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Serving Process by Airdropping NFTs: The Next Frontier?

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Critical to obtaining effective relief against a wrongdoing defendant is being able to serve process on that defendant in a manner that the forum hearing the dispute will deem sufficient, and that meets constitutional due process requirements for giving a defendant notice. Sometimes, though, this is easier said than done. This is especially so when litigating matters involving cryptocurrencies and other blockchain tokens. In such cases, the defendants being sued not infrequently operate only anonymously or pseudonymously, without ever disclosing their true names, physical addresses or even their general location—and that location might be anywhere in the world.

In two recent cases, one in New York and one in London, plaintiffs met this challenge head-on by pursuing an innovative service strategy: Process was served on the defendant by "airdropping" electronic copies of the papers into the defendant's digital wallet, in the form of a "non-fungible token" or "NFT," when the digital wallet was the only known point of contact for an unknown defendant. In each case the court gave its approval to this novel approach to service, notwithstanding the legal questions it potentially raised.

The New York Order

A New York court was the first to authorize service of process in this manner. *LCX AG v. 1.274M U.S. Dollar Coin*, No. 154644/2022, 2022 WL 3585277 (Sup. Ct. N.Y. Co. Aug. 21, 2022) (Andrea Masley, J.S.C.). The *LCX* court first provided authorization for serving process via airdropped NFT in early June 2022, in response to plaintiff's order to show case application at the outset of the case. The plaintiff thereafter moved for an order to confirm that good and sufficient alternative service had in fact been made, which led the court on Aug. 21, 2022 to issue a decision and order in which it "reiterate[d] its reasoning" in writing regarding the propriety of such service because the issue was "a matter of first impression."

In *LCX*, the plaintiff (a Liechtenstein virtual asset provider), brought suit against various unknown defendants for stealing various digital assets worth $7.94 million in total. The complaint alleged that these defendants had gained illegitimate access to the plaintiff's digital wallet and transferred the assets initially to a wallet address over which plaintiff had no control. The defendants then allegedly transferred the assets to

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the "Tornado Cash" mixing service, which was alleged "to allow a user to obfuscate the source of their funds, from the destination, essentially making the funds 'untraceable.'" Following those transactions, the unknown defendants allegedly held $1.274 million in the token USD Coin, in a digital wallet with an address the plaintiff allegedly was able to identify through the use of certain experts.

Plaintiff filed suit against unnamed defendants in the Supreme Court of the State of New York for New York County, asserting claims for conversion and money had and received, and also sought an immediate temporary restraining order and preliminary injunction against those defendants essentially freezing and barring any sale, conveyance, transfer, disposal, processing, routing, or encumbrance of any of their assets, tangible or intangible, including any USD Coin held in the wallet with the identified address.

But how to serve the summons, complaint and the order to show cause seeking the preliminary injunction and TRO against defendants whose names and locations were unknown, so as to obtain the requested relief? Plaintiff's counsel came up with an innovative solution. They requested and obtained permission from the court to effect service of the papers by "airdropping" an electronic token containing a link to a copy of the papers into the known wallet address where the $1.274 million worth of USD Coin was being held.

Specifically, the court ordered that service of the papers be made "upon the person or persons controlling the [wallet] Address via a special-purpose Ethereum-based token (the Service Token) delivered-airdropped into the Address." The order specified that "[t]he Service Token will contain a hyperlink (the Service Hyperlink) to a website created by [plaintiff's counsel], wherein Plaintiff's attorneys shall publish this Order to Show Cause and all papers upon which it is based." The order further provided that "[t]he Service Hyperlink will include a mechanism to track when a person clicks on the Service Hyperlink." The order provided that if such steps were followed, "[s]uch service shall constitute good and sufficient service for the purposes of jurisdiction under NY law on the person or persons controlling the Address."

The London Order

Only weeks after the New York order authorized service by airdropping a token into a wallet address linked to otherwise unidentified defendants, a London court endorsed a similar approach in *D'Aloia v. Person Unknown and Others*, [2022] EWHC 1723 (Ch) (June 24, 2022).

