

Law 2.0 – Robots, Social Media and the Traditional Legal Framework

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Abstract

Society has tremendously changed the last decade and still is in a transitional period because of different technological evolutions. These technological developments affect our way of thinking, doing business, communicating, interaction and the work/life balance. Some argue the law will need a fundamental make-over as well. The question that arises from a legal point of view is thus whether the existing long-standing legal principles are compatible with technological evolutions or, instead, new legislation will need to be adopted. If this is the case, we will formulate some (general) recommendations that can be taken into account by policy-makers, judges and lawyers when creating or applying the law in the 'society of tomorrow'. Our presentation will try to provide an answer to these fundamental issues through a case-study of recent evolutions in two different fields of law, namely the introduction of self-driving cars (SDCs) in traffic for liability law and the use of social media in court proceedings for procedural law.

Keywords: Technology, Social Media, Artificial Intelligence, Robots, Self-Driving Cars, Legal Reform

Introduction

Society has changed tremendously in the last decade. It still is in a transitional phase because of different technological developments. These evolutions affect our way of thinking, doing business, communicating, interaction and the work/life balance. It is, therefore, not surprising that several aspects related to those technological evolutions are increasingly being studied in academia³ and addressed by policymakers.⁴ The question that arises from a legal point of view is whether some of the existing long-standing legal

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³ See in general: R. Brownsword, E. Scotford & K. Yeung, 'The Oxford Handbook of Law, Regulation and Technology' (Oxford: Oxford University Press 2017) 1339p.

⁴ Reference can, for example, be made to a Resolution by the European Parliament of the 16th of February 2017 with recommendations to the Commission on civil law rules on robotics.

principles are compatible with technological evolutions or whether new legislation will need to be adopted. In this regard, some argue that the law lags behind technological development.⁵ Technological evolutions may expose gaps in the existing legal framework or may give rise to undesirable conflicts and call for changes.⁶ We will try to provide an answer to these fundamental issues through a case-study of recent evolutions in two different fields of law, namely the introduction of self-driving cars (SDCs) in the area of liability law (part 1) and the use of social media for notice of court proceedings in the area of procedural law (part 2). We will briefly summarise the main findings of our article in a conclusion.

1. Self-Driving Cars and Liability

A first example that is analysed is the autonomous vehicle. Once some preliminary considerations have been discussed (part 1.1.), we will proceed with an analysis of aspects related to the liability for damage caused by self-driving cars (part 1.2).

1.1. Preliminary Considerations

Self-driving or autonomous vehicles are no longer a mere futuristic idea. According to recent predictions, fully autonomous vehicles could already be available within five to twenty years.⁷ Vehicles, however, will not suddenly become fully autonomous or self-driving. Instead, technology will gradually take over a user's control over the vehicle. Technology has already partly taken over some of the user's tasks in controlling the vehicle. Examples thereof are adaptive cruise control, lane keeping assistance and automatic parking systems. These forms of partial vehicle are covered by the umbrella term Advanced Driver Assistance Systems (ADAS).⁸ Vehicles will eventually be able to take persons from one place to another without any human interference.⁹ In that case, one can speak of a fully autonomous or driverless vehicle.¹⁰ Today, only prototypes of such vehicles exist. They are currently being tested on the road by companies such as Google and Tesla.¹¹

⁵ See: B. Moses, 'Agents of Change: How the Law "Copes" with Technological Change' [2011] 20 Griffith L.Rev. 764.

⁶ R. Leenes et al, 'Regulatory challenges of robotics: some guidelines' [2017] 9 L.I.T. 7.

⁷ J.M. Anderson et al., *Autonomous Vehicle Technology. A Guide for Policymakers* (California: RAND 2016) 4.

⁸ See for more information: H. Surden & M.A. Williams, 'Technological Opacity, Predictability, and Self-Driving Cars' [2016] 38 Cardozo L.Rev. 134-135; K. Van Wees, 'Vehicle Safety Regulations and ADAS: Tensions Between Law and Technology' in X, 'IEEE International Conference on Systems, Man and Cybernetics' (The Hague 2004) 4011-4016.

⁹ See for an overview of the technology used in autonomous vehicles: H. Surden & M.A. Williams, 'Technological Opacity, Predictability, and Self-Driving Cars' [2016] 38 Cardozo L.Rev.129-150; J.M. Anderson et al., *Autonomous Vehicle Technology. A Guide for Policymakers* (California: RAND 2016) 55-74.

¹⁰ H. Surden & M.A. Williams, 'Technological Opacity, Predictability, and Self-Driving Cars' [2016] 38 Cardozo L.Rev. 132-133.

