"The Dawn of a New Age"

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Abstract

The efficiency of business transactions has been increasingly important in the digital age, and an issue that has arguably evolved as a result of free-markets. Already, advances in technology has revolutionised the medium of exchange from tangible hard-cold cash, to an intangible medium, "digital data". Of significance is the case Visa International Inc v Reserve Bank of Australia[1] *("Visa's case") which defines and highlights the shifts taken place in a "payments system" ("PS"), both regulatory and structurally.*

The current electronic PSs such as ATM, EFTPOS and credit cards are account-based PSs. Several new types of hardware-based PSs (e.g. Smart cards) and software-based PSs (e.g. DigiCash), have also developed. For instance, advancements in the internet technology have enabled the "Egold" company in 1996 to trial private digital competing currencies. Of recent, there has been increasing recognition by treasury groups who have lobbied for the development of a national based payment system. This article will address the significance and evolution of PSs in Australia and overseas.

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[1] *Visa International Service Association v Reserve Bank of Australia* [2003] FCA 977.

1. Introduction

In the absence of precedent, there is freedom in classifying these new electronic PSs. For instance, whether the electronic messages, which underlie new electronic PSs, are characterised as an account based system ("ABS") or embodied value system ("EVS"). Answering this will help identify whether this form of "digital-data" is in fact (1) "money" and (2) functions like "cash"; also (3) how far off is "digital legal tender"; and (4) can it be classified as current legal tender. However, a major challenge for an accepted electronic PS in Australia is for development of a PS that is efficient, cost effective and has consumer confidence.[2] The advancement now in the banking industry encompasses the lobbying of treasury groups to the development of a national based payment system.[3] This is already occurring in the Australia and the EU. This article will address the evolution and regulation of payment systems, with a focus on the *Visa* case and recent submissions called by the Reserve Bank of Australia into this area.

2. Australia's Financial System Changes

Technological advances have brought about a restructuring to the financial system and new regulations. For instance, in response to the Wallis Report,[4] the Payment System Board ("PSB") was introduced within the Reserve Bank of Australia ("RBA") from 1 July 1998. This reflects the importance to maintain an efficient PS which then results in stability and confidence within the economy. Further, technological growth has revived the question of "what is money?", as has led to radical development to payment media and PSs and the regulation of these systems.

2.1 Money … what is it?

The question "what is money?" lies at the heart of analysing the changes in both the PS and payments. Many attempts have been made to summarize the essence of

[2] Ibid.
[3] Andrew Woodward, 'Latest RBA move highlights the need for independent review' (Press Release, 11 December 2006); Reserve Bank Bulletin (May 2006) <http://www.rba.gov.au/PublicationsAndResearch/Bulletin/bu_may06/banking_fees_aus.html> at 25 July 2007.
[4] See Australian Financial System Review (The Wallis Report), 18 March 1997; Public hearing of the House of Representatives Standing Committee on Economics, Finance and Public Administration, *Opening remarks to Parliamentary Committee review of RBA and PSB Annual Report, Sydney,* 15 May 2006 (Mr. Bruce Mansfield, Executive Vice President, Visa International).

money into an all-embracing definition. Yet, money's ambiguousness has resulted in the inclination to vary the concept according to the context.[5]

Economists define money as anything that is widely accepted in payment for goods, used as a medium of exchange, and expressed as a standard unit in which prices and debts are measured.[6] Such a conception was favourably received in ***Moss v. Hancock,***[7] in which "money" was defined to mean "***that which passes freely from one hand to another throughout the community in final discharge of debts…***"

There is no clear legal definition or statement of "money". "Money" may be described as being all those chattels issued under the authority of the law, denominated with reference to an account, that are meant to serve as a universal means of exchange in the state of issue.[8] Further, legal evaluations of money are primarily concerned with determining whether debt obligations have been validly settled.[9] It could one be regarded as the embodiment of a chose in action and has the effect of bringing about final payment and final extinguishment of a debt.[10] It is money's fully negotiable nature which allows this to happen.

Legal concepts of "money" have become increasingly difficult to address as Australia moves towards potentially becoming a "cashless" economy. Payment by cheques, credit cards, electronic payments ("EPs") and Electronic Funds Transfer ("EFT") is treated as conditional discharge of a debt and therefore "near-money". It is the interbank instruction which is transferred electronically.[11] Notably, plastic credit cards are mere means of effecting final payment between cardholder and seller, but are not money *per se*. Extinguishment of the debt will not be effected until clearing and settling has occurred.

