

“DISRUPTIVE TECHNOLOGY - DISRUPTED LAW? HOW THE DIGITAL REVOLUTION AFFECTS (CONTRACT) LAW”

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1. INTRODUCTION

Much has been said about the effect of disruptive technology on business. In this paper, an attempt is made to consider, in general terms, the implication of “disruptive technology” for the law, particularly contract law.¹ The particular disruptive technology focused on in this paper is more of a “disruptive development”: the so-called digital revolution, and the new business opportunities and production methods which have emerged from the increasing digitalisation of so many activities, not least by utilising the potential of the internet combined with smart-technology. These developments undoubtedly pose interesting challenges for contract law, particularly established paradigms forming the basis of many legal rules. This analysis begins by exploring the notion of disruptive technology, before considering the general challenges for, and possible responses by, the law to new developments in technology or business practice. It will then highlight the main novelties of the digital revolution and turn to some of the specific legal issues which the digital revolution seems to create and consider potential legal responses.

The key argument of this contribution is that there is a danger of rushing towards introducing new legal rules in response to new developments without rigorous consideration of the specific issues for both businesses and consumers which are created by things such as the digital revolution. Once these issues have been fully scoped, any legal responses need to be calibrated carefully so as to deal with these issues in a focused manner – there is a risk that, in the rush to provide a legal response, more problems might be created than solved.

2. DISRUPTIVE TECHNOLOGY

Before considering the impact of the digital revolution on contract law, a few words should be said about the meaning of “disruptive technology”, a term used frequently in this context. This notion has gained prominence in the writings of Clayton Christensen,² and focuses on the way technological developments can affect the way existing business models operate. In brief, Christensen distinguishes between two types of technological evolution: first, there is “sustaining technology”, by which he means technology which is evolving gradually or simply improving established technologies, particularly their performance. In contrast, “disruptive technology” is a new type of technology, which, when first introduced, might be less reliable than established technologies, but will become reliable rapidly. Its possible applications are uncertain when it first appears, but once it has gained a certain critical mass of recognition, it can significantly affect the way things are done. At that point, the disruptive effect of such new technology materialises, and established ways of conducting business are threatened by new business models which take advantage of the new technology. In Katyal’s words:

‘Disruptive innovation goes beyond improving existing products; it seeks to tap unforeseen markets, create products to solve problems consumers don’t know they have, and ultimately to change the face of the industry.’³

Without doubt, the creation of the internet and the rise of mobile smart-technology have had a disruptive effect. Take e-commerce as an example: initially, there were cautious attempts by businesses to utilise the internet as an alternative trading mechanism to physical stores, but soon, new business emerged on-line to compete with established bricks-and-mortar traders. Over time, the disruptive effect has become apparent, as many famous brands have disappeared altogether or moved from a significant physical presence to an on-line presence only.⁴ Since then, the appeal of the internet and digital technology has broadened, and ever-new opportunities for developing new business models utilising digital technology are emerging. This raises interesting questions for various branches of the law: be it the protection of intellectual property rights in digital content, the protection of

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¹ Many of the other contributions to this collection will provide a more detailed discussion of specific issues.

² Seminally, C.M. CHRISTENSEN, *The Innovator’s Dilemma – When New Technology Causes Great Firms to fail*, Harvard Business Review Press, Boston, 1997.

³ N. KATYAL, ‘Disruptive Technologies and the Law’ (2014) 102 *Georgetown Law Journal* 1685.

⁴ In the United Kingdom, several famous names have disappeared from the High Street, including Woolworths, Comet, Habitat and MFI. See SKY NEWS, *What’s Disappeared From The UK High Street?*, 25 April 2016, <http://news.sky.com/story/1684696/whats-disappeared-from-the-uk-high-street> [accessed 19 May 2016].

personal data, or consumer rights when buying goods, services or digital content online. Many of these issues are being debated by legal scholars and policy-makers alike, and there is an ongoing debate about what sort of legal response to the digital revolution might be required. This paper is an attempt to chart some of the main questions and issues which will need to be addressed by lawmakers.

3. LAW, TECHNOLOGICAL DEVELOPMENT AND DISRUPTIVE EFFECTS

It is a trite observation that technology is continuously evolving – indeed, continuous innovation is supported by government policies at all levels. The key implications of this for the design of legal rules are generally recognised: lawmakers need to ensure that legal rules are adaptable to new circumstances, whether that be new products or new ways of doing business. This can be achieved by putting into place legal rules which have an inherent degree of flexibility and can therefore be deployed in circumstances which might not have been foreseen at the time when these rules were adopted.⁵ One example of this is the EU's Unfair Commercial Practices Directive (2005/29/EU), which combines outlawing some established unfair commercial practices (those listed in the Annex to the Directive), with flexible general prohibitions which set general criteria against which the fairness of commercial practices can be assessed.⁶ The use of such open-textured prohibitions provides a high-degree of "future-proofing".

However, whilst a degree of future-proofing in designing legal rules is possible, there will come a point when developments have got to the stage where existing legal rules reach the limits of their adaptability to new circumstances, and at that stage, it will become necessary to consider changes to existing legal rules. At this juncture, disruptive technology therefore not only disrupts established business models, but also existing legal rules. As Copps puts it,

'Technology, it's almost trite to say, is developing at a blistering pace and forces us to confront new issues – to think anew and to act anew. How do the legal and regulatory frameworks apply and keep pace? How do regulators make good decisions in this fast-moving, paradigm-shifting environment?'

The pace of technological development creates a serious risk of an overly hasty legal response. However, even in the face of rapidly-changing circumstances, care needs to be taken in working out what an appropriate legal response might be. There is a danger that the fear of a legal vacuum will prompt a rush towards putting into place legal rules which might seem to tackle new issues created by technological development but which soon turn out to be unsuitable or entirely unworkable.

So the challenge for the law and regulation to keep up with technological developments is a serious one. Bennet Moses summarises her careful analysis of this issue thus

'Our metaphors of law struggling to keep pace with technology reflect an important truth: as technology changes, legal dilemmas arise. As technological change becomes increasingly rapid, the need for a methodical response to these problems becomes increasingly urgent. We need to closely analyse the roles played by different legal institutions and the methodologies they adopt in easing the law's transition to the future.'

However, in all of this, it is important not to lose sight of the fact that not only might new rules be required to deal with new issues which arise from technological development – one also needs to be aware that existing rules and regulatory procedures could impede the adoption of technological advances by businesses and consumers alike, and so sometimes, the challenge is not only to make sure that legal rules appropriate to new technological developments are in place, but also that established rules and procedures are revised or removed so as not to stifle the exploitation of the potential offered by technological developments. For example, some time ago, Copps identified as one challenge the need to create a legal 'landscape which really fosters innovation'⁹ whilst not losing sight of how consumers can benefit. This might require some courage in developing the law into new territory rather 'than spending all of our time trying to shoe-horn new technologies into old regulatory categories'.¹⁰ In other words, once technological developments have become disruptive, innovation in legal rules needs to follow. That entails a recognition that legal rules which might have served business and consumers well in the past, even

⁵ C. TWIGG-FLESNER, 'Innovation and EU Consumer Law' (2005) 28 *Journal of Consumer Policy* 409.

