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Renato Mangano
University of Palermo

CRYPTOCURRENCIES, CYBERSECURITY AND BANKRUPTCY LAW: How Global Issues are Globalizing National Remedies

Renato Mangano[1]

[1] Renato Mangano is Professor of Commercial Law at the University of Palermo, Palermo, Italy (renato.mangano@unipa.it). This paper refers to homepages and other Internet resources. These are assumed to have been retrieved on 31st December 2019.

Abstract

The market for cryptocurrencies is interspersed with cases of loss, theft and fraud and a new transnational practice in bankruptcy law is emerging whereby cryptocurrency exchanges compensate the injured users on a collective basis. This paper will argue: first, that this trend has transplanted into Asia and Europe the US idea according to which bankruptcy law can be employed to avoid mass litigation; secondly, that this trend has transcended the debate about the characterization of digital assets, including the concerns of those scholars who maintain that digital coins cannot be objects of property; and thirdly that – since this practice follows the pattern of so-called restorative justice and since cryptocurrencies are highly volatile – injured users, as creditors of the exchanges, ought to be satisfied in kind, i.e. in cryptocurrencies themselves.

I. CYBER-SCAMS, THE CIRCULATION OF LEGAL MODELS AND THE EMERGENCE OF A NEW TRANSNATIONAL PRACTICE IN BANKRUPTCY LAW

Blockchain is little more than ten years old, and cryptocurrency exchanges show an ever-increasing growth in both the number and volume of transactions.[2] The basic business of cryptocurrency exchanges consists in allowing users to exchange cryptocurrencies for other assets, such as conventional fiat money or other digital currencies. Cryptocurrency exchanges can further provide additional services. For example, sometimes they also 'mint' the currency that they themselves sell to their users, while very often cryptocurrency exchanges provide their users with accounts in cryptocurrencies. These accounts are called 'hot wallets' since they are permanently connected to the Internet. The type of cryptocurrency that is exchanged varies as well. Bitcoin was the first currency to be launched and is probably still the most frequently used in transactions. But other types of cryptocurrencies have cropped up, such as Bitcoin Cash, Ether, Litecoin, Nano, Peercoin, and so on. These cryptocurrencies are usually shorthanded as 'altcoins' since they are alternatives to Bitcoin.

[2] Blockchain was invented by Satoshi Nakamoto in 2008 to serve as the public transaction ledger of Bitcoin. In this respect, *see* Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, BITCOIN (Oct. 31, 2008), https://bitcoin.org/bitcoin.pdf. Nevertheless, this technology has implications far beyond Bitcoin and, more generally, cryptocurrencies.

Nevertheless, operations in cryptocurrencies are proving to be very risky and the media are interspersed with cases of loss, theft and fraud, [3] while some exchanges have been subject to bankruptcy law procedures or proceedings – the facts relating to *Mt. Gox*, in Japan, *BitGrail*, in Italy, and *Cubits* in the UK, are spectacular cases in point. Apparently, there is nothing new under the sun and these bankruptcy law cases could be hastily labelled as some of the many cases where a firm is distressed, and a set of bankruptcy law proceedings is opened. However, this paper will demonstrate that quite the opposite is true, that a new practice of law is emerging across national jurisdictions and that this, on the one hand, is blurring and transcending national taxonomies and, on the other hand, must be developed consequentially and consistently.[4] In particular, this paper will argue: first, that this trend has transplanted into Asia and Europe the US idea according to which bankruptcy law can be employed to avoid mass litigation; secondly, that this trend has transcended the debate about the characterization of digital assets, including the concerns of those scholars who maintain that digital coins cannot be objects of property; and thirdly that – since this practice follows the pattern of so-called restorative justice and since cryptocurrencies are highly volatile – the injured users, as creditors of the exchanges, ought to be satisfied in kind, *i.e.* in cryptocurrencies themselves.