In that case, the plaintiff alleged he had been scammed into transferring $2.175 million in cryptocurrency assets from his digital wallet to a fraudulent, Hong-Kong registered company that allegedly had impersonated a well-known U.S.-regulated trading platform. The plaintiff brought suit for fraudulent misrepresentation, deceit, unlawful means conspiracy, and unjust enrichment. However, the defendants were all unnamed and their location was unknown, apart from than some evidence that the individuals behind the impersonating website might be domiciled in Hong Kong.

The plaintiff made an "application for service by an alternative method or at an alternative place" against the primary unknown defendant, seeking to make service both by email and "by what is called the 'non-fungible token', which is a form of airdrop into the [impersonating website] wallets in respect of which the claimant first made his transfer to those behind the [impersonating] website."

The London court, conceding that it "may not have expressed [itself] very happily," explained that according to the plaintiff's counsel: "this is a novel form of service, and has explained to me that its advantage is that, in serving by Non-Fungible Token (NFT) the claimant will, what she described as 'embrace the Blockchain technology', because the effect of the service by NFT will be that the drop of the documents by this means into the system, will embed the service in the blockchain."

The court concluded that "[t]here can be no objection" to this proposed manner of service. Rather, it said, "it is likely to lead to a greater prospect of those who are behind the [impersonating] website being put on notice of the making of this order, and the commencement of these proceedings." Thus, "in this particular case, it is appropriate for service to be effected by NFT in addition to service by email" against the

unknown defendants, although the court noted that it would not "think it is appropriate," had it been asked, to make an order for such "without serving by email as well."

Practical Mechanics: What Exactly Gets Served, and Where, and How?

Under both the New York and London orders, the papers were served in the form of an "NFT"—a "non-fungible token." "The term nonfungible token (NFT) usually refers to a cryptographic asset on the blockchain that represents an intangible and unique digital item." See "How to create an NFT: A guide to creating a nonfungible token," Cointelegraph. While NFTs are often used in connection with digital embodiments of art, music or collectibles, they can be used to embody or represent any kind of digital file, in a wide variety of use cases. See id.; see also Robyn Conti & John Schmidt, "What Is an NFT? Non-Fungible Tokens Explained," Forbes Advisor (April 8, 2022); Rakesh Sharma, "Non-Fungible Token (NFT)," Investopedia (June 22, 2022); Michael Adams, "How To Buy NFTs," Nasdaq (Aug. 12, 2022).

Guidance is available online for how to create (or "mint") an NFT and place it in a wallet in a blockchain platform. See Cointelegraph, supra. NFTs are most commonly created on the Ethereum blockchain.

In the *LCX* case in New York, the NFT used for service contained a hyperlink (the Service Hyperlink) to a location on plaintiff's counsel's website (the Service Webpage) where the papers being served (the Service Documents) could be found. In the *D'Aloia* case in London, the court's order did not make clear whether the NFT contained a digital copy of the actual papers being served or simply a link to a location where they could be found.

In the New York case, once the Service Hyperlink was created and tested to confirm that it would provide access via the Service Webpage to the Service Documents, the next step was the creation of the token that would be airdropped to effectuate service (the Service Token). According to a supporting affidavit submitted to the court, an attorney at plaintiff's counsel's firm who was "a Solidity programmer, the computer language used for smart contracts published on the Ethereum blockchain, … created the Service Token" by "creat[ing] a smart contract to mint an ERC-721 non-fungible token (the Service Token) and published the smart contract on the Ethereum blockchain." The affidavit further explained that the "Service Token include[d], in the name of the Token itself, the Service Hyperlink."