¹¹ See for an extensive discussion and further references: J. De Bruyne & J. Tanghe, 'Liability for Damage Caused by Autonomous Vehicles: a Belgian Perspective' [2018] 8 J.E.T.L. 324-371; J. De Bruyne & C. Vanleenhove, 'The Rise of Self-Driving Cars: Is the Private International Law Framework for non-contractual obligations posing a bump in the road?' [2018] 5 IALS Student Law Review 14-26.

The rise of autonomous vehicle technology has different benefits. Foremost, traffic will become much safer with software operating the vehicle. The number of accidents will reduce as computers are generally much better drivers than their human equivalents. The focus of software systems, for instance, does not diminish due to fatigue, alcohol or checking social media. The ability of software to react is much faster and more accurate than that of humans. Transport will also become more time-efficient with autonomous car technology. Self-driving cars will enable people currently facing restrictions in operating a vehicle – such as the elderly, minors or disabled people – to fully and independently participate in traffic.¹² At the same time, however, the introduction of self-driving cars will present many challenges. Autonomous vehicles will have an influence on various facets of our society such as employment, transportation and public infrastructure.¹³ Software might replace those persons nowadays employed in the transportation sector and the related industries.¹⁴ More importantly, road accidents will not suddenly disappear despite the increased safety as a result of SDCs. Autonomous vehicles will share the road with ‘regular’ non-autonomous cars and other road users during a long transition period. Recent accidents show that the technology used in autonomous vehicles is indeed not entirely flawless. Technological sensors do not work perfectly in exceptional circumstances such as stormy weather or heavy rainfalls. The autopilot sensors of a Tesla car, for instance, were not able to distinguish a white tractor-trailer crossing the highway from the bright sky above, leading to a fatal crash.¹⁵ In February 2016, an autonomous vehicle hit a bus because it did not know that long vehicles are less inclined to stop and give way.¹⁶ More recently, several newspapers reported an accident with a Tesla autopilot vehicle, which resulted in the driver’s death.¹⁷

1.2. Liability and SDCs

Against this background, the question arises whether the legal framework dealing with the liability for damage caused by SDCs will need a fundamental make-over¹⁸ or instead minor changes might be sufficient. In other words, one has to assess “whether tort liability rules – as they are currently shaped – are suited to govern the “car minus driver” complexity,

¹² J.R. Zohn, ‘When Robots Attack: How Should the Law Handle Self Driving Cars That Cause Damages?’ [2015] 2 U. Ill. J.L. Tech. & Pol’y 471; J. Gurney, ‘Sue My Car Not Me: Products Liability and Accidents Involving Autonomous Vehicles’ [2013] 2 U. Ill. J.L. Tech. & Pol’y 250-252; J.M. Anderson et al., ‘Autonomous Vehicle Technology. A Guide for Policymakers’ (California: RAND 2016) xv & 16-17; J. De Bruyne & C. Vanleenhove, ‘The Rise of Self-Driving Cars: Is the Private International Law Framework for non-contractual obligations posing a bump in the road?’ [2018] 5 IALS Student Law Review 16-17 with references.

¹³ See: J.M. Anderson et al., ‘Autonomous Vehicle Technology. A Guide for Policymakers’ (California: RAND 2016) 38-40.

¹⁴ J.M. Anderson et al., ‘Autonomous Vehicle Technology. A Guide for Policymakers’ (California: RAND 2016) xvii & 39.

¹⁵ See: Tesla’s Blog, ‘A Tragic Loss’, 30 June 2016, <https://www.teslamotors.com/blog/tragic-loss>.

¹⁶ See: N. Bowles, ‘Google self-driving car collides with bus in California, accident report says’, The Guardian, 1 March 2016, <https://www.theguardian.com/technology/2016/feb/29/google-self-driving-car-accident-california>.

¹⁷ See: N. Boudette, ‘Fatal Tesla Crash Raises New Questions About Autopilot System’, New York Times, 31 March 2018, www.nytimes.com/2018/03/31/business/tesla-crash-autopilot-musk.html, read on 1 May 2018.

