

## **THE FADING RUSTLE, CHINK AND JINGLE: ELECTRONIC VALUE AND THE CONCEPT OF MONEY**

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### **I. AN ENDURING QUESTION**

Technological advances have brought about changes in the financial system causing its structure, arrangement and regulation to be the subject of current re-evaluation and interest. These changes have revived the question of what money is, as they have had a marked, and in some cases radical, effect on underlying payment systems. This question ‘what is money?’ has proved traditionally to be a difficult one to answer, and it has been the cause of many ideological and analytical disputes. It is certainly a root of the doctrinal disdain that exists between some economists and lawyers. This article seeks to explore the legal concept of money with the view of articulating reasons why statements equating electronic value with money are not for the moment conceptually sound.

The profound changes occurring in the means and methods of making payments have meant that the most recently developed digital payment systems are very different from more conventional ones. In particular digital data has introduced the concept of electronic value, but the implications and ramifications of this are yet to be fully understood. Among the questions that are raised by this evolution are whether the phenomenon represents yet another metamorphosis of money – is it still properly described as such or is it so significantly different as to demand a distinction from money? Others focus on the definitions and conceptions upon which such distinctions are made – should they be changed, and if they are, what are the likely consequences?

There have been many attempts to encapsulate the essence of money in a single comprehensive definition. Most attempts, however, have had limited success at best. The elusiveness of the subject has been one cause of this, the predisposition

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of the concept to vary according to context, another.<sup>1</sup>

The economist for example, is primarily concerned with the functioning of the financial system conceived as the fulcrum of the wider economy. The main objectives of the economist are to effectively monitor, measure, manipulate and otherwise control financial flows within the national economy. This necessitates a broad perspective, for example in the formulation of monetary policy. This is why definitions such as “money consists of all those things that are widely accepted as a means of payment or medium of exchange”<sup>2</sup> or

an accounting unit that is (i) standardised by those dealing with it as a matter of convenience and in the light of evolving needs; (ii) may be transferred within the framework of national or international institutions and legal structures and permits the ready, that is, unconditional, effective, and speedy, conversion of direct and indirect claims to real resources into the unit<sup>3</sup>

are considered workable and acceptable in that discipline.

There are different schools of thought in this discipline about how money should be defined. There are for example: the pragmatists, who isolate the function of medium of exchange as the central characteristic of money; the quantity theorists, who define money more broadly as a temporary abode of purchasing power; monetary politists, who reject narrow definitions of money being more interested in the effects of central bank control upon financial supplies; and institutional analysts, who focus on the effect of close money substitutes and non-bank financial institution activity upon financial flows.<sup>4</sup> Different methods are also used to measure or quantify money.<sup>5</sup> One widely used method employs simple sum aggregates that utilise wide (eg MBr and MB) and narrow (eg M1 to M6) measures of money. Other methods include measurements of the ‘degree of moneyness’ or the ability of assets to substitute as cash, as weighting factors.<sup>6</sup> It is evident that even within this discipline, there is no one absolute fixed meaning of the word ‘money’.

Legal analysts, in contrast, are more interested in determining the validity of claims according to legal doctrine, enactments and other legal sources. Their

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- 1 Contextual variations may occur because the issue is being examined from the perspective of different fields, however, even within the same field there may be substantial room for varied approaches to the same question.
  - 2 B Felmington and W Coleman, *Money and Finance in the Australian Economy*, Richard D Irwin (1st ed, 1995) p 7.
  - 3 Silard, quoted in FA Mann, *The Legal Aspect of Money*, Oxford University Press (6th ed, 1992) p 6 fn 17; in respect of which Mann comments rather wryly “whatever else may be said about such a definition, it is certain that lawyers will not find it helpful”.
  - 4 See HG Johnson, *Selected Essays in Monetary Economics*, George Allen & Unwin (1983) p 35.
  - 5 Those which basically account for financial facilities within the financial system according to industries (eg banks as distinct from non-bank financial institutions (NBFIs) as distinct from money markets and so on) have been affected by recent changes in the financial system (eg M1 and M2 are now obsolete as the expanded activities of NBFIs and the removal of distinctions between trading and savings banks, rendered them conceptually meaningless). In practice the measures now used are M3 (currency plus all bank deposits), MBR (broad money = M3 plus NBFI deposits less their currency and bank account deposits) and MB (base money = currency held by the private sector, bank deposits with the Reserve Bank, Reserve Bank liabilities to the private non-bank sector). MBR (broad money) thus takes into account the close similarities between deposits held by banks and NBFIs, and MB (base money) represents the primary liquidity of the financial system as a whole. Economists commonly refer to MB as cash.
  - 6 B Felmington and W Coleman, note 2 *supra*, pp 12-15.

primary concern is to identify the nature of the claim or obligation in question, to pinpoint the time of its creation, to evaluate the validity of its scope and effect, and to determine which doctrines and laws are properly applicable to its operation. Definitions in this field tend accordingly to be of a more specific and detailed nature, and they often determine the procedural approach to be taken in the settlement of disputes.

It is not that broad definitions are unknown to law, or never used in the discipline, particular legal contexts may demand wide and flexible conceptual interpretations for specific purposes,<sup>7</sup> but they are treated as exceptions ill-suited for general legal purposes. Certainly broad definitions formulated in the light of economic rather than legal objectives are unlikely to suit legal requirements – ill-conceived attempts to generally apply them in legal contexts are unlikely to be helpful.

## II. THE EVOLUTION OF PAYMENT MEDIA

Legal evaluations of money and related concepts are primarily concerned to determine whether debt obligations have been validly settled. Debt obligations are expressed in terms of money, and are ultimately settled, if not by the physical exchange of money, by the transfer of rights over same. Payment is thus the process by which money is transferred to a creditor by a debtor for the eventual final extinguishment of a debt,<sup>8</sup> and has been described as follows:

Usually it denotes the transfer of money, of a money fund, or performance of some other act tendered and accepted in discharge of a money obligation but often the parties to a contract use the term to denote some intermediate step, such as a conditional payment or a dispatch of funds ... Payment in the legal sense means a gift of loan of money or any act offered and accepted in performance of a money obligation. So an act cannot constitute payment unless money is involved, but this requirement may be satisfied not only by the transfer of money, but also by the performance of some other act in fulfilment of an obligation to pay money.<sup>9</sup>

This description draws attention to the fact that payments may be significantly distinguished in law according to whether they are conditional or final. Where a payment is considered conditional, the payment system may permit the countermanding of payment instructions up to a stage, after which they will be

7 For example where the word “money” is used in a will arising for interpretation by the court. In this context it has been held that the court is not bound to adopt a fixed meaning of the word “money” as its legal, as opposed to its popular, meaning, but rather it must ascertain which of the varied usual meanings of the word are appropriate in the light of the context and other relevant circumstances, and this may include more than what is called ‘money in the strict sense’. See for example *Perrin v Morgan* [1943] AC 399. See also *Re Stonham* [1963] 1 All ER 377 where the terms ‘cash’, ‘ready money’ and ‘money’ in a similar context were interpreted to include money in a deposit account.

8 It is perhaps pertinent to note here that the concept of spending is closely aligned to the concept of payment (the word “pay”, as in “to pay out” invariably occurs in definitions of the word “spend”). See for example the Australian Concise Oxford Dictionary) but it is most appropriately associated only with those means of payment that satisfy the narrow definition of money examined below.

