



CENTRAL BANK OF  
TRINIDAD & TOBAGO

# The Role of Banks Relative to Non-Banks in Electronic Money Operations

A Paper by a Sub-committee of  
The Payments System Council  
September 2011

# Introduction

---

Several factors have influenced the development of e-money internationally. In developed countries such as Japan, which is recognized as being one of the most technologically advanced in the world, the widespread use of e-money has been driven by the advancements in smart card and chip technology. These technologies have enabled developers to utilize mobile instruments with integrated Radio Frequency Identification (RFID) chips to make payments. Persons can make purchases from their e-money accounts by simply swiping their cell phone on an electronic reader. To derive the true benefits of e-money services in Japan, core business functionality is bundled as the average spend and income on a single transaction is low and the associated operational costs can be significant.

In underdeveloped countries like Kenya, where there are geographical challenges due to the vast expanses of rural districts and where there is a significant unbanked population, e-money has provided the solution for carrying out even the most basic of day-to-day financial transactions. Companies like M-PESA have found significant success, serving as many as 13.8 million users with an average of US\$ 200 million per day in person to person transactions (March 2011). This form of e-money relies heavily on the cellular network infrastructure and uses basic text messaging standards to execute transactions.

This paper examines the level of involvement of banks and non-banks in e-money operations and the changes this has brought to risks in the payment system. Special focus is placed on the situation in Trinidad and Tobago relative to these issues. The approach is first to define the terms “bank”, “non-bank” and “e-money”, secondly to examine the roles of banks and non-banks in the global payments environment as well as in Trinidad and Tobago and thirdly, to discuss some implications for risks in payment systems. It ends with some concluding remarks.

# Definitions

## A. BANKS VS. NON-BANKS

The legal definition of the terms banks and non-banks varies somewhat from country to country. In Trinidad and Tobago, the Financial Institutions Act, 2008 (FIA, 2008), defines a bank as “any institution which carries on business of banking and business of a financial nature.” For the purposes of this discussion, a non-bank refers to any institution that is not a bank and therefore includes non-bank financial institutions as well as non-financial institutions.

## B. E-MONEY

Internationally, definitions of e-money have been evolving in order to keep pace with the emerging forms of this product as technology develops. Currently, the literature defines e-money as electronically stored value, generally used for making retail or micro-payments. Some typical e-money uses include the purchase of cinema tickets and paying for services such as transportation and car parking facilities. These payments have been classified under two categories: (i) card based and (ii) network or software based e-money.

Card based e-money is issued largely by banks in the form of smart cards or pre-paid cards and is the more traditional form of e-money. In a card based system there are generally four entities involved- a loading agent, a customer, a merchant and a collecting agent. The loading and collecting agents are usually banks participating in the particular system and the customer uses a smart card or prepaid card on a Point of Sale (POS) terminal at a merchant. The customer’s “wallet”, held in the prepaid card, is a simple, stand alone sub-system, while the POS terminal and the networks to which it is connected constitute a more complex sub-system.

---

<sup>3</sup>Banking business or “business of banking” means the business of soliciting and receiving sums of money from the public on current or deposit account which may be withdrawn on demand, by cheque, draft, order or notice, and the solicitation and granting of credit exposures, by a person whether as principal or agent and includes payment card business and, generally, the undertaking of any business appertaining to the business of commercial banking. (FIA 2008 PART III Section 16 (2))

<sup>4</sup>“Business of a financial nature” means the solicitation and collection of funds in the form of deposits, shares, loans and premiums and the investment of such funds in loans, shares and other securities and includes- (a) the performance for reward of the functions and duties of a trustee, administrator, executor or attorney; and (b) the issue of electronic money, but does not include the business of banking. (FIA 2008 PART III Section 17 (2))

Network or software based e-money uses computer networks such as the internet or mobile networks and is sometimes referred to as “digital cash”. Neither the customer nor the merchant keep the electronic value in devices held in their possession. This value is stored in customer and merchant accounts on servers accessed via the internet or telecommunication system. The customer and merchant sub-systems are therefore software processes running on a central server.