II. THE SETTING

To our knowledge, the first bankruptcy law case concerning cryptocurrency exchanges refers to the *Mt. Gox* platform. This was a leading Bitcoin exchange based in Tokyo, Japan, handling over 70% of all worldwide Bitcoin transactions. Beginning in late 2011, this platform was

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[3] *Cryptocurrency Anti-Money Laundering Report, 2019* Q2, CIPHERTRACE (JULY 2019), https://ciphertrace.com/wp-content/uploads/2019/08/CipherTrace-Cryptocurrency-Anti-Money-Laundering-Report-2019-Q2-1.pdf (stating that in the first two quarters of 2019 alone, hackers siphoned off from exchanges and users 4.26 billion USD); *see also NASAA Marks Cryptocurrency Anniversary with a Word of Caution*, N. AM. SEC. ADM'R ASSOC. (Oct. 31, 2018), https://www.nasaa.org/46226/nasaa-marks-cryptocurrency-anniversary-with-a-word-of-caution/ (regarding the North American Securities Administrators Association's (NASAA) warning regarding the risks of operations in cryptocurrencies).

[4] For an attempt to frame and explore the concept of transnational law and, especially, for an attempt to develop a pluralistic model of law-making whereby transnational law should interact with national laws, *see* TERENCE C. HALLIDAY & GREGORY SHAFFER, TRANSNATIONAL LEGAL ORDERS 3 (2015); *see also* SUSAN BLOCK-LIEB & TERENCE C. HALLIDAY, SETTLING AND CONCORDANCE: TWO CASES IN GLOBAL COMMERCIAL LAW 5 (2015).

at the core of various cases of mismanagement, theft and fraud where approximately 850,000 Bitcoins belonging either to the corporation running the platform or to its users were lost—in 2014, the total amount of the missing coins was valued at more than 450 million USD. Beginning in 2013, users experienced significant delays, sometimes extending to months, in withdrawing cash from their accounts—protests mounted, and the users who were injured by these delays started bringing lawsuits, variously grounded, against both the corporation running the platform and its CEO. Moreover, criminal complaints against the latter began to be threatened. In the meanwhile, through press releases, the website and other online channels the CEO set up a dialogue with their users and made every effort to restore a climate of confidence in the platform. Nevertheless, on 7th February 2014, the CEO halted all withdrawals of Bitcoins and, on 28th February 2014, applied the District Court of Tokyo for the opening of a set of liquidation proceedings.[5] On 29th November 2017, those proceedings were switched into "civil rehabilitation proceedings."[6] These proceedings are still ongoing.

The second spectacular case concerning cryptocurrency exchanges refers to *BitGrail*. This was an Italian-based platform exchanging a type of cryptocurrency different from Bitcoin, called 'Nano'. Here, again, both the platform and the director of the corporation running the platform were alleged to have committed fraud and the theft of a huge amount of coins valued in 2018 at about 195 million USD, and here again the director employed every means of communication to establish a dialogue with the users in order to negotiate with them a possible solution. In particular, on 9th February 2018, the director announced that "internal checks revealed unauthorized transactions which led to a 17 million Nano shortfall", while, on 18th February 2018, a poll on Twitter was launched in order to ask the victims of the leak whether they would prefer *BitGrail* to continue its business or to close – 79% of the responding users voted in favor of the proposal to close.[7] In March 2018, *BitGrail* announced that it would promise to refund coins as long as users signed an agreement to forgo any

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[5] This case was paralleled in the US, since the corporation running the *Mt. Gox* platform had a subsidiary there. On 9th March 2014, this corporation filed for Chapter 15 bankruptcy proceedings in the US in order to halt legal actions brought by US users alleging that that exchange ran a fraudulent business. *See In re* MtGox Co. Ltd., 14-31229, (Bankr. N.D. Texas 2014).

[6] *Announcement of Commencement of Civil Rehabilitation Proceedings*, MTGOX (June 22, 2018 (updated Oct. 26, 2018)), https://www.mtgox.com/img/pdf/20180622_announcement_en.pdf.

[7] *BitGrail Bankruptcy Petition*, MEDIUM (Apr. 27, 2018), https://medium.com/@bitgrailvictims/bitgrail-bankruptcy-petition-82010316117e.

legal action.[8] Afterwards, it is not clear whether *BitGrail* wanted to apply to the court for the opening of bankruptcy proceedings but, if this was the case, the *BitGrail's* decision was not timely enough. Certainly, on 26th April 2018, a user of the platform belonging to a group of 3000 users who had been injured by the coin leak applied the District Court of Florence for the opening of two sets of liquidation proceedings against both *BG Services S.r.l.*, formerly *BitGrail S.r.l.*, and another corporation owned by the director of the former.[9] Both cases are still ongoing.