¹⁸ H. Surden & M.A. Williams, ‘Technological Opacity, Predictability, and Self-Driving Cars’ [2016] 38 Cardozo L.Rev 136.

while simultaneously holding on to their theoretical basis”.¹⁹ In any case, some changes to the legal framework will be inevitable. The Belgian Highway Code, for example, is not yet adapted to the introduction of autonomous car technology as it still requires that each vehicle has a ‘driver’.²⁰ The driver must at all times be able to perform the necessary driving actions and must have his vehicle under control.²¹ It is conceivable that the situation in other EU Member States will be quite similar. The existing liability rules might also need some changes with the commercialisation of SDCs. Reliance on fault-based liability will become uncertain in the context of autonomous vehicles. It will, for instance, not be easy to determine who the ‘driver’ is in an autonomous vehicle and whether he can be held liable for a violation of the law that is actually committed by the vehicle itself (e.g. crossing a red light). Research also showed that it is by no means straightforward to hold the user of an autonomous vehicle liable for a negligent act in supervising the technology.²²

Liability in traffic-related matters will, therefore, evolve from a fault-based mechanism towards forms of strict liability. This means that victims will have to target other parties. There are different alternatives in national law. In Belgium, for instance, a party could sue the custodian of a defective object under Article 1384, first paragraph, of the Belgian Civil Code (BCC). That article imposes a strict liability regime for the custodian of a defective object for the damage caused by that object.²³ Another more interesting possibility is to file a claim against the manufacturer of the vehicles or the software under the EU Product Liability Directive.²⁴ Article 1 of the Directive stipulates that the producer will be held liable for damage caused by a defect in his product.²⁵ The question arises whether the Product Liability Directive is adapted to the reality of self-driving cars. In this regard, the GEAR 2030 High Level Group concluded that the motor insurance and product liability directives are sufficient at least for those systems expected by 2020. After that date, however, the application of the Product Liability Directive risks to create a number of problems.²⁶ Against this background, we will examine whether this framework is inadequate and out of tune with the reality of SDCs by focusing on two elements,²⁷ namely whether software can be qualified as product (part 1.2.1) and the moment when the vehicle is put into circulation (part 1.2.2.).²⁸

¹⁹ A. Davola, ‘A Model for Tort Liability in a World of Driverless Cars: Establishing a Framework for the Upcoming Technology’, 1 February 2018, 2, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3120679.

²⁰ Art. 8.1. Koninklijk besluit van 1 december 1975 houdende algemeen reglement op de politie van het wegverkeer en van het gebruik van de openbare weg, Stb. 9 December 1975 (Highway Code). See, however, the recently added article 59/1 allowing tests with SDCs.

²¹ Art. 8.3. Highway Code.

²² See: J. De Bruyne & J. Tanghe, ‘Liability for Damage Caused by Autonomous Vehicles: a Belgian Perspective’ [2018] 8 J.E.T.L. 344-347.

²³ See: J. De Bruyne & J. Tanghe, ‘Liability for Damage Caused by Autonomous Vehicles: a Belgian Perspective’ [2018] 8 J.E.T.L. 348-354.

²⁴ Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, OJ L 210 (Product Liability Directive).

²⁵ Article 1 Product Liability Directive. According to Article 5, a product is defective if it does not provide the safety that a person is entitled to expect, taking all circumstances into account.

²⁶ High Level Group on the Competitiveness and Sustainable Growth of the Automotive Industry in the European Union (GEAR 2030), ‘Ensuring that Europe has the most competitive, innovative and sustainable automotive industry of the 2030s and beyond’, October 2017, 43-44.

²⁷ A. Davola, ‘A Model for Tort Liability in a World of Driverless Cars: Establishing a Framework for the Upcoming Technology’, 1 February 2018, 2.

²⁸ See for a discussion: J. De Bruyne & J. Tanghe, ‘Liability for Damage Caused by Autonomous Vehicles: a Belgian Perspective’ [2018] 8 J.E.T.L. 355-364 & 367-370.

1.2.1. Software as a Product?

Article 2 of the Product Liability Directive defines a product as all movables, with the exception of primary agricultural products and game, even though incorporated into another movable or into an immovable. There is a debate on the question whether software qualifies as product or not. There are several reasons why software cannot be seen as product. For instance, software might be qualified as a service and not as a product. In addition, the Directive only mentions 'movables'. Therefore, it relates to tangible goods only. It would otherwise make no sense to explicitly include electricity in the scope of the Directive.²⁹ This requirement is problematic for software products. Software is a collection of data and instructions that is imperceptible for the human eye. A software system is thus often regarded as intangible. Accordingly, it might not fall within the scope of the Product Liability Act.³⁰

At the same time, however, there are also some reasons why software should fall within the scope of the Product Liability Directive. Software might be seen as the *object* of a service. It is, therefore, covered by the Directive. Software can also be qualified as a product because it is captured on a tangible medium or device (e.g. CD-ROM or USB). This has been affirmed by the European Commission.³¹ Software *an sich* might be considered as a material good as well. The Directive could apply to software even if it is qualified as an intangible good. After all, the inclusion of electricity clarifies that the drafters of the Directive aimed at a wide material scope. Legislators did not think of software in the early 1980s as personal computers only became commercially widespread during the second half of the 1980s. It is thus conceivable that software, in a teleological interpretation of the Directive, falls within the scope of the Directive. The European Court of Justice might come to a similar conclusion in the future. The inclusion of software in the Directive would also reflect the current economic reality in which software is a commercial product just as any other product that may entail risks for users and third parties.³²