There are four basic models of network or software based e-money - Bank led, joint ventures between banks, Telco and third party providers, Telco led, and Third party led. These can be differentiated on the basis of the following:

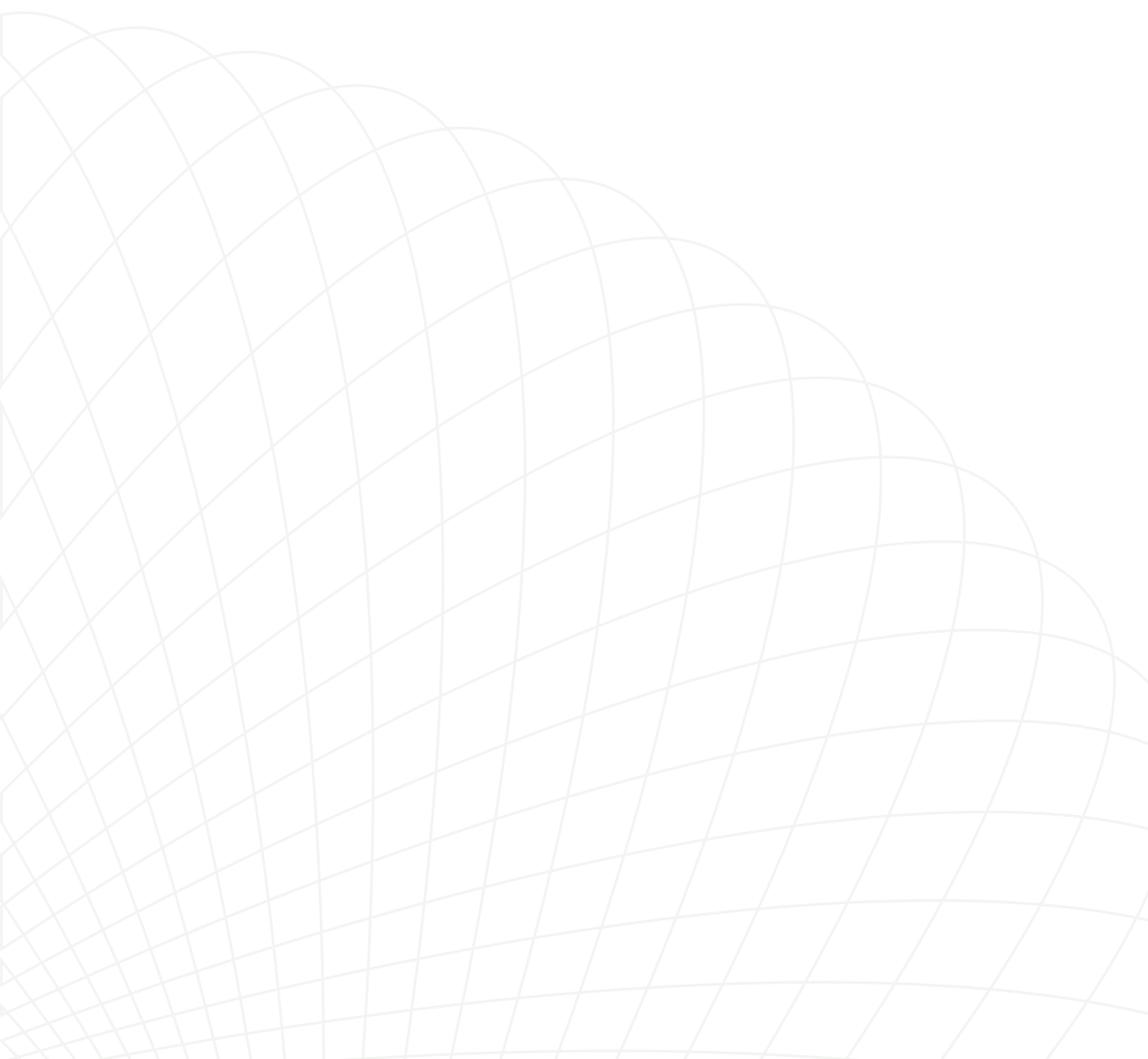
1. Responsibility for the direct customer relationship
2. Ownership and management of the funds
3. Responsibility for the transmission of the payment instruction (e-wallet accounting)
4. The location of cash in/out points
5. The dominating brand

The Table below identifies the characteristics of each model and names of some examples.