The next step in effectuating service was the airdrop. An "airdrop" is a process by which blockchain tokens (such as NFTs or cryptocurrency tokens) can be distributed directly into the digital wallets of one or more individuals whose wallet addresses are known, without any initiating action required on the part of the wallet owner. See generally Christian Vos, "What is a crypto airdrop, and how does it work?," Cointelegraph (July 14, 2022); see also Jake Frankenfield, "Cryptocurrency Airdrop," Investopedia (June 14, 2022); Andrey Sergeenkov, "What Is a Crypto Airdrop?," Coindesk (Jan. 18, 2022); Alex W. Gomez, "What Is an NFT Airdrop and How Does it Work?," CyberScrilla.com. While airdropping is commonly used by brands to send gifts and promotional rewards to their NFT holders, similar to a coupon, it can be used for other purposes, see id., such as service of papers.

According to the programmer-attorney's supporting affidavit in the New York case, after creating the Service Token the attorney "minted the Service Token and airdropped it to Ethereum blockchain" at a specified address for the digital wallet to which the identified stolen crypto had been traced. According to the affidavit, "[a]nyone with access to a blockchain explorer like Etherscan can verify the existence of the Service Token, that the Service Hyperlink is included in the Token's name, and that the Token was delivered to the Address" on the specified service date.

Of note in the context of serving litigation papers through airdropped tokens is that wallet holders generally cannot block their wallets from receiving airdropped tokens, although it remains the holder's decision whether to interact with the airdropped token or ignore it. As the order to show cause in *LCX* noted, however, a hyperlink used in an airdropped token can be programmed to track if and when the recipient clicks on it, thus providing evidence that the recipient has gotten actual notice to some extent of the hyperlinked papers being served.

Ingenious, But Is It Legal and Constitutional?

The New York and London court orders, while admittedly ingenious, raise provocative considerations. Most fundamental is the lack of any express authorization for serving papers by airdropping NFTs into the digital wallets of unidentified individuals under governing procedural statutes such as CPLR Article 3 or Fed. R. Civ. P. 4. Is there a basis for courts to authorize service by such methods? Can service via NFT be considered reliable given the potential for the defendant never to receive actual notice (e.g., if the receiving wallet is not regularly checked, or if the recipient simply declines to interact with an airdropped token from an unknown source)? Is such service constitutional?

Fourteenth Amendment prohibitions against depriving persons "of life, liberty, or property, without due process of law" are understood to require plaintiffs to give defendants proper notice of claims brought against them in order for the proceeding to result in a valid judgment. Individual jurisdictions typically have statutes or rules that specify acceptable methods of service.

"Personal service of written notice within the jurisdiction is the classic form of notice always adequate in any type of proceeding," *Mullane v. Central Hanover Bank & Trust Co.*, 339 U.S. 306, 313 (1950), and indeed are expressly recognized in both New York and federal practice. CPLR 308(1); Fed. R. Civ. P. 4(e)(2)(A). But "[p]ersonal service has not, in all circumstances, been regarded as indispensable to the process due to residents, and it has more often been held unnecessary as to nonresidents." *Mullane*, 339 U.S. at 314.

In recognition that delivering papers to a defendant in person is not always possible and is not the only possible method of providing constitutionally acceptable notice, statutes and rules provide for various means of what is referred to as "substituted service." For example, New York and federal law uphold making service through the defendant's designated agent. CPLR 308(3), 318; Fed. R. Civ. P. 4(e)(2)(C). They also allow service to be made by delivering the papers to a person "of suitable age and discretion" at the defendant's "dwelling" or "usual place of abode," CPLR 308(2); Fed. R. Civ. P. 4(e)(2)(B), although New York also then requires a follow-up mailing and federal practice requires that the person receiving the papers at the defendant's home actually "reside" there. Moreover, the envelope used for the follow-up mailing in New York must not indicate "that the communication is from an attorney or concerns an action against the person to be served," CPLR 308(2), presumably to avoid dissuading the recipient from opening it.