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[5] In ***Re Stonham*** [1963] 1 All ER 377, cash, ready money and money were interpreted to include a deposit account.
[6] Glyn ***Davies, 'A history of money from ancient times to the present day'*** (3rd ed., 2002). See also D.H. Robertson, Money (Chicago: University of Chicago Press, 1962), 2-3.
[7] [1899] 2 QB 111, 116.
[8] Olujoke Akindemowo, 'The Fading Rustle, Chink and jingle: Electronic Value and the Concept of Money' (1998) 21(2) ***University of New South Wales Law Review*** 466.
[9] Above n 1, 136.
[10] See above n 7; see also ***Hill v R*** [1945] KB 329 where currency was found to not vest a claim in the holder.
[11] Kreltsheim, D, 'The Legal Nature of Electronic Money' (2003) 14(3) ***Journal of Banking and Finance Law and Practice***, 168.

The development of newer hardware-based PSs such as Stored Value Cards ("SVCs"), and software-based PSs such as digital cash ("DC"), raises the question as to whether bits and bytes, which represent "electronic value", actually constitutes "money".

3. Evolution of Australia's 'Payment' and 'Payments system'

Rapidly advancing technology is stimulating an inexorable change in what constitutes a PS and payment.

Payment by banknotes or coins passing from hand-to-hand constitutes an immediate transfer of value. However, this does not involve a PS.[12] PSs include tripartite or multipartite transactions. The RBA, in *Visa's case,* gave a wide interpretation to a PS under s7 of the *Payment Systems (Regulation) Act* [13] ("*PS(R)A*") , saying that "… *it was intended to be broad and includes procedures that relate to the system and those that relate to any instruments and the transfer of funds and that this description is wide enough to include Visa and Mastercard systems.*"[14] In that case, Visa International has launched legal action against the Reserve Bank of Australia – the company claiming the central bank's proposed credit card reforms go beyond its regulatory charter.

Rapid technological advances have resulted in a paradigm shift in the process of bringing about final payment, with the introduction of electronic payment media such as credit cards and debit cards. All major electronic PSs in existence today are ABSs.[15] Each system uses electronic means to convey an instruction in respect of the transfer of value (e.g. an electronic terminal, telephone or magnetic media) from or to an "account".[16] Financial intermediatories have in place a number of systematic procedures, which ensure the transfer of value and security of the whole framework.

4. New Payment systems.

[12] Above n 11, 175.
[13] *Payment Systems (Regulation) Act 1998* (Cth).
[14] Above n 1, 148.
[15] Above n 11, 167.
[16] Sneddon M, *Electronic Funds Transfer*, in Blay and Clark (eds), *Australian Law of Financial Institutions* (2nd ed, 1996), 325.

The rapid development of the internet, combined with improvements since the 1970s in cryptography, has resulted in the development of several new software-based PSs, and hardware-based smart card systems. The introduction of a new PS is to "… *entice customers away from branch banking, thereby lowering the cost of transactional banking for financial institutions.*"[17]

Already, the list of new PSs has become bewildering, with various smart cards and internet-based PSs set to enter the market. There have already been four smart card trials in Australia, and it is expected that there will be an Australian trial of the UK-based smart card system, Mondex. They function independently of the technological infrastructure underlying the established electronic payment mechanisms such as ATM, EFTPOS and credit card facilities.[18] However, the contractual background to a new electronic PS is likely to include a matrix similar to credit cards,[19] and be justified a PS under section 7 ***PS(R)A,*** in the same way as in ***Visa's case***.[20]

Visa's case accepted that "*…an efficient payments system is one in which the trade-off between risk and cost reflects society's preferences.*"[21] If these new PSs gain public confidence and become accepted PSs, then they should be subject to regulation by the RBA. Pursuant to s10B of the *Reserve Bank Act 1959* (Cth), any new PS should *"promote efficiency of the payment system, competition in the market and provide payment services, consistent with overall stability of the financial system.*"[22] However, Visa and Mastercard is distinguishable since their system is limited to clearing and settling governmental units of account. The stored "value" and digital tokens in these new PSs do not necessarily constitute "money" or "legal tender". Additionally, unlike the robust and stable technology underlying ATM, EFTPOS and credit card facilities, development of new PSs such as "DigiCash", have either failed commercially or gained only modest market acceptance.[23]

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[17] A L Tyree, *Virtual Cash III* (1997) <http://austlii.edu.au/~alan/netpay3.html> at 11 July 2007.
[18] Above n 11, 169.
[19] Ibid.
[20] See above n 13.
[21] Above n 1, 155.
[22] Above n 1, 812.
[23] Above n 1, 161.