To date, the latest case in point refers to *Cubits*. This was an UK-based cryptocurrency exchange which was founded in 2015 in order to buy, sell and store different types of cryptocurrencies, such as Bitcoin, Litecoin and Bitcoin Cash. In February 2018, this platform was alleged to have lost coins for a value that, at that time, was estimated at about 32 million USD. The corporation running the platform tried to persuade their users that *Cubits* was the victim of a fraudulent operation through which a user had purchased Bitcoins without paying for them but, the reporter went on, every effort would be made to recover the lost coins and compensate the users. However, these efforts proved to be unsuccessful and new information accusing the corporation directors of fraud and theft started to circulate. On 10th December 2018, the corporation running *Cubits* blocked the users' accounts and entered into administration proceedings.[10] This procedure is still ongoing.

III. THIS TREND TRANSPLANTS THE US IDEA THAT BANKRUPTCY LAW CAN BE EMPLOYED TO AVOID MASS LITIGATION

The *Mt. Gox*, *BitGrail* and *Cubits* cases are based in different jurisdictions, follow different regulations and pose legal issues that could be framed differently in accordance with the law which is applicable in each jurisdiction. Nevertheless, if one tries to abstract them from the

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[8] *Bitgrail Plans To Refund Hacked Users With Self-Issued Token, But Not Allowed To Sue*, COINTELEGAPH (Mar. 16, 2018), https://cointelegraph.com/news/bitgrail-plans-to-refund-hacked-users-with-self-issued-token-but-not-allowed-to-sue.

[9] *Italy: Law Firm Files Bankruptcy Petition Against Hacked Crypto Exchange BitGrail*, COINTELEGRAPH (Apr. 28, 2018), https://cointelegraph.com/news/italy-law-firm-files-bankruptcy-petition-against-hacked-crypto-exchange-bitgrail.

[10] Crypto Platform Cubits Begins Insolvency Procedure After Alleged Hack, Locks Users' Funds, COINTELEGRAPH (Dec. 12, 2018), https://cointelegraph.com/news/crypto-platform-cubits-begins-insolvency-procedure-after-alleged-hack-locks-users-funds.

specificities of each national law, it is not difficult to recognize that this trend has employed bankruptcy law in order to avoid mass litigation, stop a plethora of requests for compensation and turn an unorganized mass of potential claimants into an organized group of creditors.

Certainly, this happened in the *Mt. Gox* and *Cubits* cases, where the corporations running the platforms took the initiative in starting bankruptcy proceedings and procedure, respectively; but, presumably, this would have happened also in the *BitGrail* case, where a group of creditors anticipated the CEO's decision to file for bankruptcy proceedings.

To our knowledge, there is no evidence of top-down initiatives suggesting that cryptocurrency exchanges should employ bankruptcy law to address coins leaks and compensate the injured users – as far as we know, no international agency has yet dealt with these issues. *Vice-versa*, in a world which is increasingly interconnected, especially in the IT field, it seems that the convergence of behaviors in the *Mt. Gox*, *BitGrail* and *Cubits* is not a mere coincidence but the expression of a spontaneous bottom-up movement which has transplanted into Asia and Europe the US practice according to which large firms that have inflicted mass damage file for bankruptcy proceedings pre-emptively, *i.e.* before the claims for compensation have been liquidated.[11] Here, reference is made to the *Johns-Manville Corp.* case and to many other bankruptcy law cases related to asbestos producers; and, again, to the *A.H. Robins Corporation* case, to *Dow Corning Corp.* case and, more generally, to all those cases where corporations employ bankruptcy law to address the threat of mass liability.[12]

Certainly, this statement does not mean that the US trend and the trend concerning exchanges are identical, because between the two practices there are some significant differences. First, while the US trend refers to corporations that file for restructuring proceedings, the trend concerning exchanges refers to corporations that are subject to both restructuring and liquidation proceedings (or procedures);[13] secondly, while the US trend is

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[11] Here, the use of the 'legal transplant' metaphor does not necessarily imply the acceptance of the controversial theory put forward by Alan Watson. *See* ALAN WATSON, LEGAL TRANSPLANTS: AN APPROACH TO COMPARATIVE LAW (1974).

[12] *See In re* Johns-Manville Corp., 36 B.R. 743, 744 (Bankr. S.D.N.Y. 1984); *In re* A.H. Robins Co., 880 F.2d 694, 696-97 (4th Cir. 1989); *In re* Dow Coming Corp., 211 B.R. 545, 551-54 (Bankr. E.D. Mich. 1997).