1.2.2. Putting the SDC into Circulation

Pursuant to Article 7(b) of Product Liability Directive, the manufacturer of the product can escape liability when he proves that it is probable that the defect causing the damage did not exist at the time when the product was put into circulation or that this defect came into being afterwards. If software is qualified as a product, any update thereof could be considered an act by which the producer brings a new product into circulation. However, it becomes more difficult with so-called self-learning systems. These systems are not periodically updated but continually improve themselves. For defects that are created in this way, a moment of putting the product into circulation cannot be indicated as the manufacturer did not perform an act to that end. The same reasoning also applies to the liability of the manufacturer of the vehicle. The changes made by a self-learning system and

²⁹ Article 2 in fine Product Liability Directive.

³⁰ J. De Bruyne & J. Tanghe, 'Liability for Damage Caused by Autonomous Vehicles: a Belgian Perspective' [2018] 8 J.E.T.L. 355-357.

³¹ See: Written Question no. 706/88 of 5 July 1988 and Answer by Lord Cockfield on behalf of the Commission on 15 November 1988, OJ 114/42, 8 May 1989.

³² J. De Bruyne & J. Tanghe, 'Liability for Damage Caused by Autonomous Vehicles: a Belgian Perspective' [2018] 8 J.E.T.L. 355-357.

the updates performed by the software producer can create defects for which the car manufacturer is no longer liable. Indeed, those defects did not exist at the time when he put the vehicle into circulation. Although the vehicle meets the definition of a product, its manufacturer might thus easily escape liability if the damage is caused by a dysfunction in the software. One could argue that Article 7(b) Product Liability Directive should be inapplicable in those circumstances. This makes it possible for victims to file a claim against the manufacturer of the software even when the defect is created through the continuous self-development of software.³³

2. Using Social Media for Service of Process

After some preliminary considerations on the use of social media in services of process (part 2.1), we describe the current common law trend of effecting service of process through social networking sites (part 2.2). We then give a short overview of how service of process is effectuated in Belgium, as an example of a civil law country (part. 2.3). Finally, having taken note of the service of process framework in Belgium and the absence of social media as a form of acceptable notice, we reflect on the possible introduction of such service within that jurisdiction (part 2.4).

2.1. Preliminary Considerations

Imagine you open Facebook Messenger and you see the new message notification. It is a message informing you that you have been sued and that you are to appear in court as defendant in a family law case involving proof of paternity. Or: you are browsing through Instagram when you suddenly receive a DM (Direct Message). There is a lawsuit pending against you. You have been served in an insurance matter through the DM. Or: you often use LinkedIn to keep track of your contacts' occupations and achievements. One day your LinkedIn inbox indicates that you have a new message. The LinkedIn message contains a summons and a claim form. A foreign company is taking you to court for trademark infringement. Futuristic scenario's? Think again! These situations have actually taken place in the last decade in Australia³⁴, Canada³⁵ and the United States³⁶ respectively.

In a number of common law jurisdictions around the world courts have allowed plaintiffs to notify the defendant of the commencement of legal proceedings (*i.e.* service of process) through the use of social networking platforms. The list of social media is long but the ones most often used for service of process are Facebook, Twitter, LinkedIn and Instagram. When mentioning this relatively recent line of private law cases to lawyers with civil law backgrounds, reactions ranging from mild amused surprise to utter shock and disgust can be observed. In civil law nations effecting service of process through social

³³ J. De Bruyne & J. Tanghe, 'Liability for Damage Caused by Autonomous Vehicles: a Belgian Perspective' [2018] 8 J.E.T.L. 362-363 & 370.

³⁴ Federal Magistrates Court of Australia, Byrne & Howard, 21 April 2010, [2010] FMCAfam 509.

³⁵ A. Robinson, 'Toronto lawyer serves claim with Instagram', 2 February 2018, <http://www.canadianlawyermag.com/legalfeeds/author/alex-robinson/toronto-lawyer-serves-claim-with-instagram-15294/>.

³⁶ United States District Court, Eastern District of Virginia, Alexandria Division, WhosHere, Inc. v. Gokhan Orun, 20 February 2014, 2014 WL 670817.

media is completely unknown. Whereas the use of e-mail for service purposes seems to have become increasingly more well established, the use of social media as an avenue for notification of the commencement of proceedings appears to be in a whole different ballpark. As such, scholars in civil law EU Member States have not yet addressed this relatively new development within the common law world. This is unfortunate as getting insight into the practice might prove valuable for enhancing our own service rules. This contribution, therefore, undertakes an analysis of the reported cases to subsequently contemplate on a general level whether social media service will ever form part of the service methods on the EU continent.