9 See R Goode, *Payment Obligations in Commercial and Financial Transactions*, Sweet & Maxwell (1983) p 11.

treated as final and irrevocable. The time at which payment will occur in such systems may thus not be fixed, but may vary in fact according to: the parties involved in the transfer;<sup>10</sup> the transactional stage which is under scrutiny;<sup>11</sup> the operating rules or contractual arrangements regulating the transfer;<sup>12</sup> or the trade customs which may be relevant in the event of a dispute.

The description is also helpful in that it implies a further distinction that is significant in the legal context – some instructions for payment are treated as no more than that – instructions and the means of facilitating payment,<sup>13</sup> while others may be treated as actual value the mere receipt of which is sufficient to settle the payment obligation.<sup>14</sup> The distinction between the means of payment and the operative value of the payment itself, however, is becoming less clear cut because payment systems are evolving to include more abstract processes.

The latter point becomes more evident when the history of payment systems is concisely expressed in terms of four main groups:<sup>15</sup> the ‘objects-as-money’ group consisting of the first generation (trade by barter) and the second generation (trade with valuable objects); the ‘currency-as-money’ group consisting of the third generation (coins) and fourth generation (paper notes); the ‘claims-as-money’ group comprising the fifth (deposit accounts), sixth (‘plastic money’) and seventh generations (electronic payments (EPs) and electronic fund transfers (EFTs)),<sup>16</sup> and the ‘electronic-impulses-as-money’ group covering the eighth generation (smart cards)<sup>17</sup> and ninth generation (digital coins).

Though all of these generations represent means of payment and are part of a single evolutionary continuum, it is contended that they are not all properly described as money in the legal sense. As the first two generations were the predecessors of the third and fourth generations, they may be discounted. The third

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- 10 This may depend on whether it is purely a trans-institutional exchange, or whether the intervening institutions are acting on behalf of the originating payer or the ultimate payee - see *Momm & Ors v Barclays Bank International Ltd* [1976] 3 All ER 588; *Reksin v Severo Sibirsko Gosudarstvennoe Akcionerhoe Obschestvo Komesverputy and the Bank for Russian Trade Ltd* [1933] 1 KB 47; *Delbrueck & Co v Manufacturers Hanover Trust Co* (1979) 609 F 2d 1047.
  - 11 For example, does the transfer ultimately affect whether payment has occurred between intervening agent institutions, or whether it has been effected between the payer and payee? See *Momm & Ors v Barclays Bank International Ltd* [1976] 3 All ER 588; *Mardorf Peach & Co v Attica Sea Carriers Corp of Liberia (The Laconia)* [1977] AC 850; *Texas Steamship Co Ltd v Brimnes Owners (The Brimnes)* [1974] 3 All ER 88; *The Zographia M* [1976] 2 Lloyds LR 382; *A/S Awilco of Oslo v Fulvia SpA di Navigazione of Cagliari (The Chikuma)* [1981] 1 Lloyds LR 371.
  - 12 These for example, may expressly fix the operative time of payment at a specific point as noted in *Delbrueck & Co v Manufacturers Hanover Trust Co* (1979) 609 F 2d 1047 (reference to CHIPS operating rules).
  - 13 Which may not in themselves suffice to extinguish the obligation, requiring additional actions on the part of the receiving agent of the creditor and/or debtor.
  - 14 A cheque is an example of the former, an EFTPOS message an example of the latter.
  - 15 Further subdivided into nine generations. For the purposes of this grouping, the word ‘money’ is used descriptively in a very loose sense only. For a somewhat different categorisation of payment media, see M Stathopoulos, “Introduction” in M Stathopoulos (ed), *Modern Techniques for Financial Transactions and their Effects on Currency: General and National Reports*, Kluwer Law International (1995) 1 at 3-11.
  - 16 The sixth and seventh generations overlap somewhat in that plastic cards (both credit and debit) are used to effect EFTs, and even manual credit card transactions now involve automated authorisation procedures.
  - 17 The smart card may fall within either the third or fourth groups, depending on whether it is used as just another (albeit vastly improved) form of plastic money, or as a means of storing and exchanging electronic impulses as value inter partes.

and fourth generations are undoubtedly properly referred to as money - notes and coins are collectively referred to as currency and are colloquially known as 'cash'. They are commonly distinguished from other means of payment because they consist literally of 'cash in hand' and are, in other words, 'ready money'. Cash is perfectly negotiable, freely accepted by all within the jurisdictional territory of the issuing authority, and it is freely transferable by any holder. It has the status of legal tender,<sup>18</sup> which facilitates its ready transferability, and its exchange between a debtor and creditor will finally extinguish a debt.<sup>19</sup>

Certain features characteristic of cash are not manifested by the fifth and sixth generations, and for this reason they may for the time being be referred to as a form of 'near money'. The seventh generation, may also be referred to as such, but electronic payments and electronic fund transfers exhibit other distinct features. The eighth and ninth generations incorporate the most abstract features yet, and among all the previous generations, are the most disparate: they nevertheless possess features that closely approximate characteristic features of money and are arguably the most deserving of descriptive terms invoking money.

### A. Conventional Characteristics of Money

Money is used to buy goods and services – goods and services individuals want or need but are unable to produce themselves. The word 'buy' is defined as obtain in exchange for money, and this reveals one of the most important functions of money – its service as a medium of exchange. It is accepted in exchange for goods or other things not for its own sake but for its properties, and it is widely accepted in exchange and may be exchanged for other things almost ad infinitum. Money thus has the effect of bringing about *final payment* so that the claim of a seller upon a buyer is extinguished by the seller's receipt of a sum of money, in exchange for which, the buyer receives the subject matter of the sale. Money evolved historically from the early habit of bartering - the direct exchange of goods for goods, for example papayas for furs. Simple barter requires a double coincidence of needs, so that a farmer wanting to trade papayas for furs would need to find not just any furrier, but one willing to trade their furs for papayas.

This was an effective method of exchange in simple societies where there were few commodities and little specialisation, but once trade widened and the division of labour began to occur, commodities became specialised and the numerous cross ratios of exchange impractical. Eventually a particular good would emerge as the

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18 Legal tender is currency that may not legally be refused in the payment of a debt. See the Oxford Companion to Law, and the Australian Concise Oxford Dictionary.

19 A distinction must be made between two possible uses of coins and notes - they may be used as legal tender, or they may be used as a commodity, in which case the currency serves as goods rather than as money. Three useful indicators of which of these two uses currency is being put to are (a) fungibility – whether the obligation to pay requires the delivery of specific coins or notes: an obligation to deliver coins and notes *in specie* is a delivery obligation and not a payment obligation, money on the other hand is fungible because any denomination of notes and coins to the required value in the currency will suffice; (b) is there a nominal basis of evaluation – the value of a note or coin must be fixed by reference to its face value and not other factors such as its intrinsic or exchange value; (c) the nature of the obligation – money may be borrowed, given as a gift, or received in discharge of an obligation: if the currency is either bought or exchanged it is not serving as money.

standard unit of exchange or numeraire, in terms of which other goods would be measured for purposes of exchange. This is the second important function of money: it serves as a unit of exchange. It is not clear which function developed first, the exchange medium or unit for exchange, and it has been observed also that the two functions need not be contemporaneous.<sup>20</sup> It is easily conceivable that commodities used as a unit of exchange in the example would quickly become the means of exchange, and it was at the point that this development occurred, that the commodity would begin to serve as money.