[13] While the US corporations which have been referred to filed for the restructuring proceedings laid down by Chapter 11 of the US Bankruptcy Code, the corporations running the exchanges were subject to both liquidation proceedings (*Mt. Gox* and *BitGrail*) and a

supported by a regulation which facilitates this practice, the trend concerning exchanges is covered by no regulation specifically devoted to the issue in question; [14] thirdly, while the US trend refers to corporations that have inflicted tort damages, the trend concerning exchanges refers to an economic disaster which have occurred in a legal context that is still unsettled and where courts—whether they belong to Common-law or Civil-law jurisdictions—are engaged in a process of law-making from the bottom-up. This point will be dealt with in the next sections.

IV. THIS TREND TRANSCENDS THE DEBATE ABOUT THE CHARACTERIZATION OF DIGITAL COINS AND ASSUMES THAT THE EXCHANGE-USER RELATIONSHIP IS SIMILAR TO THE BANK-CUSTOMER RELATIONSHIP

To date, the nature of cryptocurrency is very uncertain and it is highly controversial whether digital coins are 'property'.[15] This is because most statutes follow a thing-ownership concept of property according to which the right of property refers, as a general rule, to tangible items, both immovable and movable, and, exceptionally, to those items which—because of an explicit choice of policy—are objects of so-called intellectual property. This was the situation in Japan, when the court of Tokyo dealt with the *Mt. Gox* case; [16] but this was also the situation in both the UK and Italy, where most experts in property law maintain that their jurisdictions appear to have no room for a third type of property which

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type of procedure claimed to be the English equivalent of a reorganization under Chapter 11 of the US Bankruptcy Code (*Cubits*). But, on the ambiguity of the nature and purpose of "administration," *see* ROY GOODE, PRINCIPLES OF CORPORATE BANKRUPTCY 393-406 (4th ed. 2011).

[14] Here, reference is made to both the elimination from the US Code of any requirement that the debtor intending to file for bankruptcy proceedings must be insolvent and to the expansion of the scope definition of 'claim'. For this evolution of US bankruptcy law, *see* DAVID A. SKEEL, DEBT'S DOMINION: A HISTORY OF BANKRUPTCY LAW IN AMERICA 217 (2001); *see also* Alan N. Resnick, *Bankruptcy as a Vehicle for Resolving Enterprise-Threatening Mass Tort Liability*, 148 U. Pa. L. Rev. 2045 (2000).

[15] NIELS VANDEZANDE, VIRTUAL CURRENCIES: A LEGAL FRAMEWORK 4 (2018) (quoting the different positions held by the Texas District Court, the German Federal Financial Supervisory Authority (BaFin) and the US Internal Revenue Service (IRS), respectively).

[16] Koji Takahashi, *Implications of the Blockchain Technology for the UNCITRAL Works*, UNITED NATIONS COMM'N ON INT'L TRADE L. (2017), https://www.uncitral.org/pdf/english/congress/Papers_for_Programme/30-TAKAHASHI-Implications_of_the_Blockchain_Technology_and_UNCITRAL_works.pdf (presented at the congress of the United Nations Commission on International Trade Law (UNCITRAL), Vienna 4–6 July 2017).

would refer to intangibles but would not meet the prerequisites required to be characterized as intellectual property.[17] To our knowledge, moreover, scholars around the globe have not adequately dealt with the characterization of the relationship existing between the exchange and their users, which conceptually depends on both the characterization of digital coins and the value that the interpreter intends to give to the service provided by the exchanges.

Nevertheless, confronted with such crucial issues, the courts and/or practitioners dealing with the *Mt. Gox, BitGrail* and *Cubits* cases seem to have transcended these debates and, whether explicitly or implicitly, have assumed: first, that the concept of property which is employed to delineate the bankruptcy estate is wide enough to include digital coins; secondly, that the relationship existing between the exchanges and their users mirrors the relationship existing between a bank and its customers.[18] This position emerges in a clear-cut way form the *BitGrail* decision, where the Court of Florence ruled that the exchange was the owner of the coins deposited, while the users have only the right to withdraw an equivalent amount of them;[19] but this position is equally clear in the *Mt. Gox* case, where the Court of Tokyo invited the injured users to lodge their claims in the proceedings so that they could receive a compensation on a *pari passu* basis.[20]