2.2. Social Media Service: a Common Law phenomenon

As mentioned, social media service has been observed in common law jurisdictions. After a brief discussion of the roots of the use of social media in service of process (part 2.2.1.), we will examine the conditions laid down by the case law more thoroughly (part 2.2.2.).

2.2.1. How it all begun

The actual cradle of social media service is to be situated in Australia (at least judging by the reported cases). In *MKM v. Corbo & Poyser* the defendants had taken out a home refinancing loan with MKM Capital but had failed to keep up with payments.³⁷ MKM obtained a default judgment permitting seizure of the property. Before the judgment could be executed it had to be served on the defendants. However, defendants had moved away, had switched jobs and had changed their phone numbers. Repeated efforts at personal service as well as service by mail and publication did not lead to the desired result. MKM therefore made the ground-breaking move of seeking permission to effect service through the defendants' Facebook accounts. The lawyers had located both defendants on the social networking site. To that end they used the personal information the couple had supplied themselves during the loan application process. They were able to link the defendants' date of birth and their e-mail addresses to the Facebook profiles (which were not protected by stringent privacy settings). Master Harper therefore gave plaintiff MKM the green light to inform defendants of the entry and terms of the default judgment via a private Facebook message. In addition, the order had to be served via e-mail and by leaving a sealed copy at their last known address.

Although the origin of social media service lies Down Under, the current centre of gravity for this rather contentious method of service has shifted to the United States. The first approval by an American court came in the case of *Jessica Mpafe v. Clarence Mpafe*.³⁸ A wife wished to divorce her husband but it was believed he had left the territory of the

³⁷ Supreme Court of the Australian Capital Territory, *MKM Capital Pty Ltd. v. Corbo & Poyser*, 16 December 2008, no. SC 608.

³⁸ Fourth District Family Court of Minnesota (Hennepin County), *Jessica Mpafe v. Clarence Mpafe*, 10 May 2011, no. 27-FA-11-3453.

United States.³⁹ Judge Kevin S. Burke noted: “*The traditional way to get service by publication is antiquated and is prohibitively expensive. Service is critical, and technology provides a cheaper and hopefully more effective way of finding Respondent.*”⁴⁰ The judge is further quoted as stating that: “*Nobody, particularly poor people, is going to look at the legal newspaper to notice that their spouse wants to get divorced.*”⁴¹ He ordered service to include, but not be limited to, contact via any Facebook, Myspace, or other social networking site, contact via e-mail and contact through information that would appear through an internet search engine such as Google.⁴²

2.2.2. Conditions

State court litigation is governed by state law provisions whereas the Federal Rules of Civil Procedure (FRCP) determine the service regime for federal cases. For domestic service Rule 4(e)(1) FRCP refers to state provisions as it permits following state law for serving a summons in an action brought in courts of general jurisdiction in the state where the district court is located or where service is made. Under state law more unconventional methods of service are available in comparison to the federal rules. In some states catch-all provisions are in place. §308(5) of the New York Civil Practice Law and Rules (N.Y. CPLR), for instance, states that the court may order service in any manner, if the other (traditional) methods of service provided by § 308 N.Y. CPLR are impracticable. Impracticability however “does not require proof of due diligence or of actual prior attempts to serve a party under the other provisions of the statute”.⁴³ For service abroad, Rule 4(f)(3) FRCP gives the judge the possibility to order any method he deems appropriate, as long as the method is not prohibited by international agreement. The provision offers this option without any need for the plaintiff to first attempt service via the other methods listed in Rule 4(f) FRCP.⁴⁴

A scrutiny of the available cases reveals that the majority of courts have approved of social media service in combination with another form of service. In *Mpafe v. Mpafe*, for instance, service through social networking platforms was ordered together with *inter alia* e-mail service.⁴⁵ In *Ferrarese v. Shaw* plaintiff begun proceedings against his elusive ex-wife who had disappeared with their daughter. The federal court decided that service on the ex-wife should be effected via e-mail, Facebook message and certified mail on defendant’s last

³⁹ H. Van Horn, ‘Evolutionary Pull, Practical Difficulties, and Ethical Boundaries: Using Facebook to Serve Process on International Defendants’ [2013] 26 Global Business & Development Law Journal 566; A. Eisenberg, ‘Keep Your Facebook Friends Close and Your Process Server Closer: The Expansion of Social Media Service of Process to Cases Involving Domestic Defendants’ [2014] 51 San Diego L.Rev. 790.