4.1 Hardware-based Stored Value Cards ("SVC")

A SVC, such as a "Smart Card", is a hardware-based PS and is referred to as an electronic "wallet" facility. Unlike debit cards, this "payment" is effected by a communication from card-to-card without reference to a central host computer. While it may constitute a PS under s7 *PS(R)A,* it cannot be said that a SVC is classified as an account based PS.[24]

4.2 Software-based "Digital Cash"

In comparison, a software-based PS depends primarily on electronic messages or packets of information contained in intangible computer programs.[25] Over the last decade, "DigiCash" has seen this system being primarily associated with electronic token payments over the internet, and represents an "open system". In the absence of precedent, there is considerable scope to characterise this system as either an ABS or EVS. David Chaum, the inventor of "DigiCash", has said that:

> "*It's more a matter of how you want to interpret the technical system than there really being a clear distinction between an electronic form of money itself compared to just an electronic banking system*"[26]

If characterised as an EVS, it presents a revolutionary opportunity to transform payments.

4.3. Is Digital Data "money"?

As outlined above, there is no precise legal definition of "money". *Visa's case* says that the function of "money" "*…includes deposits with banks to which the depositor has an unconditional right to immediate use.*"[27] In an "open-system" such as DC, the digital data which represents value, does not assume the quality equivalent to money until it has gone through a validation process. The payee does not have an

[24] Above n 11, 173.
[25] Ibid.
[26] Cited in Böhle K, *The Potential of Server-based Internet Payment Systems: An Attempt to Assess the Future of Internet Payments*, (European Commission, Institute for Prospective Technological Studies, Electronic Payment Systems Observatory, Background Paper No 3, March 2001) p 25 <http://www.e-pso.info> at 11 July 2007.
[27] Above n 1, 254.

unconditional right to immediate use of the proceeds.[28] This would mean that DC currently serves as a medium of exchange and store of value, but is not yet "money" – rather, that these transactions are the most likely forerunner of free circulating value.[29] This is consistent with the approach taken in *Visa's case* that "*…upon payment, there is no `payment in cash'"* [30] since, at that point, the creditor does not receive the equivalent of cash or as good as cash.

Alternatively, if a digital cash PS may be classified as an EVS. Electronic impulses, which underlie the functioning of this system, may embody rights analogous to those which inhere in the possession of a paper negotiable instrument or chattel money.[31] The security, speed and ease of the payment transactions in an EVS, its irrevocable nature and digital data being used as a form of intangible property, identifies such transfers as money.

Electronic purse facilities may be classified as "near money" because they function as means of payment, serve as a "store of value" and operate as a means of exchange. They do not serve as a unit of account, has a limited capacity due to its memory chip and they are usually prepaid or redeemable for a sum in money.[32]

4.4 Do these new payment systems constitute a "cash-like" functionality?

"Cash-like functionality" invokes that authorisation need not be sought for each transaction, and that there are minimal, if no, processing costs associated with each transaction.[33] Notes and coins are freely accepted, with confidence and at face value, as a means of exchange. The same cannot be said for DC, which requires electronic verifications mechanism to ensure it is authentic and that the amount has not already been spent.

Section 44 of the *Reserve Bank Act 1959* (Cth) provides that the primary objective of "cash" is that it is "*intended for circulation*". This section provides that:

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[28] Above n 1, 255.
[29] Above n 8, 12.
[30] Above n 1, 254.
[31] Above n 11, 162. See also Rhys Bollen, 'The development and legal nature of payment facilities.' (2004) 11(2) *Murdoch University Electronic Journal of Law*, 1.
[32] Above n 8, 9.
[33] See above n 1, 220.

> *"(1) A person shall not issue a bill or note for the payment of money payable to bearer on demand and intended for circulation. Penalty: $1000.*
>
> *(2) A State shall not issue a bill or note for the payment of money payable to bearer on demand and intended for circulation*."

It therefore cannot be said that DC is "intended for circulation", since it operates on the basis that each time it is used it is cancelled. Similarly, where a digital coin operates so that upon presentment to a retailer, a new serial number is issued by the issuing bank to the retailer and replaces the digital coin that is used. Cash is not constrained in this way. [34]

Yet, it may be too early to discount the potential of these new PSs. Another view is that an EVS operates in a way functionally equivalent to the physical transfer of chattel money from hand-to-hand without the intervention of a payment system provider.[35] This is unlike ABSs, where there is involvement of a payment system provider. Further, unlike ABS, electronic messages in an EVS are dealt with like money and are employed as more than instructions for the subsequent debiting/crediting of an account, or evidence bringing pre-agreed credit agreements into operation.[36] This approach represents a "conceptual leap" from ABSs to an EVS.