⁶ See e.g., H.W. MICKLITZ, 'The General Clause on Unfair Practices' in G. HOWELLS, H. W. MICKLITZ and T. WILHELMSSON, *European Fair Trading Law*, Ashgate, Aldershot, 2006.

⁷ M.J. COPPS, 'Disruptive Technology...Disruptive Regulation' [2005] *Michigan State Law Review* 309

⁸ L. BENNETT MOSES, 'Recurring Dilemmas: The Law's Race to Keep up with Technological Change' [2007] *University of Illinois Journal of Law, Technology and Policy* 239, 285.

⁹ COPPS, above n.XX, 309.

¹⁰ COPPS, above n.XX, 312.

in the light of incremental technological advances, cannot be unduly strained to cover issues resulting from disruptive technological developments.

The disruptive effect of a particular development can be gauged by considering whether a specific issue can be dealt with by applying existing legal rules to the particular questions which have been identified in respect of that issue. Thus, if it is possible to maintain existing rules but to clarify how these should be applied in the context of a new development, then the disruptive effect to the law is minimal – indeed, such an approach might reflect the robust design of existing legal rules and the scope of applying these to new circumstances.¹¹

However, this may not always be sufficient to tackle new issues sufficiently. The next option would therefore be to consider whether minor reforms such as clarifications or modifications of key definitions, modifications to the wording of existing legal rules and extension of provisions determining the scope of existing legal rules would be sufficient to deal with a specific new issue. A principle commonly invoked in this context is “functional equivalence”, i.e., to identify the key features of the developments governed by existing rules and to set out how these would be transferred into the context of any new development.¹² As long as such minor changes are enough, there is still no real disruptive effect for the law – even if there might already be a strong disruptive effect for business.

But if this still does not manage to ensure that the necessary and appropriate legal rules are in place, then it will be necessary to consider more far-reaching reforms. At this point, the law itself will start to feel a disruptive effect. Thus, once it has become clear that one cannot simply tweak existing rules to make them fit new developments, thought will have to be given to how new rules should be designed. This requires a careful evaluation of the nature of this new development and the particular legal issues it raises, before a consideration of what sort of approach would provide suitable legal rules. It may be possible to develop new legal rules by analogy with existing legal rules – as discussed below, new rules for the supply of digital content might follow comparable rules applicable to the sale of goods but be modified and supplemented as is necessary to reflect the distinct nature of this type of transaction. This would take the law into new territory but could still be regarded as a progressive development, although in some legal systems, such an approach might start to feel disruptive.

However, if even such an approach is not possible and a complete new set of legal rules is required, perhaps reflecting new principles or doctrines, then there is a truly disruptive effect to the law. At this point, the earlier warning about not rushing towards adopting legal rules, even in the face of rapid developments in technology and/or business models, needs to be heeded. It is in the very nature of disruptive developments that things will happen at a rapid pace but issues might be felt acutely at one point, only to disappear and be replaced by other issues which have a more lasting effect. The latter types of issue need to be the focus for new legislation, once there is some clarity with regard to the specific matters which require legal rules and time has been taken to analyse what the appropriate legal responses should be. At that point, swift proposals for the introduction of new legal rules should be made and considered. However, if there is a rush towards new regulation, then this might not only result in rules which turn out to be unsuitable, but it could also have the detrimental effect of stifling innovation which utilises disruptive technology in developing new business models or applications. So a trade-off is needed between avoiding the law lagging too far behind and allowing disruptive effects to settle before updating the law.

4. DESIGNING LEGAL RULES FOR DISRUPTED LAW

In the previous section, it was suggested that a disruptive technological development such as the digital revolution also has a disruptive effect on the law once it is no longer possible to apply existing legal rules to new circumstances, or to modify the scope of existing legal rules to ensure that these address new issues brought about by technological changes. Once that point has arrived, it will be necessary to identify what the particular features are that require new legal rules, and then to determine how to draft new legal rules which will deal with these. However, if the disruptive effect is particularly severe, then it will be necessary to do more than merely draft new legal rules dealing with a specific problem that has been identified. It may also be necessary, even essential, to consider whether the introduction of new legal rules also requires a reconsideration of fundamental principles underpinning existing law. For instance, contract law is underpinned by the notion of freedom of contract and the exercise of private autonomy, and the many detailed doctrines and principles reflect this notion, whether by enhancing it or imposing limitations to it. However, as will be seen below, one consequence of the digital revolution is the rise of automated contracting where an individual interacts with a computer, or even two computers interacting with each other, to arrange a transaction. Does the fact that there is no mutual exercise of

¹¹ The European Commission updated its guidance document on the application of the Unfair Commercial Practices Directive (2005/29/EU) to explain how the existing rules operate in the digital environment, e.g., with regard to on-line platforms. See EUROPEAN COMMISSION, *Guidance on the Implementation/Application of Directive 2005/29/EU on Unfair Commercial Practices*, SWD (2016) 163 final.

¹² For example, the United Nations Convention on the Use of Electronic Communications in International Contracts 2005 deploys this principle in clarifying how rules in existing conventions such as the Convention on the International Sale of Goods 1980 (CISG) would operate in the electronic environment.

private autonomy mean that no contract has been concluded? Is it necessary to change the basic principle for treating a binding obligation as a contract to accommodate automation? Or should such situation not be treated as involving contracts at all, with new principles and rules having to be developed to provide a rational and coherent legal framework for this situation? This is, of course, a simple example, and few people will seriously suggest that this is anything but a contract,¹³ but it does nevertheless illustrate the point that once law has been disrupted as a result of technological developments, it is important to consider how deep that disruptive effect is felt.

When it comes to developing concrete legal rules to respond to a new development, it will also need to be considered whether these should be focused narrowly to address the specific issue, or whether it is possible to develop legal provisions with a broader scope which could extend to as yet unforeseen circumstances. This is a familiar question – is it preferable to respond with specific and precise rules, or is it better to lay down broad standards which require concretisation when applied to particular circumstances?¹⁴ This will depend on factors such as whether the issues which have been identified are sufficiently contained to be amenable to clear rules, whether standards should be set to guide businesses in utilising disruptive technology in the future, whether there is identified consumer detriment that needs to be addressed, and so on. There are other matters, but the ones mentioned here are enough to underline the importance of being thorough and prompt, but not rushed, when developing a legal response to the disruptive effects felt by technological developments.

The ideas from this and the previous section need to be explored in the context of the particular challenges of the digital revolution, so in the following section, the disruptive effects of the digital revolution and the way in which these might also disrupt current law are explored.

5. THE DISRUPTIVE EFFECT OF THE DIGITAL REVOLUTION

This section outlines three key areas in which the digital revolution is likely to have a disruptive effect both on established business models and the associated legal rules. As noted previously, the disruptive element of the digital revolution is brought about by a combination of the wide availability of fast internet connections, the popularity of smartphone technology and the consequent advances in both digital content and hardware. These developments make it possible to utilise the digital environment and digital content to do things which previously had to be done by different means.