⁴⁰ Fourth District Family Court of Minnesota (Hennepin County), *Jessica Mpafe v. Clarence Mpafe*, 10 May 2011, no. 27-FA-11-3453.

⁴¹ S. Ward, ‘Our Pleasure to Serve You: More Lawyers Look to Social Networking Sites to Notify Defendants’ [2011] 97 A.B.A.J. 14.

⁴² Fourth District Family Court of Minnesota (Hennepin County), *Jessica Mpafe v. Clarence Mpafe*, 10 May 2011, no. 27-FA-11-3453.

⁴³ District Court for the Southern District of New York, *Fortunato v. Chase Bank*, 7 June 2012, 2012 WL 2086950; District Court for the Southern District of New York, *S.E.C. v. HGI, Inc.*, 8 November 1999, 99 Civ. 3866, 1999 WL 1021087.

⁴⁴ United States Court of Appeals, Ninth Circuit, *Rio Properties, Inc. v. Rio International Interlink*, 20 March 2002, 284 F.3d, 1015.

⁴⁵ Fourth District Family Court of Minnesota (Hennepin County), *Jessica Mpafe v. Clarence Mpafe*, 10 May 2011, No. 27-FA-11-3453.

known address and on defendant's sister.⁴⁶ The Family Court decision in *Noel Biscocho v. Anna Maria Antigua* is another excellent example of the judicial hesitance to completely step away from traditional methods of service in favour of the newly discovered service channel offered by social media. A father who was seeking to modify an order of child support was allowed to serve the mother via Facebook. However, he also had to follow up with a mailing of the summons and the petition to the mother's last known address, even though the court recognised that prior service at that address had been unsuccessful and her physical whereabouts uncertain.⁴⁷ This cautious attitude is, however, not shared by all courts. *Baidoo v. Blood-Dzraku* appears to be the first reported case in which the court approved service by Facebook message as the sole method of service. The plaintiff was a married woman who wanted to divorce her husband. She had no physical address for him and he could not be served in person. The court did not require service via publication as a backup method to Facebook, deeming the former to be "essentially statutorily authorized non-service".⁴⁸

The available case law tends to impose two requirements regarding the social media account to be served. First, the plaintiff has to provide the court with evidence that the account actually belongs to the defendant (authentication requirement). Second, the plaintiff needs to demonstrate that the defendant makes regular use of his account (evidence of use requirement). Both are logical conditions given the fact that the Due Process Clause of the Fourteenth Amendment to the U.S. Constitution imposes that notice should be "*reasonably calculated, under all circumstances, to apprise interested parties of the pendency of the action and afford them an opportunity to present their objections*".⁴⁹

In *Baidoo v. Blood-Dzraku* the plaintiff was aided by the existence of conversations between her and her husband on Facebook. She submitted an affidavit to which she annexed copies of the exchanges between her and the defendant on Facebook and in which she identified the defendant as the subject of the photographs on the Facebook page in question. This satisfied the court that the account did belong to the defendant. As to evidence of regular use, the court was equally convinced by the exchanges between both parties as they indicated that the defendant regularly logged into his account.⁵⁰ Conversely, in *Fortunato v. Chase Bank* the defendant wanted to bring the plaintiff's daughter into the litigation. The request for service through the Facebook account of the daughter was denied for reasons of uncertainty regarding the authenticity of said account. The court argued that: "*anyone can make a Facebook profile using real, fake, or incomplete information, and thus, there is no way for the Court to confirm whether the Nicole Fortunato the investigator found is in fact the third-party defendant to be served.*"⁵¹

2.3. Belgian Legal Framework

In Belgium civil proceedings are initiated either by a writ of summons or by means of a petition. The most common method is the delivery of the writ of summons to the defendant

⁴⁶ United States District Court, Eastern District of New York, *Giovanni Ferrarese v. Vinda Shaw*, 19 January 2016, 164 F.Supp.3d 361.

⁴⁷ Family Court of the State of New York (County of Richmond), *Noel B. v. Anna Maria A.*, 12 September 2014, no. F00787-13/14B, 2014 N.Y. Misc. LEXIS 4708.

⁴⁸ Supreme Court of New York County, *Baidoo v. Blood-Dzraku*, 27 March 2015, 48 Misc 3d 316.

⁴⁹ U.S. Supreme Court, *Mullane v. Central Hanover Bank & Trust Co.*, 24 April 1950, 339 U.S. 314 (1950).

⁵⁰ Supreme Court of New York County, *Baidoo v. Blood-Dzraku*, 27 March 2015, 48 Misc 3d 314-315.