New York law goes on to expressly authorize other methods of substituted service. When several attempts at "leave and mail" service attempted on different days and at different times of day prove unsuccessful, the plaintiff may be able to proceed through "nail and mail" service by "affixing" the papers to the door of the defendant's residence and then performing a follow-up mailing. CPLR 308(4). In certain circumstances, New York may permit service to be made "by publication" in newspapers. E.g., CPLR 314-315.

Service by publication under New York law upon defendants who could not otherwise be identified or located (in that case a class of unknown beneficiaries of a trust fund with unknown addresses) was upheld as constitutionally sufficient by the U.S. Supreme Court in *Mullane*. Justice Robert Jackson noted that "[a] construction of the Due Process Clause which would place impossible or impractical obstacles in the way could not be justified." 339 U.S. at 313-14. However, "[a]gainst this interest of the State, we must balance the individual interest sought to be protected by the Fourteenth Amendment," namely "the opportunity to be heard" after being "informed that the matter is pending" so that the defendant "can choose for himself whether to appear or default, acquiesce or contest." Id. at 314.

Noting that the Supreme Court "has not committed itself to any formula achieving a balance between these interests," Justice Jackson stated that what due process requires is "notice reasonably calculated, under all the circumstances, to apprise interested parties of the pendency of the action and afford them an opportunity to present their objections." Id.; accord, e.g., *Contimortgage Corp. v. Isler*, 48 A.D.3d 732, 853 N.Y.S.2d 162 (2d Dep't 2008).

In recognition of the flexibility that may sometimes be needed to balance the plaintiff's need for a remedy and an enforceable judgment against the defendant's due process right to notice

and an opportunity to be heard, New York law contains a catch-all authorization in CPLR 308(5) for other means of substituted service, providing that service may be made "in such manner as the court, upon motion without notice, directs, if service is impracticable" under the expressly enumerated statutory service methods. Other jurisdictions have similar "catch-all" authorizations to fashion special service methods when service by any of the standard means simply is not feasible. E.g., N.J. Ct. R. 4:4-4(b)(3); 735 Ill. Comp. Stat. 5/2-203.1; Tex. R. Civ. P. 106(b)(2).

The court in *LCX* noted various points that supported the plaintiff's use of an alternative service method under CPLR 308(5): The plaintiff had presented "some evidence that the stolen assets belong to plaintiff." Plaintiff submitted various expert reports "support[ing] its contention that it knows the location of the account where its purloined funds have been deposited, but it has no information, and can have no such information, as to where the Doe Defendants, who belong to that account, are located," noting that "[a]lmost immediately after the theft, Defendants used a variety of techniques to disguise their tracks and to conceal the trail of transactions that followed in the aftermath of the theft from Plaintiff." The *LCX* court thus found that "plaintiff has established that it is impossible for LCX to serve the Doe Defendant(s)" via ordinary service methods. Moreover, it concluded, "alternate [sic] service is especially necessary because of the anonymity of the Doe Defendants." The court further noted that CPLR 308(5) does not require "proof of actual prior attempts to serve a party" under more conventional statutory service methods before resort to alternative service methods can be authorized.

The New York court further found that serving the defendants via airdropped NFT was "reasonably calculated, under all of the circumstances, to apprise the defendant of the action." It noted plaintiff's showing that "the Doe Defendants regularly use the blockchain address and have used it as recently as" the week before the issuance of the order to show cause, and that "[s]ince the account contains nearly $1.3 million US Dollar Coin, plaintiff has shown that the Doe Defendants are likely to return to the account where they would find the Service Token." The court thus concluded that communication through that account "is effectively the digital terrain favored by the Doe Defendants" and in fact "the only available manner of communication" with them. Accordingly, "the court finds that plaintiff has sufficiently authenticated the method of communication" and granted plaintiff's motion to confirm that "the service by the Service Token satisfied CPLR 308(5)."

Taking Advantage of New Technology

Against the backdrop of these constitutional principles, case law demonstrates that technology's rapid advancement and integration into our daily lives has created the possibility of effectuating service of process through new technological means and platforms in appropriate cases when other prescribed methods are proven impracticable under the circumstances.