Initially, the digital revolution largely opened up the possibility to use the internet for on-line trading to complement the way of shopping for goods in physical stores, soon followed by individuals utilising the internet to offer goods or services to others, and digital mechanisms (“platforms”) to facilitate this have evolved. However, more recently, new types of platforms have emerged which allow individuals to “share” some of their assets with others. Thus, individuals can now let-out their spare bed-room to visitors or arrange car-shares. There are many opportunities for bringing together people (whether private individuals or businesses) who have an underused asset with others who might wish to use that asset, and mobile technology has made it much easier to do this. This phenomenon usually referred to as the “sharing economy”. Online platforms at the heart of this development: a platform is at once both an intermediary bringing together recipients and suppliers of goods, services and digital content, and a controller over all the transactions concluded on the platform, stipulating the rules according to which products can be offered by a supplier and often providing supporting services such as payment processing.

A second development of the digital revolution is the increased technical sophistication of many appliances which were previously predominantly mechanical or based on basic electronic technology. Thus, most household devices are equipped with digital technology which operates the mechanical elements (whether a refrigerator, washing machine or central heating system). In addition, many such devices can now be connected to the internet through Wi-Fi technology, which has made it possible to control multiple devices from one control station (such as a smartphone). In turn, these devices can collect data about performance and share this data with the user, the manufacturer or a third-party. Also, in a commercial setting, the increasing automation of warehousing facilities combined with the internet allows devices to identify when stocks are running low and to order new stock automatically. The possibility for devices to share data online and for this data to be processed and utilised is referred to as the “internet of things”.¹⁵

¹³ Cf. R. WEBER, ‘Contractual Duties and Allocation of Liability in Automated Digital Contracts’ in R. SCHULZE and D. STAUDENMEYER (eds), *Digital Revolution – Challenges for Contract Law* Nomos, Baden-Baden, 2016.

¹⁴ For a classic discussion of this topic, see L. KAPLOW, ‘Rules versus Standards: an Economic Analysis’ (1992) 42 *Duke Law Journal* 557.

¹⁵ For a useful exploration of the potential of the internet of things, see S. GREENGARD, *The Internet of Things*, MIT Press, Cambridge (MA), 2015.

A third significant development is the combination of a mechanical process with digital design technology to create a new form of manufacturing technology: additive layer manufacturing, more popularly known as 3D-printing.¹⁶ Using this technology, it is now possible to manufacture goods by consecutively “printing” very thin layers of an item to manufacture a finished physical item. There are a number of different ways in which additive layer manufacturing works, but there are common features: the design for the item to be 3D-printed is supplied in a computer file created by using appropriate computer-aided design (CAD) software. The file is then sent to a physical device, the 3D-printer, which manufactures a physical item based on the CAD-file. This technology offers a number of new practical applications: it allows for customisation of products to the requirements of each buyer, items can be made to order (especially when there would not be sufficient demand for a large production run), and items can be ordered from anywhere in the world but created as close as possible to the location of the buyer (including the buyer’s own 3D-printer). Moreover, design files can be traded separately from the physical item: some websites allow a designer (whether a professional or a private individual) to create a design and upload this, thereby allowing others to buy a copy of the design or to order a printed version of the design from that website. Although this development has a huge potential for changing the way goods are made and customised to an individual buyer’s preference, it also raises a host of legal issues. Literature on the legal implications of 3D-printing has initially focused on the intellectual property concerns,¹⁷ but this was soon followed by discussion of the product liability implications if 3D-printed goods cause harm,¹⁸ and wider debates about the private law implications.¹⁹

This brief account of three major developments brought about by the digital revolution illustrate the disruptive effect on existing business models and paradigm contracts. In turn, these developments also create questions as to what sort of legal response is needed to ensure that they are recognised in law and also that legal rules such as those on consumer protection developed in the context of contracts for the supply of goods and services between a trader and a consumer are not sidestepped by such new business models. The following section will consider a number of areas where existing legal rules may need to be revisited, or where a new legal response might be needed.

6. DISRUPTED LAW?

The various developments outlined above have given rise to a number of recurring questions about possible legal responses. This section will set out a number of particular legal issues which have been raised and consider possible solutions. As suggested in section 3, above, some aspects might seem less disruptive than others, and their degree of disruptiveness might vary between different legal systems.

6.1. REGULATION OF DIGITAL CONTENT

At the heart of the digital revolution is the way digital content is utilised: the range of applications (“apps”) for smartphones is vast, digital content controls the way many physical devices operate, and CAD-files provide designs which can be turned into physical items through 3D-printing technology. Digital content can be acquired as a stand-alone transaction, e.g., by downloading an app onto a mobile device, purchasing software (such as an office package) for a computer, or buying design-files. In addition, digital content may be supplied as part of the acquisition of a physical item (e.g., software controlling functions of a car).

With digital content having assumed such a central function, inevitable questions arise as to whether there are legal rules in place which deal with the quality and fitness for purpose of such content, remedies when digital content is not of sufficient quality, and even for the consequences of digital content causing damage to other digital content, physical devices, or data stored belonging to the user of the digital content.

This is, of course, not an altogether new question: the classification of computer software has been a much-debated issue, and the current questions about the status of digital content (which includes “old fashioned” computer software) are not particularly new. However, the prevalence of digital content now has given new urgency to this question. Hitherto, most legal systems have debated whether the supply of software/digital content should be treated as a contract for the supply of goods, or one for the supply of services. Neither seems to make particularly

¹⁶ See generally, C. ANDERSON, *Makers – The New Industrial Revolution*, Random House, London, 2012, and C. BARNATT, *3D Printing – The Next Industrial Revolution*, ExplainingTheFuture, Marston Gate, 2013.

¹⁷ See e.g. D.R. DESAI and G.N. MAGLIOCCA, ‘Patents, Meet Napster: 3D Printing and the Digitisation of Things’ (2014) 102 *Georgetown Law Journal*, 1691; A. LEWIS, ‘The Legality of 3D Printing: How Technology is Moving Faster than the Law’ (2014) 17 *Tulane Journal of Technology and Intellectual Property* 303; and P. REDDY, ‘The Legal Dimension of 3D Printing: Analyzing Secondary Liability in Additive Layer Manufacturing’ (2014) 16 *Columbia Science and Technology Law Review* 222.

¹⁸ N.D. BERKOWITZ, ‘Strict Liability for Individuals? The impact of 3-D printing on Products Liability Law’ (2014) 92 *Washington University Law Review* 1019.