A medium of exchange, to be efficient, needs to be easily transferable, portable, and widely accepted in exchange. It also needs to be durable and not likely to deteriorate quickly or depreciate in value with each exchange. As a depreciating asset represents declining exchange value, the ability of a medium of exchange to store value significantly affects its acceptability. It is for this reason that metal coins began to be used as money. Though their worth initially lay in their intrinsic value it was not uncommon for coins to be debased and their value as money to rest in part at least upon the power of the issuing authority. It became routine to keep the intrinsic value of the currency to a minimum because it would otherwise be withdrawn from circulation by members of the public and melted down for profit.<sup>21</sup> The profit accruing to an issuing authority from the issue of notes and coins is referred to as *seigniorage*.<sup>22</sup>

Currency notes are a specialised form of negotiable instrument that evolved from goldsmith receipts. They further evolved into promissory notes issued by heads of state in exchange for loans to finance wartime expenditure. Holders of state promissory notes expected to be repaid their value: modern currencies are incontrovertible and may no longer be redeemed for gold or other precious commodities. Because they circulate on the strength of the issuing authority's assurances as to their worth, rather than their redemptive value, incontrovertible currency is also called *fiat money*.<sup>23</sup>

### (i) *Defining Money*

Used in the sense of cash as a lay person would understand it, 'money' refers to those tokens of value that pass from hand to hand in discharge of obligations to

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20 The guinea for example continued to be a unit of exchange long after it had ceased to be a valid medium of exchange.

21 Expressed in terms of Gresham's Law, 'bad' money (money worth less in alternative uses if used other than as money) drives 'good' money out of circulation. The eventual result was usually that rather than go out of existence, the unwanted money would get passed around until it ceased to be unwanted. This was a very significant factor in the evolution of money from its original form as a full bodied asset (monetary and commodity value equal), to its form as representative money (fully convertible into a full bodied asset) and finally to its present form as token money (purchasing power greater than its commodity value).

22 The difference between the production cost (or intrinsic value) of coins and the revenue generated for the government by their issue is referred to as direct seigniorage. Indirect seigniorage refers to the interest earned by assets (such as gold, Commonwealth Government securities, or foreign exchange) backing the issue of notes.

23 Also defined as inconvertible paper money made legal tender by a Government decree by the Australian Concise Oxford Dictionary. Fiat money, which is inconvertible into any other commodity, is a form of token money.

pay, that are issued by the government through the agency of the central bank.<sup>24</sup> A more legally focused definition, however, describes money as being in effect all those chattels issued under the authority of law, denominated with reference to a unity or account, that are meant to serve as a universal means of exchange in the state of issue.<sup>25</sup>

Money according to this definition consists of tangible movable objects that have been issued by or under the authority of the state and are the universal means of exchange in jurisdiction under the authority of the state. It must be denominated with reference to a unit of account and thus have a par value which is effective to discharge legal obligations for such amount.

This definition tests both the physical nature and the use of objects described as money. Money is seen objectively as that which is tangible, portable, negotiable and may be spent – currency which may be held in the hand and spent as legal tender. Cheques, credit cards and other forms of plastic money from this perspective therefore are mere means of transferring money.<sup>26</sup>

This is in sharp contrast to economic definitions which tend to explain money in terms of currency and cash. Currency in an economic context is understood to refer to Commonwealth notes and coins, while cash refers to transferable financial liabilities produced by either the government (outside money), or the private sector (inside money). Currency is thus used as a synonym for deposits in book accounts and the accounts are regarded by economists as a form of money.

The distinctions drawn in law between money and closely related concepts such as a debt, an account, payment and consideration, may be traced to conceptions of money such as the narrow one above, and the relevance of these distinctions cannot be doubted in the legal context.<sup>27</sup> A bank account in law, for example, is conceived as the abstract representation of a debt owed by a bank to its customer.<sup>28</sup> The deposit of money vests a chose in action<sup>29</sup> in the customer, while the bank is put in possession of an asset which it may put to whatever use it pleases.<sup>30</sup> The bank is neither agent nor trustee of the customer in its use of the money,<sup>31</sup> but it is obliged to repay the debt to the customer on demand with

24 The Note Printing Branch of the Reserve Bank of Australia issues currency notes, while coins are issued by the Reserve Bank of Australia through the Royal Australian Mint.

25 See FA Mann, note 3 *supra*, p 8. See also R Goode, note 9 *supra*, p 1.

26 It may also be commented in this regard that a debt is incurred in terms of money units, and cheques are required to be made out for 'a sum certain in money'. See for example the *Cheques and Payment Orders Act* 1986 (Cth), s 10. Implicit distinctions are also drawn between a cheque and its associated account by the *Cheques and Payment Orders Act* 1986 (Cth), s 12 (2)(a).

27 In law while money can be stolen, a debt cannot be the subject of theft – see for example *R v Kohn* (1979) 69 Crim App R 395.

28 It is trite law that the opening of an account creates the relationship of debtor and creditor between the bank and customer respectively. Concerning the abstract nature of the created account, see *Buckingham v Shackleton* (1981) 79 LGR 484.

29 A claim, interest or right which may be enforced by means of a court action – for an interesting exploration of this point see *R v Thompson* [1984] 3 All ER 565 where a chose in action (debt) was held to have *not* come into existence merely because bank account data had been electronically manipulated by the defendant.

30 See *Foley v Hill* (1848) 9 ER 1002, *R v Davenport* (1954) 1 WLR 569; *Croton v R* (1967) 41 ALJR 289 and *Grant v R* (1981) CLR 147.

31 *Foley v Hill*, *ibid*.

reasonable notice. A debt creating an obligation to pay money is thus a chose in action which is distinguished in law from money.

Though money in its earlier form as a controvertible currency could itself be regarded as the embodiment of a chose in action,<sup>32</sup> it must be noted that this is no longer strictly the case. The central bank, by its state of existence and monetary policies, assures holders of currency that the circulating tokens endorsed and issued under its authority will continue to be valuable, and backs an incontrovertible currency with its fiat. Even where the currency still bears upon its face the time honoured formula of "I promise to pay the bearer on demand the sum of x dollars" or words to that effect,<sup>33</sup> the words, if not quite an empty promise, merely entitle the holder to another note of equivalent value in exchange.<sup>34</sup> The currency in effect is thus no more than the embodiment, in corporeal form, of the unit of account, its fraction or multiple.<sup>35</sup> it does not vest a claim to a dollar, pound or whatever currency it is in the holder, it merely indicates factually that the holder is in possession of a dollar.<sup>36</sup>

The concept of legal tender is another example. Legal tender is currency that may not legally be refused in the payment of a debt.<sup>37</sup> Of all the means of payment, legal tender alone is the means by which a debt may be extinguished without the need for consent or approval. Any other method of payment must be supported by the explicit or implicit consent of the creditor. Though the courts are in practice very ready to imply such consent, or a waiver of the need for such consent,<sup>38</sup> it may not be said that the role of consent in the settlement of debt obligations is irrelevant: the validity of the payment may turn on this issue – a payment made against the wishes of the creditor will not extinguish the debt. In such a situation, though the creditor cannot be compelled to accept payment, evidence of the debtor's continued readiness and willingness to pay<sup>39</sup> will defeat a subsequent action by the creditor against the debtor for non payment.<sup>40</sup>

## B. Account Based Facilities as 'Near Money'

Cheques, credit cards, electronic payments (EPs) and Electronic Fund Transfers (EFTs) are all closely linked to book accounts maintained with banks or financial

32 Giving the possessor for example the right to a certain amount of gold where it was tied to the gold standard.

33 Words to this effect are not included on current Australian notes or coins, but are still used in England, and the design copyright being vested in the Governor and Company of the Bank of England - see for example the upper face, and bottom left hand corner face of the current £5 note.