For example, in *Smith v. Islamic Emirate of Afghanistan*, 2001 WL 1658211 (S.D.N.Y. Dec. 26, 2001), the court allowed the estate of an individual killed in the Sept. 11, 2001 World Trade Center attack to use television to effectuate service of process to serve process on the Islamic Emirate of Afghanistan, the Taliban, Al Qaeda, and Osama Bin Laden, noting that these defendants were "not amenable to service by any of the prescribed methods set forth in [the Federal Rules]" because their locations are unknown and will not likely be known for some time. The court thus authorized service of process through a combination of newspaper publication and television broadcast.

Service of process by email likewise has been authorized in various cases when traditional service methods were unfeasible. In *Hollow v. Hollow*, 193 Misc.2d 691, 747 N.Y.S.2d 704 (Sup. Ct. Oswego Co. 2002), for example, the plaintiff sought to divorce her husband, who had moved to Saudi Arabia and only contacted the plaintiff via email. The location of his residence was unknown and personal service to the compound in which he worked would expose the process server to criminal liability. The court held service through the defendant's last known email address sufficient under CPLR 308(5). See also *Ryan v. Brunswick*, 2002 WL 1628933 (W.D.N.Y. May 31, 2002); Anastazia Sienty, *E-Mail Service in New York State*, 36 Pace L. Rev. 998 (2016).

More recently, service of process via social media has emerged and gained acceptance. In *Baidoo v. Blood-Dzraku*, 48 Misc.3d

309, 5 N.Y.S.3d 709 (Sup. Ct. N.Y. Co. 2015), for example, a New York court authorized as the sole means of service upon the defendant sending a private message though Facebook. In that case, the plaintiff wanted to divorce her husband but he had no fixed address or place of employment and the Department of Motor Vehicles had no record of him. The court held that "service by Facebook, albeit novel and non-traditional," not only satisfied due process but "every indication is that it will achieve what should be the goal of every method of service: actually delivering the summons to him."

Other courts have likewise endorsed social media service in appropriate circumstances, See, e.g., *Rule of Law Soc'y v. Dinggang*, 2022 WL 1104004 (Sup. Ct. N.Y. Co. April 8, 2022) (authorizing CPLR 308(5) service via WhatsApp and Twitter accounts); see generally Emily Davis, *Social Media: A Good Alternative, For Alternative Service of Process*, 52 Case W. Res. J. Int'l L. 573 (2020); Alyssa L. Eisenberg, *Keep Your Facebook Friends Close and Your Process Server Closer: The Expansion of Social Media Service of Process to Cases Involving Domestic Defendants*, 51 San Diego L. Rev. 779 (2014).

Concerns in Authorizing Service by Airdropped NFTs

While serving process by airdropping NFTs into digital wallets may seem the natural extension of these precedents, such methods can pose concerns in particular cases about whether they are truly adequate to fulfill the practical and constitutional reasons behind requiring formal methods of service. The more insulated a technology is from contact with a known human being, the more weight such concerns may present.

For example, courts have noted that service through social media accounts can raise concerns about authenticity. As one New York federal court observed, "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 social media account belongs to the defendant. *Fortunato v. Chase Bank USA*, 2012 WL 2086950 (S.D.N.Y. June 7, 2012). Without such authentication, giving notice through a social media account might not meet *Mullane*'s due process standards because it may not be "reasonably calculated" to "appraise" to defendant of the action. See id.

Thus, courts show willingness to authorize service of process via social media when the plaintiff provides "facts that supply ample reason for confidence that the [social media] accounts identified are actually operated by defendants." *FTC v. PCCare247*, 2013 WL 841037 (S.D.N.Y. Mar. 7, 2013) (allowing service though Facebook where plaintiffs showed the Facebook accounts were registered with defendants' known email addresses, listed defendants' job titles at the defendant companies, and the defendants were "friends" with each other on the platform). Will plaintiffs trying to effectuate service of process via airdrop face the same authenticity burdens?