¹⁹ L.S. OSBORN, ‘Regulating Three-Dimensional Printing: The Converging World of Bits and Atoms’ (2014) 51 *San Diego Law Review* 553; C. TWIGG-FLESNER, ‘Conformity of 3D prints – Can current Sales Law cope?’, and G. HOWELLS and C. WILLETT, ‘3D Printing: The Limits of Contract and Challenges for Tort’, both in R. SCHULZE and D. STAUDENMEYER (eds), *Digital Revolution – Challenges for Contract Law Nomos*, Baden-Baden, 2016.

good sense: digital content is by its nature intangible, and whilst it has in the past often been supplied on a physical medium, is increasingly transferred as a download via the internet. Moreover, a transaction involving the supply of digital content does not involve the transfer of ownership (as would be the case with a contract for the sale of goods) but merely the right to acquire a copy of the digital content (unless the content is accessed on-line without being transferred to the user's device) with a licence to use this in accordance with the terms of the licence.²⁰

In any case, it seems that these debates about how to classify digital content were only necessary for two reasons: (i) some legal systems operate with a closed category of contracts types; and (ii) more significantly, out of a desire to ensure that a person acquiring digital content could be assured that there was a quality standard required by law with appropriate remedies in circumstances where the digital content fails to reach that standard.²¹

In jurisdiction where the first reason applies, law reform may therefore be required to create a new type of contract for the supply of digital content. This may be more easily done in some jurisdictions than in others, and may also depend on whether this would be limited to certain categories of contracts (e.g., consumer contracts only) or be generally applicable. There are good reasons for having a separate category of contracts for the supply of digital content: as already mentioned, the supply of digital content has features which are distinct from other types of contract, and might even be said to combine elements of a range of different contracts (e.g., a service element, a hire element if the licence to use the software is time-limited etc.).

With regard to the second reason, in particular, the question therefore arises whether specific legal rules for digital content should be introduced into law to set standard as to the quality and fitness for purpose of digital content, combined with appropriate remedies for circumstances where the digital content falls below that standard or where the interaction of the digital content with physical devices or other digital content causes loss or damage. If it is accepted that this should be the objective, then there are a number of things to consider: first, the relevant provisions could be aligned as closely as possible with the corresponding rules applicable to the sale of goods. A somewhat crude way of achieving this would be simply to extend the definition of "goods" in national law to include "digital content", as was done e.g., in New Zealand.²² The obvious drawback of doing this is that rules designed for tangible items might not be entirely suitable for intangible items.

So perhaps a better option might be to use the relevant rules on quality, fitness for purpose and remedies applicable to goods as a starting point, but modify them as might seem appropriate for digital content. This was the approach adopted in the UK's Consumer Rights Act 2015 ("CRA"). In the CRA, the requirements applicable to goods have been borrowed in almost unchanged form to introduce requirements corresponding to these in contracts for the supply of digital content. Thus, digital content has to be of satisfactory quality,²³ fit for a particular purpose,²⁴ and be as described.²⁵ Similar, although not fully identical remedies, are also provided: initially, a consumer can choose between repair and replacement of the digital content, with a second-stage remedy of price reduction (up to the full value of the price paid).²⁶ Damages for additional losses can also be recovered.²⁷ Maintaining consistency between different types of transactions as much as possible has the advantage of bringing with it a degree of familiarity and might reduce or eliminate any disruptive effect on the law. On the other hand, one objection is that this approach might jar with the specific features of the supply of digital content; for example, remedies such as "repair" and "replacement" might sound somewhat unusual when applied to digital content. So trying to maintain a parallel with familiar rules might seem convenient but does not necessarily provide the best solution.

Secondly, new rules not previously found in respect of goods, but which would provide relevant rules for some of the specific issues created by digital content, could be developed. For example, a new app downloaded onto a smartphone can cause other apps to malfunction and lose data, or the digital content loaded on a physical device might have a defect which causes the device to malfunction and damage the device itself or other goods, or even injure someone. Thus, the CRA includes a specific provision dealing with a remedy for damage caused by digital content (s.46). This section applies where a trader supplies digital content to a consumer under a contract, and that digital content causes damage to a device or other digital content belonging to the consumer. If the damage is of a kind that would not have occurred had the trader exercised reasonable care and skill, then the consumer can require the trader to provide a remedy either by repairing the damage, or to compensate the consumer for the damage with an appropriate payment.²⁸

²⁰ Cf. S. ARNERSTÅL, 'Licensing digital content in a sale of goods context' (2015) 10 *Journal of Intellectual Property Law and Practice* 750.

²¹ Although there are English cases grappling with this issue, it has never been a major difficulty, because the common law has always been more flexible in recognising new *sui generis* contracts for the supply of goods which also include terms regarding the quality and fitness for purpose of the goods akin to those in the Sale of Goods Act 1979. See e.g., the recent Supreme Court ruling in *PST Energy 7 Shipping LLC v OW Bunker Malta Ltd* [2016] UKSC 23, para [31].

²² The definition of goods in the Consumer Guarantees Act 1993 (New Zealand) includes "to avoid doubt...computer software" (s 2(1)(vi)).

²³ Section 34 CRA.

²⁴ Section 35 CRA.

²⁵ Section 36 CRA.

²⁶ Sections 42-44 CRA.

²⁷ Sections 42(6)/(7)(a) CRA.

²⁸ The EU Commission's proposal for a directive on digital content, discussed in section 7.1 below, contains a provision on this issue in Art.14 which takes a somewhat different approach to this.

Third, special rules might reflect the fact that there are multiple ways in which a person can access digital content: it could be supplied on a physical medium, downloaded via the internet, or simply accessed online without being installed on any of the user's devices. Again, the CRA serves as an example: section 39(3)-(7) concern the situation where a contract to supply digital content provides that once the trader has supplied that content, the consumer is to have access to a "processing facility", defined as "a facility by which [the trader] or another trader will receive digital content from the consumer and transmit digital content to the consumer (whether or not other features are to be included under the contract)". Section 39(5) requires that this facility must be available to the consumer for a reasonable time, or for the time specified in the contract.

Overall, it seems that there are a number of key questions which need to be resolved, and these revolve around two primary issues: first, what expectations or requirements as to the quality and fitness for purpose of digital content should be included in appropriate legal rules, and what would be appropriate remedies where digital content fails to achieve this? Secondly, who should be liable in such a situation, and for what? For example, should liability fall solely on the final supplier of the digital content to the user, or should the creator/owner of the software (assuming they are different from the supplier) be subject to liability, whether on a joint or exclusive basis? It may well be that there cannot be a simple answer to this question, because of the manifold ways in which digital content is supplied and utilised.

6.2. THE CONSUMER NOTION – WHEN DOES A CONSUMER BECOME A TRADER?

A second issue which needs to be considered is whether the established bifurcation between consumers and traders can still be maintained in view of the fact that private individuals increasingly become suppliers of goods, services and digital content via various online platforms. Thus, sharing economy platforms such as Airbnb or Uber allow individuals to share their resources with others, whereas other platforms such as shapeways allow individuals to market their CAD-files for 3D-printed goods or to sell homemade items (e.g., etsy). In some of these cases, the supplier of the goods or services will be acting in a professional capacity and this will be obvious, but in other instance, it will be much less apparent whether the supplier is a business or private individual.

