SINGAPORE INTERNATIONAL COMMERCIAL COURT

14 March 2019

Case summary

B2C2 Ltd v Quoine Pte Ltd [2019] SGHC(I) 03

Decision of the Singapore International Commercial Court (Simon Thorley, International Judge)

Outcome: SICC finds operator of virtual currency exchange platform liable for breach of contract and breach of trust in reversing trades made at an abnormal exchange rate

Pertinent and significant points of the judgment

- One of the first judgments to apply the law of contract to virtual currencies
- Finding that virtual currencies have the hallmark characteristics of property
- Applying the law of unilateral mistake to a case involving algorithmic trading

Background to the Case

1   The defendant, Quoine Pte Ltd, operates a currency exchange platform enabling third parties to trade virtual currencies for other virtual currencies, or for fiat currencies such as Singapore or US Dollars. The plaintiff, B2C2 Ltd, is one of the parties which traded on the defendant's platform.

2   The present dispute concerns two virtual currencies, namely Bitcoin ("BTC") and Ethereum ("ETH"). Bitcoin has historically had a higher value per coin than Ethereum, and this was true at the material time of this dispute.

3   On 19 April 2017, the plaintiff entered into seven trades where it sold ETH at a rate of about 9.99999 or 10 BTC for the price of 1 ETH. This rate was approximately 250 times the going rate of about 0.04 BTC to 1 ETH. The proceeds of sale of 3092.517116 BTC were automatically credited to the plaintiff's account, and a corresponding amount of 309.2518 ETH was automatically debited from its account (at [**4**] of the Judgment).

4   When the Chief Technology Officer of the defendant discovered that these trades had been made the following morning, he considered the exchange rate to be such a highly abnormal deviation from the previous going rate that the trades should be reversed. Accordingly, the defendant cancelled the seven trades and the debit and credit transactions were reversed (at [**5**] of the Judgment).

5   The plaintiff commenced legal proceedings against the defendant on 18 May 2017, alleging that the defendant had no contractual right unilaterally to cancel the trades once the orders had been effected. The plaintiff claimed that the defendant's reversal of the trades was in breach of the Terms and Conditions which governed the trading relationship between the plaintiff and the defendant at the material time, and was thus a breach of contract. Further, the plaintiff also claimed that the defendant held the proceeds of its account on trust for it, and that the unilateral

withdrawal of the BTC which had been credited to its account was therefore in breach of trust (at [**6**] of the Judgment).

6   The trial was heard over 5 days in November 2018, and parties provided their closing written submissions on 28 December 2018. At trial, the SICC struck out certain evidence from the affidavits of some witnesses and from the expert report produced on behalf of the defendant. Some of the evidence was said to reveal a common practice amongst other virtual currency exchange platforms to cancel or reverse erroneous trades. The SICC considered, however, that those other platforms were empowered to do so by an express term in the relevant contracts, whereas no such term was present in the contract in this case. Thus reference to common practice was not helpful to resolving the present dispute. Further, other parts of the evidence were struck out for being plainly speculative (at [**52**]-[**54**] of the Judgment).

Key Findings of Fact

7   The SICC made several findings of fact crucial to resolving the dispute, relating to (1) the Quoter Program; (2) the Platform and Margin Calls; (3) the B2C2 Trading Software and (4) the mindset of Mr Maxime Boonen, founder of B2C2.

8   The SICC found that the causes of the incident on 19 April 2017 had their origin in work done by the defendant to the Platform's Quoter Program on 13 April 2017. Certain login passwords for several critical systems had to be updated for security reasons, but by an oversight necessary changes to the Quoter Program were not implemented (at [**71**] of the Judgment). The Quoter Program was responsible for retrieving external market prices from other exchanges, which were then used to create new orders to be placed by the defendant on its platform for market making purposes and to create liquidity. The effect of the oversight was that it could not access data from those other exchanges and accordingly became inoperative and stopped creating new ETH/BTC orders on the Platform. The defendant only discovered the oversight after the events of 19 April 2017 (at [**72**] of the Judgment).