Probably, in some jurisdictions, these cases can be regarded as clashing with the law in the book. However, if these cases are abstracted from the specificities of each national law, they seem expressions of a bottom-up process of law-making whereby debtors, courts and practitioners try to fill the gaps in their own jurisdictions on the basis of efficiency and, especially, with a view to achieving a desired outcome – here, the desired outcome consists in allowing the injured users to participate in the distribution of the debtor's estate as debtor's creditors

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[17] For the situation in the UK and Canada, *see* Janis Sarra & Louise Gullifer, *Crypto-claimants and Bitcoin Bankruptcy: Challenges for Recognition and Realization*, 28 INT'L INSOLVENCY REV. 233, 242 (2019); but for the situation in Italy, *see* Renato Mangano, *The Bankruptcy of Cryptocurrency Exchanges: Lessons from the BitGrail Case — Reification of Coins, Pari Passu Ranking, and Nominalism*, 35 BANKING & FIN. L. REV. 197 (2019).

[18] For the bank-customer relationship, *see* SIR ROSS CRANSTON ET AL., PRINCIPLES OF BANKING LAW 190-91 (3d ed. 2017).

[19] Trib. Firenze, January 21, 2019, n. 18, pp. 5-20. The text of this ruling is available, in Italian, at: www.coinlex.it/wp-content/uploads/2019/01/Sentenza_Fallimento_Bitgrail.pdf. A translation into English is available at: https://medium.com/@bitgrailvictims/court-decision-by-the-court-in-florence-jan-21-20-c6d0c3e4247c.

[20] *See* MtGox, *supra* note 6.

and, consequently, to obtain a compensation on a *pari passu* basis.[21] For example, the idea that the concept of property which is employed to delineate the bankruptcy estate must be wide enough to include digital coins corresponds to a pragmatic approach according to which bankruptcy law should treat as an asset anything, tangible or intangible, that has commercial value, *e.g.* licenses, landing slots, radio spectrum, and so on, regardless of its pre-bankruptcy characterization.[22] Similarly, the idea of considering the relationship existing between an exchange and its users as being parallel to the relationship existing between a bank and its customers mirrors the real economic nature of most operations of this kind—the Court of Florence has demonstrated that the exchange periodically transferred the coins from the users' accounts to a central account where the coins were commingled; that the exchange employed these coins for its own purposes; and that, when the users wanted to withdraw their coins, the exchange satisfied their requests by returning not the very same coins that had been deposited but only an equivalent quantity of them.[23]

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[21] This practice has also simplified the setting from the point of view of private international law. To our knowledge these cases have not given rise to doubts about jurisdiction and law applicable, even though these cases had a cross-border dimension – certainly, the corporations running the exchanges were liable towards users who/which had legal connections with countries that were different from those to which those corporations had their main connections. Moreover, as regards the cryptocurrencies, as intangible assets, these were localized in those countries where the corporations running the exchanges were based, probably because it was exactly there that these were regarded as recoverable. This approach, which seems pragmatic and consistent with the architecture of exchanges, has transcended the taxonomies of Art. 2.9 of EU Regulation 2015/848 regulating cross-border aspects of insolvency proceedings in the European Union, with the exception of Denmark. In effect, Art. 2.9 of EU Regulation 2015/848, which contains a set of rules aiming at better localizing the debtor's assets, does not provide a specific criterion to localize digital assets. Regulation (EU) 2015/848 of the European Parliament and of the Council of 20 May 2015 on insolvency proceedings, 2015 O.J. (available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2015.141.01.0019.01.ENG).

[22] For example, for the concept of "property" within the English and Welsh Bankruptcy Act 1986, and for its broad interpretation, *see* ROY GOODE, PRINCIPLES OF CORPORATE BANKRUPTCY 180-81 (4th ed. 2011).

[23] Trib. Firenze 18/2019, *supra* note 19 at 5-20.