However, this issue is becoming increasingly important, because the recipient of the goods or services will often not know whether the contract is with another private individual, or with a professional seller/supplier. As a result, it will not be clear if consumer law rules will apply to a particular transaction. Similarly, a private individual who regularly offers goods, services or digital content such as CAD-files might not know at which point these activities cross the threshold to being a business supply.

This blurring of the dividing line between when a supply would be done as a business or as a private individual suggests two possible responses: first, it might be necessary to clarify when that diving line is crossed and an individual should be treated as acting in the capacity of a business. In EU law, the familiar definition of a trader, as found e.g., in Art.2(2) of the Consumer Rights Directive, is "any natural person or any legal person ... who is acting ... for purposes relating to his trade, business, craft or profession ...". However, what are the criteria by which it is determined what constitutes an individual's trade, business, craft or profession, particularly in the case of a "hobbyist" who has started to offer something occasionally but does so with increasing frequency? It might be necessary to supplement the current definition with an indicative set of factors to be taken into account, such as the regularity with which an individual offers something, the variety of goods or digital content offered, the volume of transactions concluded by an individual and the sophistication of the individual. These are merely suggestions – other factors might also be relevant, and some of these might not be particularly helpful.

Secondly, it is also possible to approach this issue from a different angle. As mentioned, this question arises in the context of on-line platforms, so in the context of a specific category of business model. That being the case, it might be better to consider creating specific rules for this, rather than simply trying to extend the scope of rules designed for a different context. The dominant concern here is whether the recipient of the goods, services or digital content should be entitled to a comparable level of consumer protection as would be the case under a simple contract between a trader and a consumer. If it is assumed that this should be so, then some thought needs to be given how best to achieve this. It could be done, as suggested above, by facilitating the application of existing consumer law rules through an enhanced definition of key terms. However, it might be better to consider whether some liability should be imposed on the intermediary, i.e., the platform, instead, or whether some form of mandatory insurance to protect the recipient would be a suitable alternative means of ensuring adequate protection for the recipient. The role of platforms and intermediaries raises additional questions which are considered next.

6.3. PLATFORMS AND INTERMEDIARIES

The discussion so far as already noted the emergence of a new type of on-line intermediary, usually referred to as "on-line platforms". The essential function of such platforms is to act as an intermediary between a supplier of goods, services or digital content and a recipient of the same. As already suggested, such a supplier could be a private individual offering the odd thing on an occasional basis (whether that is a stay in a spare bed-room or a

car-share on a specific journey, or handmade craft items) as well as a self-employed trader doing so on a regular basis (for example, a driver of a private hire vehicle). The purpose of such platforms is to put suppliers and recipients in touch with one another, often for the benefit of the supplier who will gain access to a much wider range of potential customers without having to invest in setting-up a personal website. Such platforms may seem to be a modern version of noticeboards in a public library or bulletin boards. However, often, these platforms are more than just passive facilitators between the supplier and recipient of goods, services or digital content: some platforms stipulate quite detailed rules which both suppliers and recipients must adhere to. Moreover, many platforms also provide mechanisms for processing orders and payments, taking a small percentage of the price paid as a processing fee. Other platforms may take an even more active role, such as some of the platforms dealing with 3D-printing: such a platform may allow a designer to publish their designs (i.e., their CAD-files) on the platform and create “shops”, which then allow interested recipients to view the designs and order the physical item. The platform will then process the order, 3D-print the item, and despatch the physical item directly to the recipient.

The fact that these platforms are often more than just passive intermediaries raises new legal questions about the extent to which liability should be placed on them, rather than a supplier, when something goes wrong. Depending on the precise contractual arrangements between recipient, supplier and platform, there may already be a clear allocation of liabilities, but this might not always produce the right balance between all the parties concerned, and so it may be necessary to consider whether ‘non-passive’ intermediaries should be made subject to specific legal duties towards both the supplier and the recipient in respect of the proper performance of transactions concluded via such platforms. Resolving this issue will require a careful analysis of how such platforms operate, what particular problems can be identified, and the extent to which existing laws can be deployed to address these. This might reveal that specific action is required.

6.4. COMBINATION OF SALE, SERVICE AND DIGITAL CONTENT IN ONE TRANSACTION BUT DIFFERENT PARTIES

The involvement of platforms is just one instance where a transaction seems to involve three parties, with the intermediary no longer merely being a conduit for the dealings between a supplier and a recipient of goods/services/digital content. There are other instances where three party situation arise: for example, there may be digital content on a physical item, such as software which controls various functions of a car, or an app on a wrist-device which monitors health data of its user. When a person acquires that device, there may be a contract for the supply of the physical item including the digital content, but then a separate contract with the supplier of the digital content for monitoring use of the item and updating the software or for processing the data generated by the content.

The point is that the long-held paradigm transaction of the one-shot trader consumer contracts is on increasingly shaky ground as these multi-party relationships are becoming more and more common. It is a trite observation that contract law is essentially based around a two-party paradigm (i.e., a “synallagmatic contract”). Thus far, it has not been causing much difficulty to apply this approach to three-party (or even multi-party) situation where each party had a distinct role to play. Thus, an in-store contract to buy a microwave paid for by the buyer using a credit card is a three-party situation (at least), but there are separate – albeit connected – contracts involved. Moreover, these contracts are generally performed relatively swiftly and have a clear end-point (ownership in the goods is transferred, the obligation to pay is satisfied by payment authorised by the credit-card company, and the trader will receive funds from the credit-card company).

So what is different now? The prominence of digital content certainly has the potential to affect the way in which traditional contract rules might be applied: whilst there is no great difference as far as the sale of the physical item is concerned, the contract as it pertains to the digital content is likely to be a long-term contract with continuous performance. Moreover, if there is an element of non-performance in the digital content contract, then this could have an effect on the quality and fitness for purpose of the physical item too, and so questions will arise as to the distribution of liabilities. There is certainly a question as to whether contract law rules designed for the synallagmatic paradigm can cope with these more complex situations. Ultimately, this might well turn out to be the case, and there might be no cause for alarm. However, this is something which will require close analysis. It certainly seems to be the case that, in the context of the internet of things, the focus of the law on the physical devices will have to give way to recognising that the main functionality of these devices does not rest with the physical item but instead is largely transferred to the digital content and the data that is collected, transferred and processed. In her useful analysis of the legal implications of the internet of things, Wendehorst notes that

‘...the emergence of the [internet of things] is a serious challenge for traditional rules of contract and contractual liability. Some of the problems encountered are merely gradual in nature. There are, however,

some more fundamental issues as smart devices and IoT call into question the very notion of sale and ownership...the future lies in “device as service”...²⁹

Her observations reinforce the point made above that whilst some aspects of the digital revolution can be dealt with by adjustments to the law, others will be much more fundamental and necessitate a conceptual rethink. The paradigms on which much of the law is based may be displaced by the rise of the internet of things – and the law truly disrupted.