34 To the extent that the holder has a claim to a replacement note that may be enforced, the currency may still be said to embody a chose in action.

35 Hence the exclamation of Humphreys J in *Hill v R* [1945] KB 329 at 334-5 that "the possession of a pound note is [not] evidence that you have got anything at all".

36 See FA Mann, note 3 *supra*, pp 23-8.

37 See also the *Currency Act 1965* (Cth), s 16 and *Reserve Bank Act 1959* (Cth), s 16.

38 The fact that cash payments are becoming less convenient especially in regard to the making of large payments is relevant in this regards. In any case, coins are also legal tender only for transactions for up to five dollars – see *Currency Act 1965* (Cth), s 16.

39 Often accompanied by the payment by the debtor into court of the amount if and when the creditor brings an action against the debtor.

40 Such protection may be required because a creditor may not be compelled to accept a payment tendered by a debtor irrespective of whether it is in the form of legal tender or otherwise.



institutions. Deposits become abstract concepts once they are transferred 'into' an account, and it is the ability to fluidly transfer funds into or between such accounts<sup>41</sup> that confers 'near money' characteristics on these payment methods.<sup>42</sup> It is relevant to note that only a percentage of the funds held in financial institutions are backed by actual currency – the institution may invest loaned funds as it sees fit. The figures in a statement of account are therefore more evidence that a deposit has been made which equips and enables the customer to lay claim to their value.

(i) *Paper and Plastic Account Based Facilities*

Cheques and like instruments are a specialised form of negotiable instrument used to extinguish debts. They provide evidence of a payer's<sup>43</sup> right to funds that have previously been deposited in a financial institution. Properly filled out and signed, they act as a medium of exchange. In exchange for this evidence of the drawer's (payer) intention to transfer value in a certain sum, the payee will release the subject matter of the transaction into the possession of the payer. Though serving as a medium of exchange, the tender and acceptance of such instruments does not, however, constitute final payment – they must also be duly 'cashed'. This means that they must be cleared and it is only if they are not dishonoured or countermanded, that they will result in the transfer of funds to the account of the payee.

Credit cards are another medium of exchange. Evidence that the cardholder is a party to an existing arrangement with a financial institution<sup>44</sup> is the basis for the exchange in this instance. The evidence is furnished by several things acting in tandem: the cardholder producing a plastic card that is linked to a credit account; the PIN furnished or sales voucher signed by the cardholder; and the authorisation furnished by the relevant authorisation centre in respect of the transaction by electronic means. This is treated in law as a substitution of payment in cash for 'payment by card', and a final payment as the debt between the cardholder and seller is regarded as unconditionally settled.<sup>45</sup> The cardholder, however, remains liable to the relevant authorisation for the amount of the transaction, and this will remain outstanding until it is settled by the cardholder.

Several observations may be made at this point. First, an account and its means of access are significantly distinct for legal purposes. Secondly, an account is an abstract store of value that may more or less conveniently (depending on the type of access device used) be converted into currency. The inherent potential of conversion, rather than the frequency of actual conversions, underpins the worth of such value which directly affects its wide acceptance. Thirdly, cheques and

41 For example by means of cheques used in conjunction with current accounts. Current accounts are regarded as especially significant by economists because they possess a high degree of liquidity (they may be easily converted into currency).

42 It may be noted here that it is this very characteristic of liquidity in fact that inspires broad economic definitions of the type discussed above.

43 The term payer is used here for convenience and may include a drawer in cheque transactions.

44 Under which credit extended to the cardholder by a seller is to be reimbursed by the financial institution - see *Re Charge Card Co* [1986] 3 All ER 289.

45 *Re Charge Card Co*, *ibid.*

payment orders are not money, but a medium of exchange: constituting tangible satisfactory evidence of the intention and ability to pay, a cheque or payment order provides the means by which a payment transaction is effected; the tangible document thus serves both as an access device to the account to be debited, and as tangible consideration in exchange for which the subject matter of the transaction changes hands. Payment in this case is treated as only a conditional discharge of the debt – it will not be extinguished until the cheque has been successfully cleared, honoured by the payer's institution, and satisfied against funds in the payer's account. Fourthly, credit cards are a means of effecting final payments between a cardholder and seller, but they are not properly referred to as money per se. The card is often used, in conjunction with other sources of information, to create a tangible or electronic document evidencing the identity and entitlement of the cardholder. This document serves as consideration for the exchange of the subject matter, and it will be exchanged between the involved financial institutions electronically or during the manual clearing of dockets. In addition to a medium of exchange it also serves as an access device. The transaction is considered a final payment as between the cardholder and seller, and the debt between them is extinguished. The cardholder however remains liable to reimburse the financial institution card issuer for the debt settled on the cardholder's behalf.

Based on the foregoing, it may be observed that 'money' functionally represents the coincidence of a medium of exchange, a standard of deferred payment, a means of final payment, a unit of account, a store of value, and fungibility. It is perfectly negotiable in that it may be transferred at the whim of its holder. 'Near money', on the other hand, has an evidentiary function – though near money forms all serve as media of exchange, it is the evidence of the status of the holder that is the basis of the exchange rather than a tangible token of value. Because they involve deferred payment in some form, the certification of creditworthiness becomes the imperative alternative to trading on trust.

### *(ii) Electronic Account Based Facilities*

In electronic transactions, instructions about the ownership or transfer of ownership of value within an account are dematerialised and utilised in electronic form at a point in the payment transaction. Electronic payments (EPs) are thus effected by means of (eventually<sup>46</sup> or wholly) electronic instructions under which a financial institution is ordered to effect a transfer of funds. Although the instructions involved may be described as an electronic document, and are commonly used to settle debts, they are not negotiable. It is also not unusual for such payments to be deferred, although this is becoming less common. Though notice of EPs are usually forwarded to the payee involved, the payment message is not usually routed to the payee in the course of its execution, but is, rather, effected through an individual third party such as a financial institution or Internet Service Provider.

Electronic Fund Transfers (EFTs) consisting as they do, of electronic messages instructing the transfer of value in an account, are also electronic evidence of, and

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46 Such as where the instructions originated in a paper based version but are utilised in electronic form.

the means of transferring, value. Payment messages are often routed through the payee en route to the financial institution(s) responsible for the execution of the instruction. To the extent that they are executed in conjunction with an associated sales transaction, EFTPOS transactions may be spent but they are not negotiable.

Notable features distinguishing such electronic transactions from earlier payment means firstly include tangibility. The central role played by abstract electronic impulses rather than tangible physical objects or actions is very significant. In some cases no tangible instrument is transferred between the parties whatsoever. Secondly, the authentication of messages in this context most often utilises digital signatures rather than manual signatures. Thirdly, in contrast to earlier methods, the transactional speed of electronic transactions may be measured in fractions of a second rather than hours or days. Fourthly, the number of participants and parties functionally involved in such transactions tends to be greater than in conventional transactions. Fifthly, the versatility of the instruments or access devices concerned is striking in comparison with earlier methods – the same object in electronic transaction may serve as a smart card, a credit card, a debit card, and cheque guarantee card; whereas previously access devices were restricted in use to a single transaction type. Sixthly, technical hitches and human errors may hinder or prevent the execution of a transaction to a degree not commonly experienced in relation to paper based transactions.