⁵¹ District Court for the Southern District of New York, *Fortunato v. Chase Bank*, 7 June 2012, 2012 WL 2086950.

by the bailiff. The Belgian Judicial Code (BJC) lists a number of methods to effect this service of process (art. 33 *et seq.*). The bailiff will respect a certain order and will try to serve the defendant in person first. Service in person means that the bailiff hand delivers the writ of summons to the defendant.⁵²

If service in person is not possible, service can be effected at the domicile or, in absence of a domicile, the place of residence of the defendant, by leaving a copy of the writ with a relative, servant or agent, provided that the person is 16 years old or above.⁵³ If the previous method of service is not possible, the bailiff can leave a copy of the writ in a sealed envelope at the domicile or the place of residence of the defendant, followed by a letter via registered mail the next business day.⁵⁴

Since 31 December 2016 the possibility for the bailiff exists to serve through e-mail. In civil matters the bailiff may choose the method of service (personal service or electronic service via e-mail) depending on the circumstances specific to the case.⁵⁵ The bailiff can either use the “*gerechtelijk elektronisch adres*” (a unique e-mail address, issued by the government⁵⁶) of the defendant or, for people who do not have such an address, the “*adres van elektronische woonstkeuze*” (a regular e-mail address, not issued by the government)⁵⁷. In the latter case explicit consent needs to be obtained from the defendant each time the bailiff wishes to serve him through that e-mail address.⁵⁸ In both cases the e-mail sent by the bailiff does not contain the actual document to be served. Rather, the content of the documents can only be consulted on a secure digital platform created for that purpose.

If the defendant does not have a known domicile or place of residence at all (neither in Belgium nor abroad), the bailiff will serve the writ on the public prosecutor of the jurisdiction of the court which will deal with the claim.⁵⁹

2.4. Social Media Service in Belgium?

It is not our intention to forecast whether the Belgian legislator will ever decide to incorporate social media service as a service method. We will, however, set out which choices can be made and will signal some of the issues that will have to be dealt with.

First of all, one can wonder which advantages social media offer. One distinct advantage of social media service lies in the fact that it is able to achieve a high likelihood of actual notice. Users of social media platforms typically access their accounts on a regular basis.⁶⁰ A recent press release by Facebook, for instance, showed that there were 2.32 billion monthly active users as of 31 December 2018.⁶¹ Social media are oftentimes accessed on mobile devices. On these devices users run applications that push instant

⁵² Art. 33 BJC.

⁵³ Art. 35 BJC.

⁵⁴ Art. 38, §1 BJC.

⁵⁵ Art. 32quater/3, §2 BJC.

⁵⁶ Art. 32, 5° BJC.

⁵⁷ Art. 32, 6° BJC.

⁵⁸ Art. 32quater/1, §1, 2nd sentence BJC.

⁵⁹ Art. 40, para. 2 BJC.

⁶⁰ K. Knapp, ‘#serviceofprocess @socialmedia: Accepting Social Media for Service of Process in the 21st Century’ [2014] 2 La.L.Rev. 564.

⁶¹ See in this regard: <https://investor.fb.com/investor-news/press-release-details/2019/Facebook-Reports-Fourth-Quarter-and-Full-Year-2018-Results/default.aspx>

notifications alerting the account holder of activity on his profile.⁶² Besides, if service is performed via a private Facebook message or via a post on the defendant's Facebook wall, the likelihood of actual notice is even amplified. Under the default settings, the defendant will receive a notification through e-mail of the message or of the post and any subsequent comments.⁶³

Compared to the second-newest kid on the block, e-mail service, social media holds a few trump cards. In case of service via e-mail there is no possibility to determine whether the e-mail address belongs to the defendant unless the defendant states so himself.⁶⁴ A social media account, on the other hand, can be scrutinised to verify the identity of the holder if the privacy settings allow it. Additionally, e-mail is more prone to spam attacks.⁶⁵ In that regard, social media networks fare better.⁶⁶ Spam messages are less common on social media platforms and malicious messages are less problematic because users can often view the sender's profile without opening the message or they can adjust their settings to disallow messages from individuals who they have not added as "friends".⁶⁷

A subsequent question would be whether there is a need for this type of service to be implemented in Belgium. It is unlikely that the Belgian legislator will introduce social media service as a self-standing independent method. For Belgium, where e-mail service is still in its infancy, this would be too radical. In our opinion, there could nevertheless be a place for this innovative method in the Belgian system.