Models Key Issues	Bank Led	Joint Venture	Telco Led	Third Party Providers
Who owns the customer relationship	Bank	Bank/Telco	Telco	Third Party (MPSP)
Who holds the funds	Bank	Bank	Bank	Bank
Who carries the payment instruction (accounting)	Bank or Telco	Telco	Telco	Third Party (MPSP)
Cash-in/out Points	Banks Retail Agents	Banks Retail Agents	Banks Retail Agents	Authorized Retail Agents
Whose brand dominates	Bank	Bank and/or Telco	Telco/MPSP	MPSP
Examples	FNB (South Africa)	MTN (South Africa) SMART (Philippines)	M-PESA (Kenya) G-CASH (Philippines)	Obopay PayPal

In Trinidad and Tobago, the use of e-money is still essentially limited to the more traditional card based form. This is reflected in the FIA, 2008, which defines e-money as “... monetary value represented by a claim on the issuer, which is—

- (a) stored on an electronic device;
- (b) issued on receipt of funds of an amount not less in value than the monetary value issued; and
- (c) accepted as a means of payment by persons other than the issuer, so however that the funds referred to in (b) above shall not be treated as a deposit ...”



# The Changing Role of Banks and Non-banks

---

Traditionally, commercial banks have played a key role as repositories for value used to make payments as they have been the holders of consumer and corporate deposit account balances. In order to provide their depositors with a means of accessing their funds to make payments, without necessarily withdrawing actual physical cash, banks over time expanded their operations into the arena of providing a range of payment services, including the running of payment messaging and processing systems. Banks also facilitated the acceptance of payment orders drawn on other banks and as such developed clearing and settlement arrangements among themselves and central banks. This meant that banks carried out a variety of roles in the payment chain, namely the provision of payment infrastructure including customer front-end and merchant communication platforms, transaction authorization services complete with the requisite fraud and risk management tools, clearing and settlement services and post transaction services such as reconciliation, analysis and reporting.

With the rapid advancements in technology, it is no longer necessary for value to be stored in bank accounts, and messaging and processing systems do not need to be run by banks. These developments have led to a reversal in the expansionary thrust of banks as it became more cost effective to outsource the infrastructural support for their payments activity to developers and other third party contractors of payment services. Banks have been outsourcing such activities as data processing, gateway provision and switching services, authorization services, fraud and risk management services, file transmission and related tasks.

Concomitantly, non-banks have taken up key roles in the range of activities that take place before and after the execution of a payment transaction such as the development and provision of hardware for electronic payments (for example, card production and POS devices) and the establishment of contractual relations with cardholders and merchants. Thus non-banks now play a larger role in the payments

space. Today the settlement function is perhaps the one area that still remains the sole purview of commercial banks in the payment chain. Figure 1 below illustrates this new environment.

**Figure 1. The Role of Banks and Non-Banks in payments-Today**



Source: Presentation by Mr. Alexandre Stervinou at the BIS /CEMLA Regional Payment System Workshop held in POS, Trinidad on 8<sup>th</sup> February 2011