### C. Recent Innovations

Among the many innovations involving electronic transactions that have been developed in recent years,<sup>47</sup> smart card and digital cash systems are among those most likely to be of lasting impact, and as such are given particular attention.

#### (i) *Smart Cards*

The many uses of the smart card, which all in one way or another centre upon the secure storage of copious amounts of digital data, include medical applications, telecommunications, restricted entry access devices, and personal organisation to name but a few.<sup>48</sup> Financial applications of smart card technology in particular are currently the subject of widespread international interest. These involve the smart card operating as a storage receptacle and transacting device for financial data.

Wholly electronic financial transaction systems have been distinguished according to whether they involve the transfer of account balances, incorporate electronic cheques, utilise secure value counters, or are token based.<sup>49</sup> The smart card may be utilised for example as a debit card or credit card in account transfer

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47 One system that may rouse historical interest is the Local Exchange Transactions System (LETS) which is an interesting reversion to trade by barter involving the circulation of electronic commodity or service based IOUs. Evidence of uncertain or lack of creditworthiness of the participant liable upon the claim would obviously affect the acceptability of the unit. LETS do not usually involve financial institutions.

48 See for example Centre for Electronic Commerce, *Smart Cards and the Future of Your Money*, Australian Commission for the Future Ltd, July 1996.

49 See A Furche and G Wrightson, *Computer Money: A Systematic Overview of Electronic Payment Systems*, Dpunkt (1996) pp 25-33.

systems, replacing the less secure magnetically stripped technology.

Smart cards, however, may also be used to provide a secure counter of value which may be progressively reduced in exchange for the provision of goods or services. They may also be used to store digital value in the form of denominated tokens that are transferable between system users. This means that there are effectively two distinguishable financial applications of the smart card which are of particular interest here. Although in both cases the smart card functions as a storage receptacle of financially related data, the data is composed, processed, and transferred in significantly different ways. Secure counter systems utilise electronic evidence of prepaid value which is mostly transferred inflexibly. Token based systems on the other hand, revolve around denominated electronic value that is transferable and usually capable of storage in alternate media.

Where the smart card stores electronic prepaid value, it functions as a stored value card (SVC), storing electronic evidence of prepaid value, and is often referred to as an electronic purse. Because this function is presently the one most commonly utilised by smart card payment systems, it was earlier in time, and it may be distinguished from token based systems, electronic purses are here distinguished from digital cash.<sup>50</sup> Other differences stem from technical configurations which may however change in the future. Electronic purse systems for example are hardware related, while digital cash systems tend to be software based. This has an impact on the form and expression of digital data/value incorporated (inflexible stored counter, or denominated coins), the memory capacity required, the method by which the data is amended or transferred (via the Internet, by telephone, through portable terminals or wallets,<sup>51</sup> by EFTPOS, through ATMs), and whether this may be done by remote exchange or requires the physical debiting of the card balance. As technology permits development of cheaper cards with increased storage capacity and security features, it is likely that both functions will become interchangeable or that the distinctions between them will be significantly diminished.<sup>52</sup>

### (ii) *Electronic Purse Systems*

The value balance stored in electronic purses may be 'spent' by the card holder because the system incorporates previously agreed arrangements between the card issuer and participating retailers. This balance is in effect evidence of the card holder's entitlement to value which has been purchased by a pre-payment to the

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50 This is also why smart cards and digital cash are grouped into different generations within the same evolutionary group as set out above.

51 An 'electronic wallet' is a device that enables cardholders to transfer or exchange stored data/value between cards without the need to log onto the card issuer's system. Contactless cards contain an antenna that permit them to use radio frequencies to transmit data once the holder is within the general vicinity of a terminal; contact smart cards must be placed within a terminal with a reading device before a transaction may take place.

52 Although both forms are presently supported by pre-paid value, it is conceivable that digital cash may eventually circulate so freely as to operate as currency without it necessarily being declared legal tender, while SVC functions continue to relate to money deposit account value instructions. For more on smart cards and money generally, see Electronic Commerce Centre, *Smart Cards and the Future of Your Money*, note 48 *supra*, especially chapters 2, 5, 6 and 7.

card issuer. As a result of previously agreed arrangements between the card issuer and participating retailers, the latter agree to extend goods or services on credit to the cardholder. The value data transferred from the card holder to the retailer in exchange for the commodities provided, is what will enable the retailer to claim reimbursement from the card issuer. Reimbursement generally involves the retailer downloading or otherwise resubmitting to the card issuer the value data received from the card holder.

The transaction will create a debt that is owed by the card issuer to the merchant because the merchant in effect grants credit to cardholder based as previously arranged with the card issuer. As is the case with credit cards, it is most likely that the debt will be regarded as extinguished between the card holder and merchant, but not between the card issuer and merchant. As the value was prepaid by the cardholder, that party would not owe the card issuer a debt for the transaction.

The balance on the card may be accessed, adjusted and updated either on-line or off-line. Because of the costs of on-line authorisation, off-line transactions are the preferred option. Off-line (non-accounting) operations presently assume that the hardware utilised (cards, terminals, wallets) are tamper proof, and that the risks implicit in off-line operations are thus reduced to an acceptably low level. Although transactions are often inflexible in that they permit only transfers to a supplying retailer, off-line peer to peer transfer of balances are possible. The degree to which they are regarded as feasible options, however, depends on the confidence the system provider has in the inviolability of the associated hardware, and the reliability and cost effectiveness of digital signature technology. Current peer-to-peer electronic purse transactions involve on-line recourse to the system provider at some stage. Because the smart cards most commonly used are presently of limited capacity, they are unsuited to token-based value unit systems which due to security precautions are memory intensive.

The fact that the amounts stored at any one time, and accordingly, the transactions possible, are typically restricted to low values also means that the loss or destruction of the card will be a much less serious risk than the loss of an account access device such as debit or credit cards. If value is not spent, for example because the card is being kept as a collectors item,<sup>53</sup> this may benefit the card issuer as it will have received value for the card, but no corresponding remuneration demand from a retailer.

A closed system is one where the card issuer provides all commodities purchasable by means of a card. Although the line of demarcation is not presently fixed, it may be said that a system is open where the card issuer is distinct and independent from the provider(s) of commodities which may be purchased by means of the card. Because open systems are commonly regarded as involving the taking of deposits, they are considered to involve 'banking business' and are accordingly subject to closer scrutiny by regulatory authorities. Open systems are however often set up in such a way that the card issuers are usually financial institutions franchisees of the SVC scheme operator (technical service provider).

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53 As occurred with electronic purses issued during the 1996 Olympic Games in Atlanta.

This enables SVC scheme operators to avoid being directly involved in deposit taking business, so they may typically perform system establishment, development and maintenance functions.<sup>54</sup> Several proprietary electronic purse trials have already been conducted in Australia, and franchises in schemes such as Mondex and Digicash have been purchased by the major banks.<sup>55</sup>

It is appropriate therefore to classify electronic purse facilities as 'near money' because they function as means of payment, they serve as a store of value, and operate as a means of exchange. They are not however denominated as coins nor do they serve as a unit of account, and importantly, they are usually prepaid or redeemable for a sum in money.<sup>56</sup>

### (iii) Digital Cash

A variety of terms invoking associations with money are used to describe an even more radical type of electronic transaction. Term such as 'electronic money', 'digital currency' and 'cybermoney' are used in different ways, sometimes to collectively refer to more than one generation of payment methods.<sup>57</sup> The term digital cash has been chosen here to refer to particular payment methods in which electronic impulses are dealt with as money. They are distinguished for the purposes of this analysis from current electronic purse transactions though they are closely related, and likely to become indistinguishable (in some applications) in the future.

