sup> Our framework for SCs seems to straddle these ideas: it is driven by the regulatory goal of consumer protection values, but these values, and the rules reflecting them, have been with us for many decades now, so aiming to preserve them can also be viewed as a form of coherentism.

Then within the regulatory instrumentalist approach, Brownsword argues for choices to be made about the balance between furthering technology and potentially competing values such as solidarity, human agency etc.<sup>138</sup> Certainly to a point, the arguments presented here are in the latter camp. This paper does not accept that SC technology must always be allowed to be used to the full.

136 *Hong Kong Fir Shipping Co Ltd v Kawasaki Kisen Kaisha Ltd* [1962] 2 QB 26.

137 Brownsword, n 11 above, ch 11.

138 *ibid.*

Perhaps the technology offers great efficiencies, but perhaps it can cause great unfairness: what we might call ‘smart efficient unfairness’. Where SCs or any other technology risks trampling on underpinning consumer protection values (or other social solidarity values), the law must be prepared to act. Of course, as we have seen here, the technology may sometimes be able to marry potentially competing values: being efficient at enforcing certain rights reflecting protective values. This should be embraced. Indeed, even when the instinct and capacity of the technology (SC or otherwise) might be to do what is efficient, but not fair, the response need not be to exclude the technology altogether but to embrace its efficiency potential while restricting and channelling its use so that it works in partnership with humans to deliver on protective values.