# Risk Implications

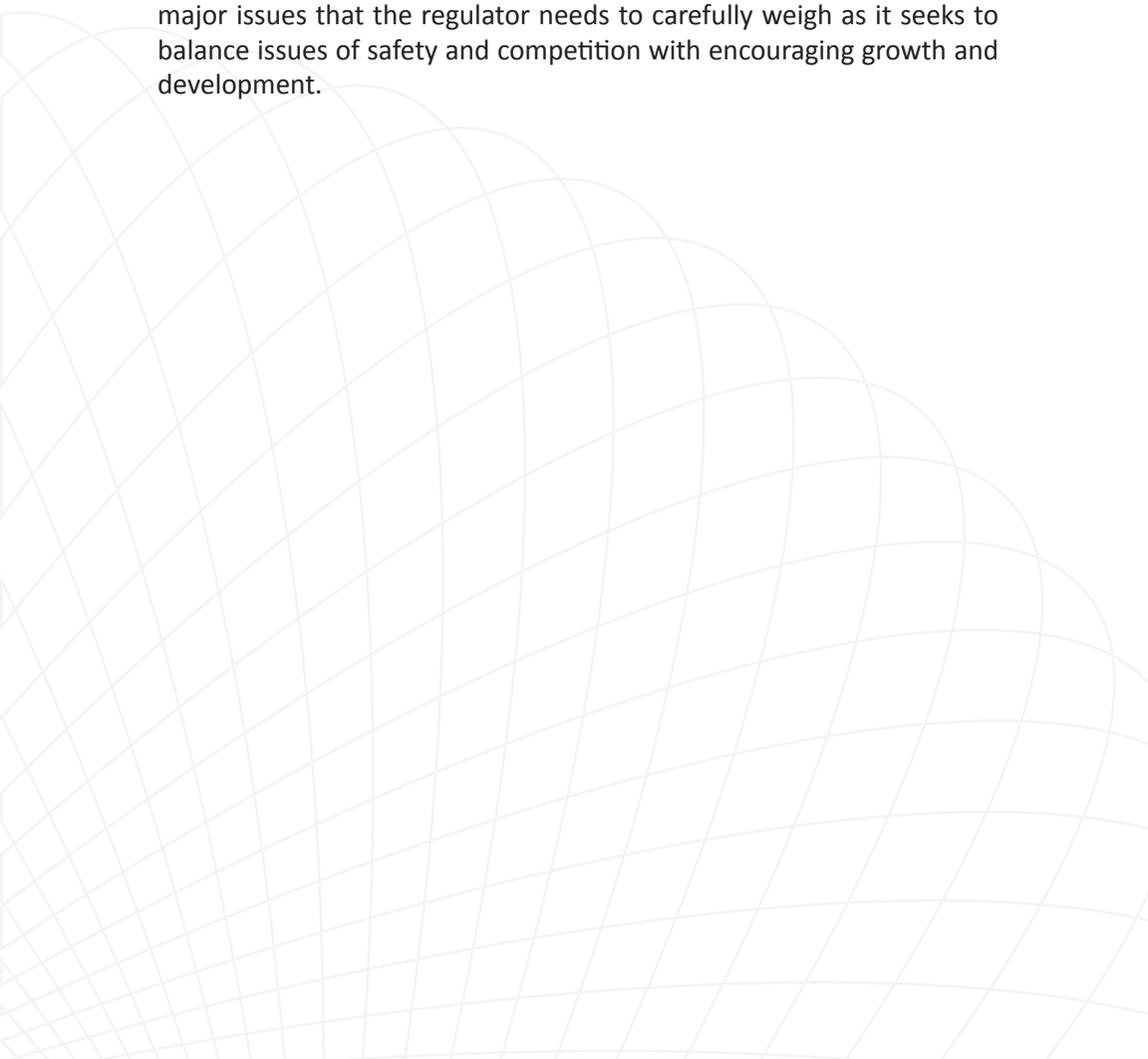
---

The increasing role of non-banks in these emerging payment arrangements have shifted the traditional risks associated with payments activity, such as credit, liquidity, and settlement risk. Institutions, whose core functions and competencies do not necessarily pre-dispose them to comprehensive understanding or adequate management of such issues, now assume the responsibility. Moreover, the growth in the usage of payment instruments which are processed online and via open networks and characterized by real-time transfer of value has introduced a different business model. Whereas previously, banks were responsible for managing communication and processing of customer payment transactions, with this new model all the parties involved (ranging from Telcos, to third party providers and commercial banks) communicate with each other and interact freely. It therefore is a more complex structure with many points of contact with the sharing of sensitive data at various stages along the processing chain. This introduces new risks in terms of data security and data (privacy) protection.