9   At the material time, the defendant was the principal market maker on the platform and was responsible for about 98% of the market making trades. Upon the Quoter Program becoming inoperative, the volume of trading on the ETH/BTC currency pair slowly depleted and the order book reached an abnormally thin level (at [**73**] of the Judgment). This resulted in the Platform determining that certain margin traders' positions were in a "Margin Sell-Out Position", and triggered margin calls resulting in the placement of market orders to buy ETH at the best available market price (at [**74**] of the Judgment). The platform started to purchase ETH at the lowest available price and worked its way through the existing orders sequentially in increasing value terms (at [**78**]-[**79**] of the Judgment). This process culminated in the seven trades in this dispute being carried out where the margin traders bought ETH at the rate of about 9.99999 or 10 BTC for 1 ETH, far above the previous going rate (at [**80**] of the Judgment). These trades were carried out despite the fact that the margin traders did not have sufficient BTC in their trading accounts to actually complete the transactions; for example, one trader's account contained only approximately 13.53 BTC but it was debited with over 3000 BTC (at [**75**]-[**76**] of the Judgment).

10   The SICC also examined the operation of the plaintiff's trading software. The purpose of the software was to calculate the appropriate price at which to quote on

either the bid or ask side of a trade. The software did this by evaluating the first 20 price levels on a given platform on both the bid and ask side, subject to certain exceptions. However, there could be occasions where the order book was empty, or where it was populated by a large number of low volume orders such that the software was unable to determine a price. The workaround adopted by the software's programmers was to introduce two "deep prices" to both the bid and ask side of the software's internal representation of the order book, with the result that the software would not error out (at [**83**] of the Judgment). The "deep prices" were chosen with the objective of ensuring that the plaintiff would be protected from any adverse consequences of the trade. On the ask side, this meant that the price would have to be sufficiently high and, on the bid side, that the price would have to be sufficiently low. The deep price programmed on the ask side was 10 BTC/ETH on 19 April 2017(at [**85**] of the Judgment).

11   When the order book became very low or empty in the late evening of 19 April 2017, the two deep prices on the ask side came into effect and were placed on the order book. Thus, the plaintiff was offering to sell 1 ETH at the price of 10 BTC. The plaintiff's witness, Mr Boonen, gave evidence that the deep prices were set with the intention of managing risk for the plaintiff by ensuring that the price chosen would be sufficiently advantageous to cover the risks to the plaintiff of trading in a potentially illiquid market (at [**96**] of the Judgment). The SICC accepted that the deep price was not set with an ulterior motive of taking advantage of any perceived loss in the order book (at [**105**] of the Judgment). The SICC accepted that Mr Boonen's primary concern when writing the program was to protect the integrity of the plaintiff's trading system so as to minimise the risk of any unwarranted exposure (at [**118**] of the Judgment). Although Mr Boonen knew of the possibility that the order book might become empty and in that event the deep prices would be placed on the order book, he considered that it was unlikely this event would occur. Exploiting this opportunity was not the motivation for designing the software as he did (at [**123**] of the Judgment).

12   The SICC considered there could be multiple contractual relationships that exist when parties trade on a currency platform. All traders, whether buyers or sellers, will have a contract with the platform operator to regulate the relationship between that trader and the platform owner ("Platform contracts"). The allegation of breach of contract is directed at the breach of the Platform contract. Where there are margin traders, there will also be separate contracts between the borrowers and the lenders. Finally, when a trade is executed, the buyer and seller will have some form of contractual relationship as between themselves (at [**126**] of the Judgment).

The issues

13   The SICC considered three main issues (at [**133**] of the Judgment). First, the plaintiff's claims for breach of contract and breach of trust. Second, the defendant's defences. Third, the relief to be ordered if the defendant was found liable.

14   On the first issue, the SICC identified the plaintiff's claim on breach of contract as turning on a provision in the Agreement between platform users and the defendant providing that "once an order is filled, you are notified via the Platform and such an action is irreversible" (at [**136**] of the Judgment). The SICC also determined that the defendant did hold assets belonging to platform users such as the plaintiff on trust for them. Cryptocurrencies met all the requirements of a property right; the intended beneficiaries of the alleged trust were identifiable; and there was an

intention to create a trust because the cryptocurrency assets were held separately from the defendant's own trading assets (at [**142**]-[**145**] of the Judgment).

15   On the second issue, the SICC determined that none of the defendant's defences succeeded. The defendant first attempted to argue that a term ought to be implied into the Agreement allowing it to reverse the trades in question, on the basis that such a term was necessary to give business efficacy to the Agreement and to give effect to the intentions of the parties. The SICC determined, however, that implying such a term would contradict an express clause of the Agreement and therefore implication was not allowed (at [**152**] of the Judgment). Nor would implying a term give business efficacy to the Agreement, because it would detract from the certainty of the trades being irreversible (at [**154**] of the Judgment).