The term 'digital cash' is used here to refer to those electronic impulses that are

54 See also the differing categorisations adopted by the Federal Reserve in seeking comment on its proposed amendments to EFT consumer protection regulation: off-line unaccountable, off-line accountable, and on-line systems. Factors relevant in determining the amount of regulation deemed necessary would include the system design, and amounts that may be stored on the card, with off-line unaccountable systems requiring minimal regulation, and on-line systems (carrying more than US\$ 100) being subject to most EFT regulation. See Federal Regulations 19, 662 and 19, 704.

55 The trials have involved systems developed by technical service intermediaries (Card Technologies Australia (Transcard), ERG Australia Ltd (QuickLink)), NBFIs (MasterCard, Visa) and banks (National Westminster Bank (now joined by the Midland Bank, and British Telecom in further developing Mondex)). The Transcard and QuickLink trials took place in the Sydney region (St Mary's and Newcastle respectively) while the MasterCard Cash trial was set in Belconnen (Canberra), and the Visa Cash trial on the Gold Coast. Mondex franchises were recently acquired by the four major banks, while Advance Bank has purchased a Digicash franchise. See generally, Australia Commission for the Future, *Smart Cards and the Future of Your Money* note 52 *supra*, pp 33-4; Australia Payments System Council, *1995/6 Annual Report* (1995) pp 60, 64-5; Wallis Committee, *Financial System Inquiry: Final Report*, 1997 at 106.

56 It is submitted that the description of smart cards as a new form of chattel money is incorrect – although the smart card is indeed itself a tangible chattel object valuable in itself, it is not the subject of the relevant transaction concerned. It is neither (re)materialised money, nor the most deserving contestant for the term 'electronic money' M Stathopoulos, "Introduction", in M Stathopoulos (ed), note 15 *supra* pp 10-12. See also Australia Commission for the Future, *Smart Cards and the Future of Your Money*, note 52 *supra*, pp 38-9.

57 See M Stathopoulos, *ibid* at 3-11. For example where the term 'electronic money' is used to refer to both electronic payments such as EFTPOS, and smart card transfers. At 12, "... the descriptions 'plastic money' or 'electronic money' suggesting currency of another kind are not exact...by the expression 'electronic money...all that is meant is payments effected by use of electronic methods from already existent claim money'. See also the Wallis Committee, note 55 *supra* at 103, where electronic money is used to refer to digital cash, electronic purses and credit card cyberpayment. This may be contrasted with A Tyree, *Digital Cash*, Butterworths (1997), which examines commerce in cyberspace generally, but restricts use of the term digital cash to digital tokens.

employed as more than instructions for the subsequent debiting/crediting of an account, or evidence bringing pre-agreed credit agreements into operation. The arrangement of digital cash systems are such that they envisage the exchange of electric impulses as the end, not merely the means of a transaction. In some system configurations therefore, digital data may be treated as value, rather than instructions about value.<sup>58</sup> Although present protocols incorporate single use tokens and occasional or eventual references to an issuing/validating financial institution, digital cash transactions forecast the eventual exchange of such value without the need for such reference. Protocols incorporating multiple use tokens will thus permit peer-to-peer transactions. In so far that transactions of this type are the most likely predecessor of freely circulating value, it is submitted that they are presently the most deserving of descriptive terms evoking the function of money.

The risk of double spending in these software based systems is presently controlled by the use of single use tokens and on-line verification. Transactions can be made anonymous or pseudonymous<sup>59</sup> by the use of 'blinding' technology. This enables the customer to scramble a self-generated coin in such a way that its serial number is temporarily obscured when submitted to the financial institution for validation: the validated note can subsequently be unscrambled before being spent by the customer and details of the underlying sale transaction need not be included in the data making up the token.

A simplified transaction might occur as follows.<sup>60</sup>

1. a withdrawal request or an electronic coin for  $n$  dollars generated by the customer is forwarded to the customer's financial institution;
2. the financial institution validates the value of the coin (issued in response to the withdrawal request or previously by its customer) by affixing its digital signature to the coin;
3. the coin is returned to the customer and may be stored in a purse program on a computer hard disk until required;
4. to spend the coin, the customer transmits it to a merchant;
5. the merchant verifies the digital signature of the customer's bank validating the coin;
6. the merchant checks that the coin has not already been spent referring to an on-line register of coins in circulation or previously spent coins;
7. the merchant delivers the subject commodity of the purchase transaction to the customer;
8. in a single use token system, the merchant returns the coin to the financial institution in exchange for a new coin or, a credit for its value

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58 This will be especially so where only the originating issue of the value, but not subsequent exchanges of the data are associated with a pre-payment. It is likely, however, that the exchanged data will retain a redemptive value.

59 For the spender of the coin, the customer.

60 For simplicity, the customer and merchant are assumed to be customers of the same financial institution.

to the merchant's account. In a multiple use system, the merchant may also store the coin on computer hard disk until it is required for subsequent spending.

One issue very significant to the viability of electronic peer-to-peer transactions is creditworthiness – the creditworthiness of validating or certifying institutions participating in such schemes. The identity of the issuer of electronic value intended to circulate between users will significantly affect its acceptability – more confidence would be reposed in value issued by an established financial institution over that issued by a little known or new entrant technical service provider. Users would seek reassurance that the value they accept and exchange is genuine, and worth the value it purports to embody. Cryptography and associated digital signature technology will thus also play a crucial role in its acceptance. The choice of cryptographic protocol utilised will determine the mode of value certification as well as the amount of privacy accorded transaction details. The extent to which such electronic currency could be exchanged for a corresponding amount in tangible currency by the holder would also affect its acceptability and scope of circulation.

The risk of 'counterfeited' copies of electronic value plays a significant role in the arrangement of present systems. The current preference for electronic purse systems has been attributed in part to the fact that it is presently impossible to make software based systems secure.<sup>61</sup> In addition to a basic assumption that the smart card's hardware is tamper-proof, informed choices between on-line or off-line verifications of value, and trade-offs balancing the costs of verification against the amounts at risk at any given time are made. Although most software token based protocols presently involve an on-line authentication step, some configurations rely on the detection of double spending after the event rather than by its active prevention by the maintenance of on-line registers.

It is probable that digital currency, if and when it eventuates, will be based on multiple use token based systems. The portability and/or (in)violability of the media upon which such value could be stored would however also raise many security issues<sup>62</sup> as would the possible location of substantial amounts of value outside conventional financial domains.

#### **D. Re-evaluating a Narrow Concept**

##### *(i) The Characteristics of Money Revisited*

It is sometimes said that money is only as good as the debt upon which it is issued, and that it is functional only because it is widely desired and acceptable. It has also been noted that incontrovertible money was called 'faith money' because

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61 A Furche and G Wrightson, note 49 *supra*, p 20.