6.5. THE INTERNET OF THINGS AND AUTOMATED CONTRACTING

As noted above, a further significant development brought about by the digital revolution is the “internet of things”. This involves various devices all connected to the internet capable of exchanging data with one another. This can have basic applications such as utilising a smartphone to control the central heating, lighting and digital TV recorder. However, these devices can also collect data about usage and performance, which can be shared with other devices and processed in order to analyse recurring patterns. This could enable such connected devices to adopt a degree of predictive behaviour, e.g., by switching-on the heating or lights at a time when the user would usually do so manually.

One possible application for the internet of things is both domestic and commercial stock-keeping. For example, digital content operating a refrigerator might be able to keep track of the use-by date of food stored in the refrigerator and remind the user to replace out-of-date items. A somewhat fanciful idea is that it might be possible for the refrigerator to place an order for fresh food directly with a grocery delivery service without any intervention by the user. A more realistic and likely application is in a commercial setting: a store could monitor its stock electronically by keeping track of overall stock levels and collect data on the turnover of its stock. Based on this data, orders could be placed automatically with suppliers at times and for quantities as necessary.

There are two broad implications for the development of the law here: first, the possibility to mine data which can then be processed both by the devices themselves as well as being shared with others over the internet raises questions as to how such data can be controlled (more in the next section). There might also be implications if the processing of data produces unexpected or incorrect results.

Secondly, the possibility for devices to place and accept orders without any human intervention creates potential issues for contract law. At a basic level, there will be the question whether such contracts are valid at all. On this point, Article 12 of the UN Convention on the Use of Electronic Communications in International Contracts is interesting: it provides that contracts concluded through the “interaction of automated message systems” should not be regarded as invalid or unenforceable solely because there was no review or intervention by a natural person in this process. On the one hand, this is a useful enabling provision for automated contracting, but on the other, it might raise the question of what is meant by “contract” in view of the lack of any true expression of intention by, and agreement between, the parties. Finding legal rules to deal with particular issues might seem easy, but at the same time, this could disrupt our understanding of the very nature of Contract Law.

Beyond questions of basic validity and enforceability, there are other issues which are likely to require new legal rules. For example, if a device misinterprets the data it has collected and places an incorrect order, who should be liable for the consequences of this: should it be the owner of the device which placed the order, or should such liability potentially be imposed on the supplier of the device, or the supplier of the digital content which processed the data and placed the order? These are questions that will need to be addressed in due course, not least to provide clarity for consumers and traders alike.

6.6. THE USE OF PERSONAL DATA

Finally, one of the most problematic aspects of the digital revolution, and one which where the most disruptive effects might yet be felt, is with regard to personal data. It has already been noted several times that one of the effects of the digital revolution is the possibility to collect, mine and process vast amounts of data about an individual’s habits as well as the performance of devices. This data can be of great value to a range of persons: businesses might utilise this data to target advertising and promotional offers with greater focus to attract more business. Also, by receiving data about the performance of individual devices, it becomes possible to get a much better understanding of how devices fare for some time after they have been sold. It might even be possible to detect unusual or unexpected ways in which consumers use such devices.

Inevitably, this vast flow of data raises several legal issues. First, there is the need to ensure that those collecting and processing data ensure that this data is kept securely and only used for authorised purposes. Data protection legislation needs to set clear rules about what is and is not permissible, and these rules need to be enforced

²⁹ C. WENDEHORST, ‘Consumer Contracts and the Internet of Things’ in R. SCHULZE and D. STAUDENMEYER (eds), *Digital Revolution – Challenges for Contract Law* Nomos, Baden-Baden, 2016.

rigorously. Secondly, it is also important to recognise the benefits that could arise from data collection and analysis, particularly with regard to usage and performance data. For manufacturers, such data can provide important information about the reliability and durability of their products, as well as about product aspects which could be improved. For this to happen, it must be possible for such data to flow freely and not be impeded by jurisdictional limitations. In turn, one might consider whether the right to receive and process such data should also bring with it additional obligations, such as a duty to warn users if common problems or misuses have been identified. Moreover, identification of a particular problem might trigger a duty to modify the product, or, in the case of digital content, a duty to update that content to remove any problems.³⁰

A further aspect of data has also started to attract the attention of scholars and policy-makers: an alternative consideration, or “counter-performance”, to money.³¹ Instead of paying for digital content such as a mobile phone app, the recipient agrees to make available to the supplier certain personal data. Consumers may not realise that digital content offered for free is, in fact, frequently supplied in return for access to some personal data. If it is recognised in law that using data can constitute consideration, or a counter-performance, then such a transaction will also give rise to a contract. There are several issues arising from this: first, personal data is subject to data protection legislation, and it is not usually possible to force someone to permit another person to have access to personal data. This could be a problem where a trader requires personal data to be made available before digital content is supplied because there might be a conflict with data protection rules regarding consent to data processing.

Secondly, assuming a person consents to the provision of personal data to a trader in return for the supply of digital content. Under data protection laws, this consent can be withdrawn at any time.³² However, this could create a problem if personal data was provided as consideration for the receipt of digital content, or even goods or services, because there is no clarity as to what the effect of the withdrawal of consent might be on the supply contract. The withdrawal of consent to processing personal data requires the recipient of that data to return it and/or delete the information. As a result, it may seem that the trader no longer has any consideration for the supply of the digital content, so how will this affect the contract itself?

There are a number of possible answers to this. One possible analysis would be to say that if a contract involves the provision of personal data as consideration, then this could be treated as a licence to use the data in return for the licence to use the digital content, so by withdrawing the consent for processing data and thereby terminating the licence to use the data, the licence to use the digital content is equally terminated immediately. This might be a suitable outcome. An alternative analysis would depend on the extent to which the personal data belonging to one customer has been combined with the personal data of others and processed to produce new data, i.e., where additional value has been derived from an individual’s personal data through combining it with other data and analysing this. At this point, even though the personal data supplied by the individual who has now withdrawn his consent is no longer available to the trader for further processing, the analytical findings already obtained presumably are beyond the reach of the individual’s consent. In that case, the trader has retained some benefit of value and the individual should be allowed to continue to use the digital content even though consent to data processing has since been withdrawn.

As well as this individual dimension of using data as a form of counter-performance to receive goods, digital content or services, the collection of vast amounts of data are turning data itself into a new subject for business transaction, and a potentially very valuable one at that.³³ Utilising data in this way brings with it familiar concerns about data security and protection of personal data. However, it also prompts interesting questions about whether data as a commodity, i.e. subject-matter of a contract, requires a new legal response.

6.7. OTHER QUESTIONS

The foregoing sections have highlighted what are perhaps the most immediate and significant questions from a legal perspective. There are others, some of which will in due course attract the attention of the courts, regulators or legislatures. For example, Cifrino considers how the ownership of virtual assets within virtual worlds (he focuses on World of Warcraft and Second Life) should be dealt with by law, i.e., whether this should be a matter for property law (which is traditionally concerned with tangible assets or land) or contract law. He concludes that contract law, rather than property law, should resolve matters arising from disputes over virtual assets, with the

³⁰ This is explored in depth by B. WALKER-SMITH, ‘Proximity-Driven Liability’ (2014) 102 *Georgetown Law Journal* 1777.