V. THIS TREND BLURS THE DISTINCTION BETWEEN BUSINESS BANKRUPTCY LAW AND PERSONAL BANKRUPTCY LAW AND INTRODUCES A NEW PRACTICE IN RESTORATIVE JUSTICE

David A. Skeel maintains that "[b]ankruptcy law in the United States is unique in the world". This is so not only because "the U.S. bankruptcy law is far more sympathetic to debtors than are the laws of other nations", but because US bankruptcy law proceedings are conceived as multi-purpose devices whereby debtors can solve any sort of legal problem having huge dimension. In this respect the above-quoted author inter alia states: "Texaco had been slapped with the largest jury verdict ever, a $10.53 billion judgement to Penzoil for interfering with Penzoil's informal agreement to purchase Getty Oil. When Texaco filed for bankruptcy, no one thought for a moment that the giant oil corporation would be shut down and its assets scattered to the winds. Texaco filed for bankruptcy preemptively, to halt efforts by Penzoil to collect on the judgement and to force Penzoil to negotiate a settlement."[24] Nevertheless, this specificity of US bankruptcy law does not prevent an observer – especially from outside the US – from wondering whether the exchanges cases fit perfectly into the taxonomy of business bankruptcy law, or whether they have something that lies outside this taxonomy; and, finally, whether these cases have something in common with cases where an over-indebted consumer files for bankruptcy law proceedings to discharge his or her debts.[25]

At first glance, the cases referring to cryptocurrency exchanges fit perfectly into the taxonomy of business bankruptcy law. This is because in all the cases in question there is a corporate debtor running a business; this debtor is unable to pay its debts to its creditors, *i.e.* to give back to the users of the platform the 'coins' that was kept in its accounts; and there is a need for a debt-collection device aiming at preventing its creditors from grabbing its assets and at distributing these among its creditors according

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[24] DAVID A. SKEEL, DEBT'S DOMINION: A HISTORY OF BANKRUPTCY LAW IN AMERICA 1 (2001).

[25] This paper employs the distinction between 'business bankruptcy law' and 'consumer bankruptcy law' with no specific reference to either a specific jurisdiction or a specific theory of bankruptcy law. In effect, the distinction between 'business bankruptcy law' and 'consumer bankruptcy law' may have a different value according to the theoretical approach to bankruptcy law that is held. This is because the more an approach to bankruptcy law is procedurally oriented and the more it stresses the role of bankruptcy law as a debt-collection device, the less significant the distinction between 'business bankruptcy law' and 'consumer bankruptcy law' proves to be.

to so-called distributive justice. This theory of justice holds that assets should be allocated according to the maxim: "to give to each his own" (*suum cuique tribuere*). Therefore, if the debtor's assets are insufficient to satisfy the creditors' claims, the distribution should observe the *pari passu* principle.

However, if one analyses the cases in question in greater depth, one will realize that the bankruptcy law proceedings that have been opened against cryptocurrency exchanges do not fit perfectly into the taxonomy of business bankruptcy law: first, because in all cases the debtor's bankruptcy originates from mismanagement, theft and fraud;[26] secondly, and more importantly, because in all cases the debtors are striving to lower tensions, improve communications, encourage victims to explore potential solutions and find a mutually acceptable outcome. The specificities of the bankruptcy of exchanges clearly emerge in the *Mt. Gox*, *BitGrail* and *Cubits* cases, where the directors and officers of the corporations running the platforms, on the one hand, were alleged to have stolen the coins and, on the other hand, tried to restore confidence in their businesses and to settle the disputes amicably. For example, in this respect it is worth noting that the officers and directors of both *Mt. Gox* and *BitGrail* kept the platform users constantly informed about the leak of coins, the amount lost and the amount found, while the director of *BitGrail* launched a Twitter poll asking the users whether they would prefer *BitGrail* to continue business or to close, and tried to reach an agreement with the injured users.

In certain respects, these features make the practice of bankruptcy law proceedings opened against cryptocurrency exchanges similar to the practice of consumer bankruptcy law where, especially in some jurisdictions, distributive justice (which is typical of bankruptcy law) is supplemented or even replaced by so-called restorative justice according to which an 'honest but unfortunate' overindebted individual is allowed to arrange a settlement with his or her creditors in order to swap with them a partial satisfaction of their claims for the total discharge of his or her liabilities.[27] Certainly, the bankruptcy of cryptocurrency exchanges does

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[26] *See above*, section II.