There has also been a blending of payment technologies resulting in a blurring of the borders between payment instruments. For example, a payment card is also e-money by virtue of a pre-payment function. A payment card is also a micro processing chip in a cell phone which is issued by a telecom operator. A cell phone text messaging network is now capable of facilitating person to person payments without the intervention of any traditional financial intermediary. Furthermore, the nature of competition among these networks raises the possibility that, just as a firm can quickly gain dominance in such an industry, so too can a firm quickly fail. The complex relationships of modern payment instruments with the blending of payment technologies have also introduced new risks. These developments are requiring a new regulatory framework to adequately protect the interests of the public and to preserve financial stability.

Regulators therefore, need to implement an adequate supervisory framework for modern payment systems. Perhaps non-banks involved in payment systems would now require some of the regulating oversight traditionally focused on banks in order to preserve the safety

and soundness of the payments system and the public's confidence in electronic payments and money. Such a regulatory framework normally involves elements such as capital adequacy (to ensure sustainability of the business activity), fit and proper requirements (to ensure the competency and capacity of the issuer), minimum disclosure requirements (which promote adequate transparency and access to information necessary for the regulator to assess performance and viability of the entity) and risk management policy requirements (to ensure adequate attention and treatment of relevant risk issues). Information technology security may also need to have some level of regulation to ensure availability, reliability, protection and privacy. There are a range of other issues which also need to be considered such as: Which non financial entities should be allowed to issue e-money? What, if any, are the purse limits to be set for e-money issuance? Should e-money be issued in domestic currency only? These are all major issues that the regulator needs to carefully weigh as it seeks to balance issues of safety and competition with encouraging growth and development.