³¹ C. LANGHANKE AND M. SCHMIDT-KESSEL, ‘Consumer Data as Consideration’ (2015) *Journal of European Consumer and Market Law* 218.

³² Cf. Art. 6(1)(a) and 9(2), and Art.17 of Regulation 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (2016) O.J. L119/1 (the new “Data Protection Regulation”).

³³ A. DE FRANCESCHI AND M. LEHMANN, ‘Data as Tradeable Commodity and New Measures for their Protection’ (2015) 1 *Italian Law Journal* 51.

End-user license agreements (“EULAs”) applicable to such virtual worlds defining the dispute-resolution process.³⁴

The inevitable consequence of a disruptive development is that the full extent of the changes it brings about will not be immediately obvious, but over time, clarity on this will emerge. Some implications will become obvious sooner rather than others, and will attract the attention of legal scholars and policy-makers alike. Those discussed above are already receiving a great deal of attention, with the EU having made the Digital Agenda a priority objective.

7. THE EU AND THE DIGITAL REVOLUTION

This section will consider how the European Union is responding to the challenges of the digital revolution. It is tackling this in stages. A number of initiatives were launched under its “Digital Single Market” banner,³⁵ with early proposals for directives in the consumer contract law field (discussed next). At the end of May 2016, the European Commission presented its next wave of proposals and communications. In view of what was said above about the need to plan carefully before any new legal rules are adopted, it is reassuring that the European Commission does not intend to rush towards adopting regulatory measures for on-line platforms. In its recent communication on this issue, it states that

‘...the need to foster the innovation-promoting role of platforms requires that any future regulatory measures proposed at EU level only address clearly identified problems relating to a specific type or activity of online platforms in line with better regulation principles. Such problem-driven approach should begin with an evaluation of whether the existing framework is still appropriate.’³⁶

There are two important points to take from this: (i) the starting point will be the *clear* identification of problems, so any action taken will be responsive rather than predictive; and (ii) before new rules are introduced, the application of existing rules to newly identified problems will be considered first. However it is also acknowledged that this may not always be feasible:

‘The collaborative economy is a good example where rules designed with traditional and often local service provision in mind may impede online platform business models. This issue will be addressed in the forthcoming Commission Communication on the collaborative economy.’³⁷

It is reassuring to see that the European Commission has recognised the importance of approaching the challenges created by the digital revolution in this way. This approach is sensible and it will be interesting to see how it is applied in practice. There appears to be a recognition that it might be possible to respond to any identified problems without having to adopt dedicated legislation,³⁸ perhaps by clarification how existing rules should be applied in the context of platforms. That said, it does not rule out new regulatory measures, should this prove to be necessary.

7.1. PROPOSALS ON CONTRACT LAW ASPECTS

For present purposes, the most immediately relevant ones are two proposals put forward by the European Commission in December 2015, one focusing on fully harmonised rules for the online and distance sale of consumer goods,³⁹ and, perhaps more significantly, the second one seeking to introduce new rules for the supply of digital content.⁴⁰ Rather than discussing the substance of these proposals here (not least because they are likely to undergo modification during the legislative process),⁴¹ a number of general observations are made instead.

³⁴ C.J. Cifrino, ‘Virtual property, virtual rights: why Contract Law, not Property Law, must be the governing paradigm in the law of virtual worlds’ (2014) 55 *Boston College Law Review* 235.

³⁵ The cornerstone document is the EUROPEAN COMMISSION’s communication *A Digital Single Market for Europe* COM (2015) 192 final, 6 May 2015.

³⁶ EUROPEAN COMMISSION, *Communication on Online Platforms and the Digital Single Market - Opportunities and Challenges for Europe*, COM (2016) 288/2, p.5.

³⁷ *Ibid.*

³⁸ For a different position, see C. Busch, H. Schulte-Nölke, A. Wiewiórska-Domagalska and F. Zoll, ‘The Rise of the Platform Economy: A New Challenge for EU Consumer Law?’ (2016) 5 *Journal of European Consumer and Market Law* 3, calling for work on a ‘platform directive’ to commence. The Commission’s more cautious approach seems preferable at this point.

³⁹ Proposal for a Directive of the European Parliament and of the Council on certain aspects concerning contracts for the online and other distance sales of goods COM (2015) 635 final, 9 December 2015.

⁴⁰ Proposal for a Directive of the European Parliament and of the Council on certain aspects concerning contracts for the supply of digital content COM (2015) 634 final, 9 December 2015.

⁴¹ Moreover, several of the other chapters in this collection focus on aspects of these proposals.

First, these proposals only deal with one of the issues identified in section 6 above: the possible regulation of contracts for the supply of digital content. Indeed, the proposal for the online and distance sales of goods seems to have no real significance as it overlaps with the Consumer Rights Directive (2011/83/EU) and the Consumer Sales Directive (99/44/EC), and it primarily seems to have the more mundane objective of updating the legal rules on what is now a fairly established method of selling goods. Whether this proposal contains any meaningful improvements which would genuinely make the online/distance sale of goods easier throughout the Single Market is for discussion elsewhere, except to note that one cannot help but note that the overriding concern is to introduce a set of fully-harmonised rules rather than necessarily a set of rules clearly targeted at the particular features of such contracts.

Secondly, it is important to appreciate that many of the rules in both proposals have had a lengthy gestation period. They are taken from the proposal for a Common European Sales Law (CESL),⁴² which met with a rather lukewarm reception and was eventually withdrawn. The proposal for CESL was the culmination of a decade-long process on developing a European Contract Law,⁴³ which had resulted in the so-called Draft Common Frame of Reference.⁴⁴ So, in a sense, the two proposals put forward in December 2015 are the latest attempt to adopt legislation based on years of work. On the one hand, drawing on previous initiatives is understandable but on the other, it needs to be questioned to what extent the model rules from the DCFR or its modified provisions in the CESL are actually suitable for dealing with the particular features of contracts for the supply of digital content.⁴⁵ Of course, the digital content proposal does contain some modifications. For example, the proposed “conformity with the contract” requirement in Art.6 prioritises the subjective agreement of the parties in the contract (see also Recital 25), and only stipulates a “fitness for normal use” default criterion if there is no agreement. This raises two issues: first, it invites the question of what the purpose of a “conformity” requirement in modern consumer legislation should be: is it simply to give effect to the intention of the parties, or is it more ambitious and seeks to set-down a clear quality standard which any digital content supplied to consumers must meet? Bearing in mind the objective of creating a digital single market throughout the EU, it seems that a clear objective quality standard would be better suited for this. Secondly, and following on from the previous point, the use of the “conformity with the contract” notion and the priority given to the agreement of the parties itself is open to challenge for the simple reason that it does not match the realities of acquiring digital content: surely in most cases, the process of acquiring digital content is fully automated, with no negotiation between the parties and therefore no agreement reflected in the contract, and little, if any, human intervention on the trader’s side?⁴⁶ So a subjective conformity requirement seems not only a backwards step but one which is simply unsuitable for the nature of the transaction. A novel solution reflecting the specific features of digital content and the supply of such content is needed.