Comparatively, it cannot be said that "electronic wallets" have a "cash-like functionality". They are a "closed system", which means that the card issuer provides all commodities purchased by means of a card. "Cash", on the other hand, is a token value unit system and functions in an "open system". However, electronic wallets, such as smart cards, ***have*** many functions over and above those associated with "cash-like" payments. For instance, its tamper resistant chip enables it to store encrypted messages, thus securing the identity and other details of the cardholder. "Cash" has its own identity and value, but not that of its current holder

While this digital form may be spent in the same manner as "cash", it is important to note it is not legal tender ***per se***. Notes and coins are issued by the RBA, under

[34] See *The Commission of Taxation for the Commonwealth of Australia v Woodside Energy Ltd* [2006] FCA 1375.
[35] Above n 11, 162.
[36] Ibid.

government supervision, whereas digital cash may be issued by private payment system providers who may or may not be financial institutions.

The decision to use electronic money as a means of exchange should be based on its merits, and not on any fallacy.

5. Is "Digital Legal Tender" far off?

Banknotes issued by the RBA and coins issued by the Australian Federal Treasury constitute currency and legal tender in Australia.[37] Accordingly, legal tender is "… *currency that may not legally be refused in the payment of a debt.*"[38]

Technological innovation has been a major force in shaping financial service delivery over the past decades, and is likely to accelerate.[39] Currently, Australia already possesses the technology to develop digital legal tender, but appears to have taken no steps to develop let alone implement it.

It is questionable whether electronic value in the form of digital data, can potentially be regarded as legal tender. For currency to constitute legal tender, it should continue as the ultimately desired end of a payments transaction.[40] It would appear logical that the PS facilitating digital legal tender payments, would be an internet based "open-system". However we have already seen that SVC and digital cash systems represent controvertible systems. Their status would be the means rather than the end of a payments transaction.[41] The need for validation of a digital signature, for example, demonstrates that this system is still functioning as a method and not the payment itself.

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[37] *Reserve Bank Act 1959* (Cth) s36 (banknotes) and *Currency Act 1965* (Cth) s14 (coins).
[38] Cited in Akindemowo, O, above, footnote 3, p 10; see also the *Currency Act 1965* (Cth), s16 and *Reserve Bank Act 1959* (Cth), s16.
[39] Sneddon, Mark, *Electronic Authentication and Legal Liability: Scoping Study For NEAC* (14 April 2000) Clayton Utz, <http:// www.claytonutz.com.au> at 11 July 2007.
[40] Above n 8, 9.
[41] Above n 8, 12.

An important question is: *who* would issue the digital legal tender? Since DC in its purest form, reflects a non-political unit of value,[42] it would appear unlikely that Central Banks would be the issuer. This would result in a reduction of government monopolies to control and trace the information.[43] Accordingly, it would be unlikely to constitute legal tender.

If digital legal tender *is* in fact successfully issued, then it must be authenticated and valued so that it is a competitive and reliable tender in the global financial market. Government-issued currency may experience a substantial decline or even disappear as a transaction medium.

In addition, to gain mass market acceptance, society must be in fact ready and willing to embrace it. This would seem highly unlikely since, at this point in time, digital legal tender is still at a conceptual stage and is some distance from becoming a reality.

6. Are private digital competing currencies far off?

> *"Money does not have to be created legal tender by government: like law, language and morals it can emerge spontaneously. Such private money has often been preferred to government money, but government has usually soon suppressed it."*[44]

There is no reason in principle why money should not be supplied on the same basis as all other commodities in the market – competitively. Private money has long been a goal of a number of advocates of the free market, who have primarily viewed it as the means to control inflation.[45] It is now possible for private digital currency issuers to compete without the high information and transaction costs which have burdened multiple-issuer systems in the past. Any individual or institution can issue a private

[42] < http://www.austlii.edu.au/au/other/CyberLRes/1995/smart/> See also, Martonis, J W, *Digital Cash & Monetary Freedom*, April 1995 <http://www.isoc.org/HMP/PAPER/136/html/paper.html> at 11 July 2007.
[43] Compare, for example, *Australian Retailers Association and Others v Reserve Bank of Australia* [2005] FCA 1707 at [492]
[44] Hayek, F A, *Denationalisation of Money – The Argument Refined, Institute of Economic Affairs*, 1978.
[45] Ibid.