[27] Restorative justice is a recent approach to justice whereby a wrongdoer negotiates with his or her victims for a resolution that would satisfy all the participants in a negotiation. Originally, this approach was regarded either as an alternative to criminal law or as a response to crime that supplemented criminal law. However, restorative justice was gradually expanded to other areas of law where its actual content may vary according to the nature of each particular case. *See* John Braithwaite, Restorative Justice and Responsive Regulation 10 (2002) ("[r]estorative justice is most commonly defined by what it is an alternative to.").

not fit into the taxonomy of consumer bankruptcy law either – in the former, the debtor is a corporation whose officers and directors are accused of, or even charged with, mismanagement, theft and fraud, while, in the latter, the debtor is an honest, overindebted consumer. Nevertheless, it is unquestionable that, in a manner similar to some procedures and proceedings aiming at discharging individual overindebted debtors, the practice of opening bankruptcy procedures and proceedings against an exchange should be based primarily and exclusively on the debtor's willingness (or, to be more precise, on the willingness of the debtor's officers and directors) to cooperate with its creditors and to find a mutually acceptable solution. In fact, in all cases concerning exchanges, only the debtor's officers and directors have the secret codes which are necessary in order to track any transfer of cryptocurrency, find the missing coins[28], modify the algorithm[29] and satisfy the injured users.[30]

In Europe, some Member States adopt restorative justice to allow over-indebted debtors to discharge his or her liabilities by taking advantage of Directive 2008/52/EC of the European Parliament and of the Council of 21 May 2008 on certain aspects of mediation in civil and commercial matters (available at https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0052). For example, this is the case of Spain, where Royal Decree 231/2008 regulates the consumer arbitration system (Sistema Arbitral de Consumo), which is a form of out-of-court conciliation between an overindebted debtor and his or her creditors facilitated by a third party. Decreto Real Español 231/2008, de 15 de febrero, por el que se regula el Sistema Arbitral de Consumo.

As it regards the role of communication as a means to establish a dialogue with the victims of a mass tort, *see* Jack B. Weinstein, Individual Justice in Mass Tort Litigation 46-52 (1995) (referring to the debate that the German philosophers Jürgen Habermas and Karl-Otto Apel triggered in the US when proposing the so-called "discourse ethics").

[28] Since their inception, cryptocurrencies have been regarded as forms of currency that can be transferred in an anonymous way. However, recently software has been built that can track the movement of coins and help law enforcement. For further information, *see* Matthew Hrones, *Yes, Your Bitcoin Transactions Can Be Tracked — And Here Are The Companies That Are Doing It*, Bitcoinist (June 28, 2018) https://bitcoinist.com/yes-your-bitcoin-transactions-can-be-tracked-and-here-are-the-corporations-that-are-doing-it/.

[29] This strategy is called 'hard fork'. In this respect, the UK Financial Conduct Authority (FCA) reports that '[t]he DAO was a group of individuals who agreed to interact on the basis of a code that was executed on the Ethereum protocol. The code enabled investors to participate in a self-directed venture capital fund, without the need for an investment manager. Security flaws in the code enabled a malicious third party to siphon funds from the DAO, resulting in substantial losses to investors. To resolve the issue, the Ethereum foundation's core developers resolved to create a "hard fork", effectively reversing the transactions in order to restore investors to their original position.' *See* FIN. CONDUCT AUTH., DISCUSSION PAPER ON DISTRIBUTED LEDGER TECHNOLOGY (April 2013), https://www.fca.org.uk/publication/discussion/dp17-03.pdf.

[30] Certainly, this statement holds good for the *Mt. Gox* and *Cubits* cases, where the debtors voluntarily entered bankruptcy proceedings and procedure, respectively. By contrast, theoretically this statement does not hold good for the *BitGrail* case where the petition was

VI. A PROPOSAL: SINCE THIS PRACTICE FOLLOWS THE PATTERN OF RESTORATIVE JUSTICE AND SINCE CRYPTOCURRENCIES ARE HIGHLY VOLATILE, CREDITORS OUGHT TO BE SATISFIED IN KIND

The statement according to which the trend in question follows restorative justice is not of theoretical interest only but must be seriously taken into account when determining the treatment of the injured users as creditors of the corporations.

This point requires further explanation. Usually, those creditors who intend to participate in the distribution of the bankruptcy estate in liquidation proceedings are required to submit a formal request to the trustee and to convert their non-monetary claims into monetary claims in accordance with an evaluation made at the time of the opening of proceedings. This point in time crystallizes the value of the claims for the whole duration of the proceedings – at most, these claims could continue to yield interest according to the law which is applicable.