In part 3.3 it was explained that service on defendants who do not have a known domicile or place of residence is replaced by service on the public prosecutor of the jurisdiction of the competent court.⁶⁸ In Belgium the National Chamber of Bailiffs does not keep statistics on the number of times service is in that regard effected on the public prosecutor. In the Netherlands, on the contrary, such figures are available. The Dutch service rules also require that a defendant without a known domicile or place of residence be served through the office of the public prosecutor at the court where the claim will be heard. Before that date these so-called "public writs" were published in daily newspapers. According to a study around 45.000 public writs are served each year.⁶⁹ Additionally, it is stated that bailiffs receive little or no response to public writs published in newspapers.⁷⁰

There is no reason why these findings cannot be transposed to Belgium. It is extremely likely that the "artificial" service on the prosecutor does not inform the persons in

⁶² A. Upchurch, "Hacking" Service of Process: Using Social Media to Provide Constitutionally Sufficient Notice of Process' [2016] 38 U.Ark.Little Rock L.J. 601.

⁶³ District Court for the Southern District of New York, *FTC v. PCCare247 Inc.*, 7 March 2013, 2013 WL 841037, 5.

⁶⁴ K. Knapp, '#serviceofprocess @socialmedia: Accepting Social Media for Service of Process in the 21st Century' [2014] 2 La.L.Rev. 569.

⁶⁵ J. Wolber, 'Opening a Can of Worms and Viruses: The Impact of E-Service on E-Mail Users Everywhere' [2016] 61 N.Y.L.Sch.L.Rev. 450, footnote 1.

⁶⁶ A. Shultz, 'Superpoked and Served: Service of Process via Social Networking Sites' [2009] 43 U.Rich.L.Rev. 1525, footnote 205 (statement made in the context of Facebook).

⁶⁷ J. Wolber, 'Opening a Can of Worms and Viruses: The Impact of E-Service on E-Mail Users Everywhere' [2016] 61 N.Y.L.Sch.L.Rev. 450, footnote 1.

⁶⁸ Art. 40, para 2 BJC.

⁶⁹ Openbare exploten en ambtelijke publicaties – Artikel 54 en enkele andere artikelen van het Wetboek van Burgerlijke Rechtsvordering opnieuw bezien, Preadvies ter gelegenheid van het 10-jarig bestaan van de KBvG, 53-54.

⁷⁰ Openbare exploten en ambtelijke publicaties – Artikel 54 en enkele andere artikelen van het Wetboek van Burgerlijke Rechtsvordering opnieuw bezien, Preadvies ter gelegenheid van het 10-jarig bestaan van de KBvG, 31.

question, given the results in the Netherlands where service on the prosecutor is even combined with service by publication. It is here that social media service could play a role. Belgian lawmakers could make it obligatory for plaintiffs to undertake a reasonable attempt to serve the elusive defendant via his social media channels, if any. It can be expected that such a subsidiary place for social media service will prompt less resistance than embracing it as a full-blown mechanism. Furthermore, because social media service is deployed as a supplement to an established method, it will alleviate at least some of the sceptical concerns raised by its opponents.

As to the concrete organisation of social media service, the Belgian legislator will face further issues. Certain safeguards relating to the authentication and regular use of the account will need to be construed. The American experience might serve as a source of inspiration. A further specific difficulty that can be identified relates to the bailiff who has to effect the service. Does the bailiff have to use an official account or can he use the account of the plaintiff or can he even send the notice via a fake account? Time will tell to what extent Belgium will “connect” with social media, if at all.

Conclusion

The article examined whether some of the existing legal principles in two different fields are compatible with technological evolutions. With regard to self-driving cars, some legal changes at the national level are inevitable. Legislation dealing with road safety is not yet adopted to the introduction of autonomous vehicles. We have also shown that the application of some of the concepts used in the Product Liability Directive might become problematic when SDCs will be commercialised. For instance, the moment of putting the product into circulation might be incompatible with autonomous systems. In any case, when policymakers would change the legal framework, they should take into account that a minor modification of one aspect (e.g. qualification of software) can have major consequences on the liability of the manufacturers of software or of the SDC. Therefore, we suggest a balanced and well-considered approach when it comes to adapting the existing legal framework to technological evolutions.⁷¹

As to service of process via social media, the article explored the remarkable finding that some courts in common law countries have allowed the notice of the commencement of civil proceedings to be effected via one or more social media accounts belonging to the defendant. In contrast, in civil law EU jurisdictions this phenomenon does not exist. The article laid the conditions imposed by American courts for this type of service bare and subsequently gave an overview of the Belgian procedural framework. Even though it remains to be seen whether the Belgian legislator will ever be tempted by this novel method of service, it is submitted that social media service could be useful as a second layer of subsidiary notice when the defendant does not have a known address.

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⁷¹ See also: J. De Bruyne & J. Werbrouck, ‘Merging self-driving cars with the Law’ [2018] 34 Computer and Security Law Review 1150-1153.

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