7.2. OTHER PROPOSALS

In addition to the proposals mentioned in the previous section, there are further proposals which relate to the digital single market and have at least some impact on contract law. For example, the proposed “Geo-Blocking” Regulation⁴⁷ is intended to prevent discrimination against customers by traders on the grounds of the customer’s residence when accessing websites or ordering goods or services. This is essentially a specific application of the EU’s non-discrimination principle which is already a limitation to the scope of the general principle of freedom of contract. A further proposal deals with cross-border parcel delivery services,⁴⁸ but this only strengthens the oversight of the relevant regulators and requires universal service providers to notify their tariffs, which are then assessed for their affordability, as well as dealing with cross-border access. It does not provide any specific contract law rules.⁴⁹

⁴² COM (2011) 635 final, 11 October 2011. For scholarly discussions, see e.g., G. DANNEMANN and S. VOGENAUER (eds.), *The Common European Sales Law in Context*, Oxford University Press, 2013; M. SCHMIDT-KESSEL (ed.), *Ein einheitliches europäisches Kaufrecht?* Sellier, Munich, 2012; H. SCHULTE-NÖLKE, F. ZOLL, N. JANSEN and R. SCHULZE (eds.), *Der Entwurf für ein optionales europäisches Kaufrecht*, Sellier, Munich, 2012.

⁴³ Generally, see L. MILLER, *The Emergence of EU Contract Law – Exploring Europeanization*, Oxford University Press, 2011 or C. TWIGG-FLESNER, *The Europeanisation of Contract Law*, 2nd edn, Routledge, Abingdon, 2013.

⁴⁴ STUDY GROUP ON A EUROPEAN CIVIL CODE/RESEARCH GROUP ON THE EXISTING EC PRIVATE LAW (ACQUIS GROUP) *Principles, Definitions and Model Rules on European Private Law – Draft Common Frame of Reference*, Oxford University Press, 2010.

⁴⁵ Cf. ARNERSTÄL, above n.xx.

⁴⁶ Cf. J. SMITS, *The New EU Proposal for Harmonised Rules for the Online Sales of Tangible Goods: Conformity, Lack of Conformity and Remedies*, Study for the JURI Committee of the European Parliament (February 2016), p.9.

⁴⁷ Proposal for a Regulation on addressing geo-blocking and other forms of discrimination based on customers' nationality, place of residence or place of establishment within the internal market COM(2016) 289 final (25 May 2016)

⁴⁸ Proposal for a Regulation on Cross-border parcel delivery services COM (2016) 285 final (25 May 2016)

⁴⁹ There is also a proposal for an updated version of the consumer protection enforcement regulation: Proposal for a Regulation on cooperation between national authorities responsible for the enforcement of consumer protection laws COM (2016) 283 final.

7.3. WHAT NEXT?

Whatever might be said about the detail of the proposal on digital content, the fact that a proposal on contract for the supply of digital content has been made has an obvious signalling function: the disruptive effect of the digital revolution has reached the Law of Contract and the time to consider the implications flowing from this has come. Designing appropriate rules for the supply of digital content will only be the start. There are many issues which will require further consideration (several of which are already on the EU's to-do list). A lingering issue will undoubtedly be the role of on-line platforms and whether new rules will eventually be considered for these. Currently, there is no specific EU Law in place, nor envisaged, which focuses specifically on these platforms. Existing rules in Arts.12-14 of the E-Commerce Directive (2000/31/EC) deal with the liability of intermediaries in the context of e-commerce (which includes such platforms), but that liability is very limited.⁵⁰ As noted at the start of this section, the European Commission intends to proceed in a problem-focused manner and investigate first whether existing legal rules can address newly identified problems with platforms before developing new rules. Whilst this seems to entail maintaining the current position regarding the liability of platforms under the e-commerce directive, there will be targeted intervention dealing with content harmful to minors and hate-speech as well as the allocation of revenues from the distribution of copyright-protected content.⁵¹ The main focus for the EU with regard to online platforms is to create a regulatory environment that facilitates innovation, and as such, top-down regulation is not on the cards immediately. With existing rules such as the Unfair Commercial Practices Directive (2005/29/EU) and the Unfair Contract Terms Directive (93/13/EEC) already creating a strong consumer protection framework, ensuring compliance and full enforcement of existing rules seems an appropriate response at this time.

There is also the greater prevalence of connected devices in the internet of things and the wealth of data created and exchanged as a result, as well as the legal implications of fully automated contracting. Similarly, the way data is being used both as a form of "counter-performance" and as a commodity in its own right raises new issues. For all of these areas, and others which might also be targets for EU intervention, the key message this paper has sought to convey is that care needs to be taken not to be overly hasty and that any concerns about filling gaps in the law quickly should not drive the EU's legislature to adopt rules which might be just "good enough" – this is not an area of law where rules for rules' sake are needed. Rather, the issues and legal implications of these developments and their disruptive effects for the law need to be identified clearly, and possible ways of responding to these developed and scrutinised before further proposals are made.

8. A CONCLUDING THOUGHT

There can be no doubt that the digital revolution has been a disruptive technology for business, but the disruptive effect for law, especially contract law, is not necessarily as extensive as the flurry of activity at the EU level might suggest – although the careful approach set out in the Commission's communication on on-line platforms discussed above seems to be the right one at this point in time.

Generally speaking, it is essential to consider the implications for the law of the disruptive effects of the digital revolution carefully and to identify where there is a true disruptive effect for the law which will necessitate the development of new legal rules. As well as finding solutions for such specific issues, the wider implications for the affected areas of law as a whole need to be considered before new rules are adopted. Disruptive technology poses challenges for the law and can result in disrupted law, and the task for legal scholars and policy-makers is to consider appropriate solutions. One of the factors affecting the ability of a business to adapt to disruptive technology by Christensen in the conclusions to his book is that the capabilities of an organisation are often specialised and context-specific. He writes

'All of these capabilities – of organizations and individuals – are defined and refined by the types of problems tackled in the past, the nature of which has also been shaped by the characteristics of the value networks in which the organizations and individuals have historically competed. Very often, the new markets enabled by disruptive technologies require very different capabilities...'⁵²

A similar observation could be made about the law: its rules and principles were defined and refined by problems which have arisen in the past, and this has shaped the value system on which legal rules are based. However, law which has been disrupted requires new rules and principles to deal with the novel issues which have been created by the effects of disruptive technology. The challenge for legal scholars, policymakers and legislators alike is to

⁵⁰ Cf. Case C-324/09, *L'Oréal SA and Others v eBay International AG and Others* [2011] ECR I-6011.

⁵¹ EUROPEAN COMMISSION, *Communication on Online Platforms and the Digital Single Market - Opportunities and Challenges for Europe*, COM (2016) 288/2, p.9.

⁵² CHRISTENSEN, above n.xx, p.227.

identify what these new rules, principles and concepts need to be, and rising to this challenge will require new capabilities to be developed.