62 Including risks posed by (unauthorised duplication, multiple spending) and posed to (robbery, irrecoverable destruction of storage media with value) the holder of value.



it had only a token value supported by the fiat of the governing authority<sup>63</sup> – the degree of public confidence reposed in the (viability and reliability of its) issuer will therefore be crucial to its acceptability.<sup>64</sup>

A broader perspective, stripping fiat currency of its mystique, may view fiat money as circulating obligations (indirectly) linked to state debt obligations. The currency embodies undertakings made by the government that it has sufficient assets to maintain the face value of the currency, and that it will exchange in certain circumstances a worn out unit with a newer one of equivalent value. As it is incontrovertible, it may not be redeemed as such, and for this reason cannot be regarded as creating a direct debt owed by the state to the holder. The financial system from this perspective facilitates the exchange, distribution and control of such obligations, and a sale transaction in this context might involve:

1. an obligation (the debt) binding on the buyer to furnish valuable consideration;
2. a valid assumption that the debt may be settled by the buyer transferring to the payee currency issued by the government;
3. the understanding that the currency is valuable according to its face value and capable of exchange for this value at the whim of the holder;
4. the understanding that possession of such currency does not endow a right to demand any redemptive value; and
5. the exchange of currency which is valuable because it embodies undertakings by the government that it possesses the authority and assets sufficient to maintain the face value of the note or coin.

A broad definition of money including both currency and ‘near money’ generations could thus be formulated if their most basic common characteristic, the systematic and orderly exchange of obligations, was to be regarded as the most crucial and significant feature. This would permit the inclusion, within such a definition, of the more abstract methods of payment. It is doubtful, however, that such a broad definition would be of more than limited use to a legal analyst because it ignores or obscures differences between commodities, an account, consideration, a payment, a debt and other concepts that are relevant to the settlement of obligations without necessarily being money, legally speaking.

It is obvious, however, that payment transactions are becoming increasingly

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63 The fact that currency is no longer full-bodied however has meant that inflation is now an ever present risk. The natural limitations upon semi precious metals which may have restrained the minting of currency do not apply to fiat money, making it theoretically possible to ‘make money out of thin air’. This is one obvious reason why monetary policy is a crucial part of governance – the nature of the monetary system is such that a constant shifting and balancing of obligations is imperative. If this were not done, the system of circulating obligations would escalate out of control, and a situation of runaway inflation would eventually cause the entire system to crash.

64 Furthermore the greater the public confidence in the currency, the greater the public demand for it would be – this would make its acceptance as the settlement of a debt more likely. This is one of the rationales behind the view that ‘anything which is widely accepted as a means of payment or a medium of exchange can be regarded as money’. See B Felmington and W Coleman, note 2 *supra*, p 7.

abstract.<sup>65</sup> From its origins as a thing in possession, money evolved to become a thing in possession embodying a thing in action and it now progresses towards being the intangible embodiment of a chose in action. The potential for abstract elements is introduced once the exercising of rights apart from the possession of an object becomes an option within the transactions framework – this potential has been significantly utilised by the more recently developed payment methods. As transactions have become less tangible and more abstract, the concept of value has also become more abstract and less tangible. This is leading in some instances to a convergence of the medium of payment and value of payment, so that it is now difficult to distinguish the two. In such cases the digital data instructing the transfer of value from a transferor-payer to a transferee-payee itself in effect is treated as value to the benefit of the transferee-payee. The security and ease of such electronic transactions, their irrevocable nature and speed and other such features are likely to encourage the increased use and acceptance of such transfers. As they begin to be used in large numbers, no doubt those espousing wider definitions of money will unhesitatingly identify such transfers as money.

(ii) *Digital Cash As Money: Characteristic Comparisons*

It remains to be considered whether abstract electronic value transactions have the potential to be legally regarded as money. Although the future is yet to unfold and predictions about future developments are necessarily speculative, the features identified above provide a useful basis for the consideration of this issue.

Digital cash may in the near future manifest more features associated with money. It presently serves as a medium of exchange and as a store of value: technical and contractual system arrangements may constitute token transfers as a means of final payment whereby debts are extinguished unconditionally. It is also likely that tokens will be denominated into money units of account, and protocols developed that enable the issue of fungible digital coins. Though it is conceivable that digital coins may be rendered legal tender, and thus become the unit of account themselves one day, it is unlikely that this will occur in the near future.

It is likely that multiple use digital coins will come into use, and these may acquire at least a de facto negotiability. Even where each transfer results in the accumulation of data about the transactional path of the token, it may be a question of policy, rather than of fact as to when the electronic instrument constituting the coin will be deemed sufficiently different to amount to a new one.<sup>66</sup>

There will however be differences. The multiple spending of coins for example, assumes a different significance in currency and digital coin systems. Whereas it is difficult to counterfeit tangible currency, and holders are in most cases effectively prevented from spending the same coins or notes more than once without an intervening transaction, it would not be difficult for the average user to make

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<sup>65</sup> See Tables One and Table Two below.

<sup>66</sup> This would technically preclude the electronic instrument from being regarded as negotiable. However the rules relating to paper based negotiable instruments, fixed by custom and policy rules are such that certain signatures and other markings (which are changes) to the document do not prevent further negotiation. On-line verification or reloading requirements would also affect the factual negotiability of the tokens.

multiple copies of validated digital tokens and to attempt to spend them. The copies would be completely identical to the originally validated token, unlike counterfeited notes and coins which would be discernibly different, yet possibly not void ab initio. It is arguable that any of the coins (including the originally validated coin) could be spent validly, after which all the remaining copies would be rendered invalid. The same coin would also be validly spent by a spender if the spender previously re-acquired it as the payee of another transaction. Rather than being void ab initio, it would be the spending of one of any several copies that would render the others counterfeit.

Returning to the issue of abstractness, the transaction process may be widely trusted and used and accepted in practice as value, and still never the less be regarded in law as the means of effecting the transaction (the medium), rather than the end (value sufficient to finally extinguish a debt). The fact that currency is likely to continue as legal tender, and continue as the ultimately desired end of a payments transaction for the foreseeable future means that SVC and digital cash systems are likely, for the time being, to be designed as controvertible systems – this also would confirm their status as the means rather than the end of a payments transaction. As long as a means of payment is not legal tender, it requires in law, the express or implicit approval of the creditor, of its tender as the means of extinguishing a debt. The need for such consent, even where it is readily inferred will also suggest that the system is still operating as a means rather than the payment itself.

### *(iii) Digital Cash As Money: Underlying Transactions*

Unlike in the case of electronic purses, a digital cash transaction between a payer and payee is not a credit transaction. As the payee immediately receives value in the form of a token that may be either redeemable at the option of the payee, or non-redeemable but valuable in itself as currency, the transaction will culminate in a final payment where it is structured so as to not be dependant on authorisation or clearing procedures. Relations between the issuer of the value and the payer of the value will accordingly become more remote. This is because the issue of value may be based on pre-payments by the initial holder to the issuer, but subsequent holders will increasingly possess the electronic value as the result of transactions with a previous holder of the value, and the value will in effect be operating as currency.

It is notable that no debt will be created between a supplier of goods or services (to the payer) merchant and issuer in such situations if the digital cash is constituted as a non-redeemable currency. Where the digital cash is redeemable for conventional cash, it most likely will in effect incorporate an undertaking by the issuer to exchange the digital coins for conventional currency creating a debt that may be settled by conventional cash on demand.

### III. A TRANSIENT SUMMARY

Dynamic technological developments in the present decade have meant that the financial system is in a state of flux. Its scope, structure and manner of operation are presently evolving at a very rapid rate. Changes in payment systems are renewing debates and inspiring theories about the nature of money.