currency that is independent of the national currency and underpinned by contract law.[46] It can be said that "*…he who owns a computer not only owns a printing press, but also a mint.*"[47]

Consumers demand a risk-free, portable and an inexpensive way for 24 hour peer-to-peer transactions, which is not dependant on any physical location. In 1996, America developed and trialled "E-gold" – 100% backed by gold bullion and to date, has had only moderate success.[48] Its access base is through internet and mobile-phone technology, which functions similarly to an EVS. Combined with its current interdependency on national currency, paves the way for further development in becoming an accepted "open" PS.

However, since private-digital currency is not legal currency *per se*, issuers will require a period of brand-name recognition, consumer confidence and long-term trust. The key challenge is to secure widespread acceptance of the non-government money – irrespective of whether it is embodied in paper, on a chip or merely consists of digits in cyberspace. Some firms may at first have an advantage over lesser-known name brands, but that may change if the early leaders fall victim to monetary instability. In Australia, Metlink is already in the process of introducing a Smart Card ticketing System with the proposed name "Myki" - [49] the function of which primarily to store data or information storage. While this is arguably a small step in the larger scheme, this comes at a prefect time in the digital age to test the reliability and consumer confidence in a person's key to the information super-highway.

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[46] Ibid.
[47] See Griffith, K, *The Big Picture: The Importance of Digital Currencies in the 21st Century*, (The Gold Economy Magazine, 2001) <http://www.escapeartist.com/Digital_Currencies/Digital_Currencies5.html> at 11 July 2007.
[48] MacQueen, Bruce R, Rahn, Richard W, Rogers, Margaret L, *Digital Money and it's Impact on Gold*, (Research Study 24, World Gold Council London, 2000) <http://www.caslon.com.au/moneyguide8.htm> at 11 July 2007.
[49] See Melbourne Metlink website <http://www.metlinkmelbourne.com.au/layout/set/print/fares_tickets/concessions/seniors/seniors_sunday_pass/more_about_seniors_sunday_pass> at 30 August 2007.

7. Would private-digital currencies be subject to governmental regulation?

Issues arise as to whether this PS be a privately-operated system or a PS subject to the control by the RBA. A legal approach would be to establish whether a private currency issuer can be classified as a "financial institution".[50] Given their private nature, it would seem unlikely that this private system would be subject to governmental regulation of financial intermediation and payments. The aim of a private digital currency system is to bring benefits of competition and choice – namely lower costs and better performance – to an area where government has dominated supply for most of this century. Digital cash is rooted in the tradition of the Common Law and the Law Merchant – a system whereby private, general rules and income independent rules allow individuals to make decisions on the basis of their own information.[51]

In addition, private issuers, compared to banks, would be small. Harsh regulation would clearly place them at a distinct disadvantage to their competitors and may deter future development of such private technology.[52]

The next 20-30 years may see this develop to undermine the monopoly supply of money by governments, and erode the ability of the banks to control the pace of economies with monetary policy (which usually takes the form of interest rate adjustments). The public would have the choice between different private money suppliers, based around a legal framework not of discretionary government control, but of private contractual monetary obligations based on generalised rules.

[50] Above n 1, 150.
[51] Above n 44.
[52] See John Simon, 'Payment Systems Are Different: Shouldn't Their Regulation Be Too?' (2005) 4(4) *Review of Network Eco*nomics 364, 364-5.

8. Conclusion

Major developments in technology and the internet have led to a paradigm shift in what constitutes a PS and payment. While face-to-face payments still occur, the future may see more technology-based payment transactions, which efficiently facilitate global dealings. Despite only gaining modest market acceptance, new electronic PSs have emerged which function independently of established ATM, EFTPOS and credit card payments. Notwithstanding a lack of precedent, the divergent classification of these PSs demonstrates a conceptual leap from these ABSs to EVSs, such as DC.

When a legal analysis is undertaken in light of *Visa's case*, it appears that new PSs like SVC and DC are still a far cry from being classified as "money", or function like "cash". Further, it is difficult at present to see how electronic value, on either hardware or software based electronic media, has the potential to be legal tender. There is still much scope left in the "conceptual leap" of EVSs, as we enter the dawn of a new era and into the development of private digital competing currencies.