Theoretically, the creditors injured by the lost coins should also perform this conversion, since there is no country where cryptocurrency has status of legal tender. However, this operation could prove disastrous since cryptocurrencies are highly volatile with the result that between the date of the opening of bankruptcy proceedings and the date of estate distribution the value of the cryptocurrency could either appreciate or depreciate dramatically – for example, this happened in the *Mt. Gox* case, where from 2014 to 2018 the total value of the lost units of Bitcoin increased from about 450 million USD to about 6 billion USD.

The trustee appointed to the *Mt. Gox* proceedings grasped this issue very well and, for this reason, decided to neutralize the risk of the fluctuation of Bitcoin by switching the set of liquidation proceedings that

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filed by a creditor. However, the difference between the two sets of cases seems more apparent than real. In fact, without the cooperation of the director of the corporation running *BitGrail* the bankruptcy trustee appointed to the case would not have been able to recover the missing coins and return them to the injured users. On this feature of blockchain, and especially on the need for cooperation in enforcement of the owner of the code, *see* Renato Mangano, *Blockchain Securities, Insolvency Law and the Sandbox Approach*, 19 EUR. BUS. ORG. L. REV. 715, 725-26 (2018) (stating that blockchain is creating a divide between the world where securities are issued, offered and sold and the world where law is enforceable).

had already been opened into restructuring proceedings.[31] In this respect, the trustee appointed to the latter explained the reason for this switch by stating: "[i]n bankruptcy proceedings, non-monetary claims are converted into monetary claims based on the valuation as at the time of the commencement of bankruptcy law proceedings. In contrast, in civil rehabilitation proceedings, non-monetary claims are not converted into monetary claims at the time of commencement of the civil rehabilitation proceedings. Therefore, in the civil rehabilitation proceedings in this matter, claims seeking a refund of Bitcoins ("Bitcoin Claims") will also not be converted into monetary claims after the commencement of the civil rehabilitation proceedings."[32]

This decision is noteworthy and, arguably, must be regarded as providing for best practice, since usually restructuring proceedings allow creditors to be satisfied in kind. Indeed, the development of the *Mt. Gox* case ought to be regarded as a blueprint aiming at better aligning this new transnational practice with the various national laws. This implies that, from our point of view, debtors intending to propose a realistic solution to injured users ought to opt for restructuring procedures/proceedings from the beginning, while courts and practitioners involved in a case of liquidation proceedings that has been already opened, ought to find the right way either to allow those creditors that have lodged their claims in liquidation proceedings to be satisfied in kind or to switch that set of liquidation proceedings into a set of restructuring proceedings. Of course, the choice of the appropriate solution could vary both jurisdiction by jurisdiction and case by case.

VII. CONCLUSION

The recent scandals concerning cryptocurrencies exchanges have triggered a global process of law-making from the bottom-up whereby corporations incorporated in different jurisdictions have transplanted a US practice in bankruptcy law aimed at compensating the injured users on a *pari passu* basis.

This practice blurs and transcends some national taxonomies. In particular, this practice has transcended the debate about the characterization of digital coins – courts tend to consider pre-bankruptcy

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[31] *See* MtGox, *supra* note 6.
[32] *Id*.

characterization as irrelevant and to include digital coins in the debtor's estate simply because these have commercial value and there is a market for them. Moreover, this practice has assumed that the exchange-user relationship is similar to the bank-customer relationship – the exchange becomes the owner of the coins deposited and the users have only a claim to withdraw them.

This trend, which is the outcome of a general process of globalization of legal remedies, ought to be encouraged, framed and, if necessary, accommodated to the specificity of the jurisdiction where this practice is to be performed. Indeed, in this respect the present paper tried to demonstrate that, since this process of law-making follows the pattern of restorative justice and since cryptocurrencies are highly volatile, creditors ought to be satisfied in kind, *i.e.* in cryptocurrencies themselves. Otherwise, there might be the risk that strong fluctuations in the value of cryptocurrencies when proceedings are progressing could frustrate the restorative goals of bankruptcy law proceedings: in the event of a strong appreciation of the cryptocurrency, by evaporating the restorative aim in itself; in the event of a strong depreciation of the cryptocurrency, by allowing users to obtain a dividend that massively exceeds the value of the harm that they really suffered.