The quest for a comprehensive, universally applicable definition of money is in the opinion of this writer, a vain one. The actual or potential existence of such a definition however is often assumed and this is at the root of many interdisciplinary disagreements on the nature of money. A more realistic objective is the formulation of workable definitions for specific disciplines or fields. Though it must be recognised that doctrinal biases will inevitably inform the formulation of definitions in different disciplines and fields, this is not to say that they are necessarily mutually exclusive – questions about the validity of economic policy implementations may be ultimately determined by legal processes and thus legal doctrine and interpretations, for example.

Narrow definitions of money are deeply rooted in the law, and these have yielded doctrinal and policy distinctions that have influenced judicial thinking for many years. These distinctions derive mainly from features of tangibility and form that were traditionally significant distinguishing factors. The decreasing tangibility and increased abstractness of contemporary payment methods is now testing those distinctions. Legal outcomes may however depend on matters of form and adherence to doctrinal policy rather than *de facto* circumstances arguing for a change in approach.

It is not contended that the legal concept of money must always require tangible form. Rather, it is observed that the distinctions presently drawn between significant concepts are such that they may not be disregarded, though they may be becoming less compelling. Requirements of form continue to exert influence upon the validity of transactions and this presently has this ultimate effect of confirming electronic transfers as the means rather than the end, so that they are not yet regarded as electronic value *per se* in law. Such distinctions permeate legal reasoning and they permit the adoption of broader concepts as the context permits for strictly limited purposes only.

The precedent bound and relatively static nature of the legal process however may be a factor contributing to the testing of conceptual definitions by technological developments. There are serious risks, it is true, to be guarded against in hastily departing from tested doctrines and procedures: the taking of an unduly cautious approach compounded by the natural tendency of law to lag behind technology may, however, if care is not taken, result in legal remedies in this area being outdated, irrelevant, or even unjust.

Existing technology provides the scope for the development of wholly abstract forms of value and the eventual acceptance of such digital money as the perfect equivalent of tangible currency is no longer a far fetched possibility. The development of legal concepts and doctrine in this area needs to be kept under close scrutiny in order that they remain relevant and in step with related technological developments. Internationally topical matters such as the

contemplated regulation of electronic commerce<sup>67</sup> are also likely to be influenced by the manner in which money is conceptualised.

There can be no doubt that payment systems and the financial traffic they process have, in the last few years, undergone radical changes - there has been a blurring of boundaries, sometimes even a convergence of concepts, and commerce has been forever changed. There is a way to go, however, before the rustle, chink and jingle of currency, though dimmed by the increasing use of electronic payments, is replaced by the silence of abstract equivalents whizzing by in cyberspace. Further developments are yet to occur before electronic value can truly be regarded in the legal sense as money.

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67 See for example the deliberations of the Attorney-General's Electronic Commerce Expert Group in its Issues Paper (1997) <<http://law.gov.au/ahome/advisory/eceg/ecegissue1.htm>>, and their Final Report, *Electronic Commerce: Building the Legal Framework*, March 1998 which may be found at <<http://law.gov.au/ahome/advisory/eceg/ecegreport.html>>. Both were significantly influenced by the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce, available at <<http://www.un.org.at/uncitral/english/texts/electcom/ml-ec.htm>>.

TABLE ONE

GENERATION GROUP OR INSTRUMENT TYPE	ABSTRACT QUALITIES	NOTABLE /ABSENT FEATURES
<ul style="list-style-type: none"> <li>• objects of barter</li> <li>• trade with valuable objects</li> </ul>	<ul style="list-style-type: none"> <li>• None (wholly tangible)</li> <li>• None (wholly tangible)</li> </ul>	<ul style="list-style-type: none"> <li>• means of exchange</li> <li>• physical possession</li> <li>• physical transfer</li> <li>• intrinsic value</li> <li>• variable store of value</li> <li>• unit of account<sup>A</sup></li> <li>• extinguishes obligation</li> </ul>
<ul style="list-style-type: none"> <li>• commodity money</li> </ul>	<ul style="list-style-type: none"> <li>• None (wholly tangible)</li> </ul>	<ul style="list-style-type: none"> <li>• means of exchange</li> <li>• physical possession</li> <li>• physical transfer</li> <li>• negotiability</li> <li>• intrinsic value</li> <li>• excellent store of value</li> <li>• unit of account</li> <li>• extinguishes obligation</li> <li>• standard of deferred payment</li> </ul>
<ul style="list-style-type: none"> <li>• fiat money (controvertible)</li> <li>• fiat money (uncontrovertible)</li> </ul>	<ul style="list-style-type: none"> <li>• Limited (chose in action over commodity value, tangible form)</li> <li>• Limited (fiat value, chose in action for replacement, tangible form)</li> </ul>	<ul style="list-style-type: none"> <li>• legal tender</li> <li>• means of exchange</li> <li>• physical possession</li> <li>• physical transfer</li> <li>• perfect negotiability</li> <li>• face value/token value</li> <li>• store of value</li> <li>• unit of account</li> <li>• fungible</li> <li>• extinguishes debt/final payment</li> <li>• standard of deferred payment</li> </ul>
<ul style="list-style-type: none"> <li>• negotiable instruments</li> <li>• plastic money</li> </ul>	<ul style="list-style-type: none"> <li>• Significant (chose in action, data as instructions, tangible form)</li> <li>• Significant (chose in action, data as instructions, intangible form, tangible access device)</li> </ul>	<ul style="list-style-type: none"> <li>• means of exchange</li> <li>• physical possession</li> <li>• physical /abstract transfer of instructions</li> <li>• instructions evidence of rights to value</li> <li>• (limited) negotiability<sup>B</sup></li> <li>• face value/variable value</li> <li>• indivisible</li> <li>• deferred payment</li> <li>• extinguished debt on settlement</li> <li>• conditional/final payment</li> </ul>

<ul style="list-style-type: none"> <li>• EFTs</li> <li>• SVCs</li> <li>• Digital Coins</li> </ul>	<ul style="list-style-type: none"> <li>• Significant (chose in action, data as instructions/value, intangible form, tangible access device, single use)</li> <li>• Pronounced (chose in action, data as value, intangible form, tangible access device, flexible use)</li> <li>• Pronounced (chose in action, data as value, intangible form, (in)tangible access device, flexible use)</li> </ul>	<ul style="list-style-type: none"> <li>• means of exchange</li> <li>• limited de facto negotiability<sup>C</sup></li> <li>• instructions evidence of rights to value</li> <li>• abstract instructions for transfer = value</li> <li>• variable/restricted value</li> <li>• limited fungibility<sup>D</sup></li> <li>• final payment</li> </ul>
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- A valuable objects only
- B cheques only
- C SVCs and digital coins only
- D digital coins only

TABLE TWO

CONVENTIONAL TRANSFERS	ABSTRACT TRANSFERS
<ul style="list-style-type: none"> <li>• remotely located abstract value</li> <li>• rights to value evidenced in tangible instrument</li> <li>• transfer of rights to value by physical transfer of instrument</li> <li>• rights to value enforced yielding currency</li> </ul>	<ul style="list-style-type: none"> <li>• remotely located abstract value</li> <li>• remote access to abstract value</li> <li>• remote transfer of abstract value</li> <li>• rights to value enforced by remote transaction</li> </ul>