Another concern is that, as noted in *Baidoo*, if the "defendant is not diligent in logging on to his Facebook account, he runs the risk of not seeing the summons until the time to respond has passed." Similarly, there is no guarantee about when or how often the defendant might check a digital wallet that has been used in the past, and whether the defendant will choose to interact with or ignore an NFT airdropped into that wallet from an unknown source for unknown reasons. In the airdropped NFT context, must the court evaluate the likelihood that the defendant will open the digital token and ultimately read the papers, since *Mullane* directs courts in evaluating proposed methods of service to seek assurance that a defendant will receive actual notice of the lawsuit?

In *LCX*, the court authorized service through an NFT that contained a trackable link. This at least allows the serving counsel to confirm whether or when the unknown defendants ever click open the link and thus get actual notice of the lawsuit. The court in fact noted that not long after the airdrop "statistics for the Service Hyperlink … confirmed that … the Service Hyperlink had been clicked by 256 unique non-bot users," and that attorneys had emerged to enter appearances on behalf of the unnamed Doe defendants.

But must such service be deemed so speculative or unreliable that it cannot be held effective until such time (if ever) that the link is in fact clicked? Will service by airdrop always need to be trackable to be sufficient?

More conventional and routinely accepted means of substituted service often themselves rest upon assumptions about likelihoods, rather than upon confirmation of successful delivery to defendant. CPLR 308(2) "leave and mail" service,

for example, rests on the assumption that it is likely the "person of suitable age and discretion" will in fact give the papers to the defendant, rather than dropping them in a pile of other mail in the kitchen where the defendant might never see them. It also assumes the defendant will in fact open the follow-up mailing from an unidentified sender rather than discard it as seemingly being junk mail. Proof that these steps led to actual receipt and notice by the defendant is not required. The New York Court of Appeals has noted that "[o]ur law has long been comfortable with many situations in which it was evident, as a practical matter, that parties to whom notice was ostensibly addressed would never in fact receive it." *Dobkin v. Chapman*, 21 N.Y.2d 490, 502 (1968). Thus, as the court stated in *LCX*, an alternative service method "is not a guarantee of notice to the intended recipient."

Another possible concern is that, even if the wallet address proposed to be used for service was associated with anonymous wrongdoing defendant at some point in time and was actually involved in the commission of the wrongs giving rise to the plaintiff's claim, is it proper to assume that the anonymous wrongdoer and no one else will have access to that wallet for all time going forward? Could the wallet be shared or transferred, particularly if the defendant is seeking to cover his tracks and launder his ill-gotten proceeds? Must service through digital wallets be limited only to wallets known to be connected to subject matter of the plaintiff's claims, or can it be appropriate to make service by airdropping NFTs into wallets in any kind of case, so long as there is sufficient evidence (e.g., from blockchain analytics) that the wallet in fact belongs to the defendant?

Conclusion

Courts have acknowledged that "where defendants have 'zealously embraced' a comparatively new means of communication, it comports with due process to serve them by those means." *FTC v. PCCare247*, 2013 WL 841037, at *5 (internal citations omitted). Mullane teaches that when faced with a lack of feasible alternatives, courts may authorize non-standard methods of substituted service that are "reasonably calculated, under all the circumstances, to apprise interested parties of the pendency of the action and afford them an opportunity to present their objections."

These early orders seen from the New York and London courts suggest that today's world of cryptocurrency and digital assets can provides an additional way for plaintiffs to serve defendants when the facts and circumstances justify it—particularly when it is through that world that the plaintiff was wronged, and when it is the anonymous nature of that world that gives rise to plaintiff's difficulties in identifying and serving the wrongdoing parties through standard means. As such cases of wronged plaintiffs continue to arise, the courts are likely to have to address the legal and constitutional issues posed by substituted service through airdropped NFTs in greater depth.