16   The defendant's second argument was that it was contractually entitled to reverse the trades, as this was expressly allowed by a provision in the Agreement read with a Risk Disclosure Statement that was subsequently put up on its website (at [**160**] of the Judgment). The SICC determined, however, that there was no reason to believe that the Agreement and the Risk Disclosure Statement ought to be read together so uploading the Risk Disclosure Statement could not serve to amend the Agreement (at [**176**]-[**177**] of the Judgment).

17   The defendant's third argument was that it was entitled to reverse the trades because the contracts between the plaintiff and the counterparties, *ie*, the margin traders who had bought ETH from the plaintiff, were void under the doctrine of unilateral mistake at common law. To do so, the defendant had to show that there was a sufficiently important or fundamental mistake as to a term of the contract, in the sense that the offeror did not intend the terms to be that which on its face was offered and that the plaintiff who was seeking to enforce the contract had knowledge of the mistake (at [**186**] of the Judgment). This involved the novel challenge of identifying the relevant person whose knowledge would have to be assessed, as this was a case involving algorithmic trading where the orders had been placed pursuant to the operation of an algorithm and not consciously entered by a human being. The SICC determined that where it is relevant to determine what the intention or knowledge was underlying the mode of operation of a particular machine, it was logical to have regard to the knowledge or intention of the operator or controller of the machine. Thus, in this case, it was the knowledge and intention of the programmer of the program in issue that mattered (at [**210**] of the Judgment). Mr Boonen was the programmer in question, but he did not possess the requisite actual knowledge to establish a mistake (at [**223**] and [**230**] of the Judgment).

18   The defendant's fourth argument was that it was entitled to reverse the trades because the contracts between the plaintiff and the counterparties, *ie*, the margin traders who had bought ETH from the plaintiff, were void under the doctrine of unilateral mistake in equity (at [**232**] of the Judgment). To succeed in this argument, the defendant had to show that any reasonable person in Mr Boonen's position would have known that no other trader would have contemplated trades being executed at those prices. But the defendants could not show that Mr Boonen's insertion of the deep prices was irrational, nor that a trader in Mr Boonen's position would have that requisite knowledge (at [**223**] of the Judgment). The defendant would also have had to show impropriety on the part of the plaintiff. But it could not do so; the plaintiff's behaviour was opportunistic, but it was not sinister, and was

the result of a business decision to ensure that an unlikely event resulted in a profit and not a loss (at [**236**] of the Judgment).

19   The defendant's fifth argument was that it was entitled to reverse the trades because the contracts were void under the doctrine of mutual mistake at common law. The SICC held that this doctrine did not apply, because it could only apply if it could be shown that the parties shared a common assumption as to a certain state of affairs, which in turn depended on assuming that the parties had hypothetically "met on the floor of the exchange", and this was far too artificial considering that parties were trading via algorithmic computer programs and not face-to-face as that hypothetical presumed (at [**238**] of the Judgment).

20   The defendant's sixth argument was that the plaintiff had been unjustly enriched by the trades. The doctrine of unjust enrichment allows one party to claim against another party who has received a benefit from the first party in circumstances which make it unjust for the second party to retain the benefit. It was not unjust for the plaintiff to retain the benefits of the proceeds of sale here. The plaintiff was enriched because the defendant had failed to take any of the steps necessary to protect itself or the margin traders who were counterparties to the trades in question (at [**252**] of the Judgment).

21   All of the defendant's defences having failed, the court held that the plaintiff's claims for breach of contract and breach of trust succeeded (at [**253**] of the Judgment).

Relief ordered

22   The SICC then turned to consider the relief to be ordered. The SICC declined to exercise its discretion to order specific performance as that would require the defendant to transfer BTC to the plaintiff at today's price, which is substantially higher than the price in April 2017 when the trades were executed. This would cause substantial hardship to the defendant which the difficulty in assessing damages would not outweigh (at [**256**] of the Judgment). Instead, the plaintiff's remedy lay only in damages which, if not agreed, will be assessed at a subsequent hearing.

This summary is provided to assist in the understanding of the Court's grounds of decision. It is not intended to be a substitute for the reasons of the Court. All numbers in bold font and square brackets refer to the corresponding paragraph numbers in the Court's grounds of decision.