# The Role of Banks and Non-Banks – The Trinidad and Tobago Context

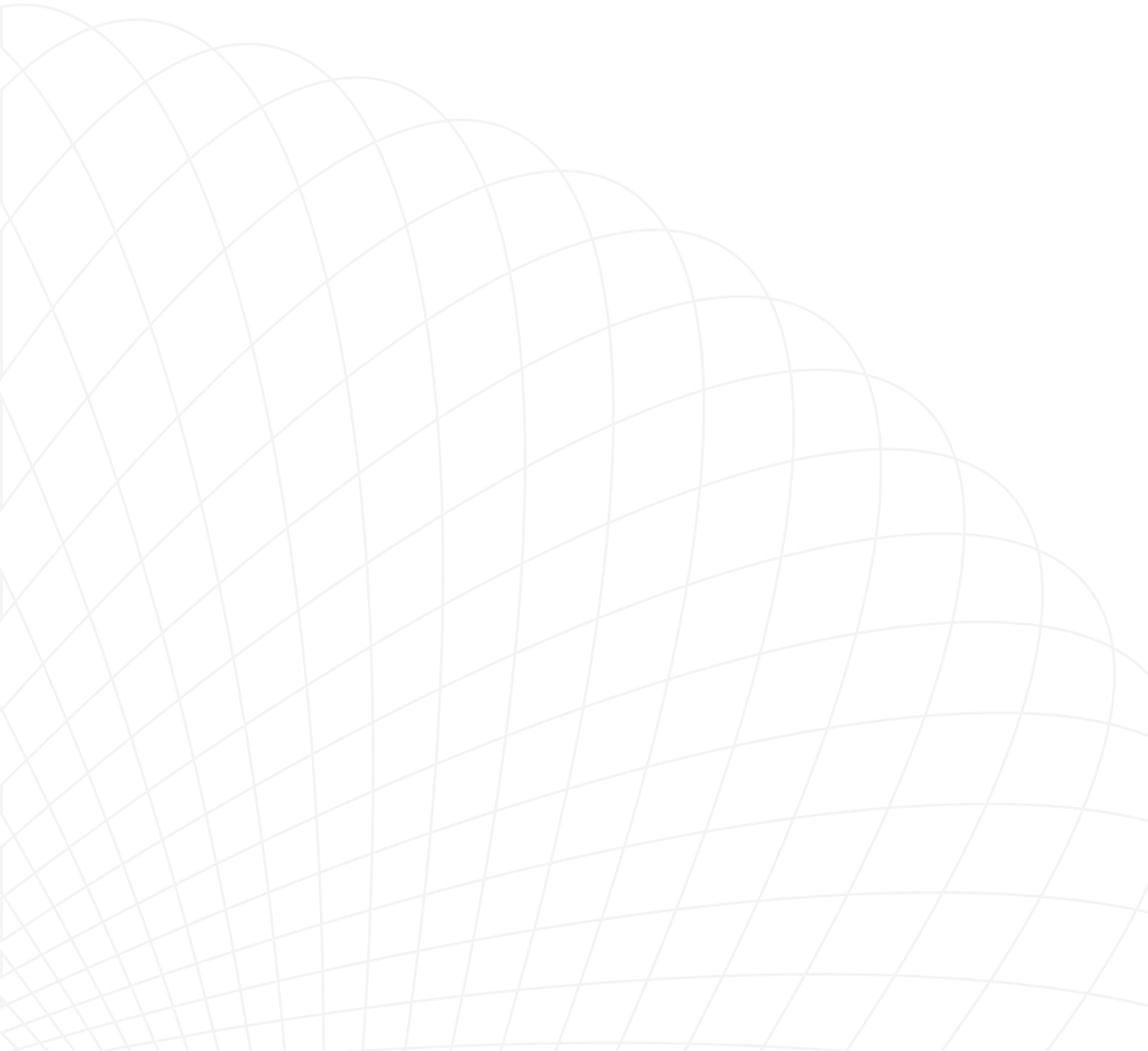
---

In Trinidad and Tobago, card based e-money has existed for some time in the form of internationally branded pre-paid cards offered by commercial banks. In general, payment services are mainly provided by the commercial banks which are regulated entities subject to prudential requirements. Non-bank institutions such as credit unions have only within the last decade begun to offer limited payment services in the form of internationally branded debit cards to their membership. Interest in software based e-money systems, has only recently been gaining the attention of public and private enterprise.

Whereas in Japan the prevalence of smart phone technology and the bundling of services have facilitated the ready adoption of e-money, in Trinidad and Tobago, smart phone technology is limited in its market share and application and internet penetration levels are still relatively low. Also, unlike in developing countries such as Kenya, with its vast rural communities and where bank penetration is low, Trinidad and Tobago has a comparatively small land mass and a fairly large banked population (about 80 per cent).

The established motivation factors for the introduction of software based e-money, save and apart from a proliferation of cellular phones, are therefore not obviously present. This notwithstanding, some have suggested that the introduction of facilitating technology into the local environment will in itself spur innovation as users come to appreciate and recognize new payment possibilities. Others have argued that what is critical is for a country to have a firm vision of what is required for meeting its specific need. In any event, the inclusion by the Government of e-money type instruments among payment options in the new legislation being drafted to govern government payments, could help to encourage the development and adoption of e-money locally. It has been argued that in small developing countries such as Trinidad and

Tobago, often innovation of this kind needs to come from the authorities and the Government's acceptance and use of e-money, could prove to be the catalyst for wider adoption.



# Conclusion

---

The introduction of electronic payment has clearly brought about a shift in the roles of banks and non-banks in the payments space. . The role of non-banks in the provision of e-money also raises some new issues in connection with the capacity of these entities and their financial soundness. This changing dynamic is evident in the e-money operations in both developed and developing countries.

E-money can bring great conveniences to the public but it comes with its own set of risks. Apart from those normally associated with payment systems such as liquidity, credit and settlement, e-money is perhaps most susceptible to operational, fraud, and legal risk. The examples of Kenya and Japan suggest that certain ingredients need to be present to make the issuance of e-money a viable business opportunity. In Trinidad and Tobago the impetus may well be the drive of the Government to modernize its payment activities.

## References:

---

Business Journals- Comparative Economic Studies- Spring 2001, *“E-Money in Transitional Economies”*

Yingling, Edward L-June 2007- *“Reviewing the Payments System: Will Banks Keep Their Central Role?”*

Reserve Bank of Australia -Phillip Lowe, Assistant Governor (Financial Systems) - *“Non Banks in the Payments System: A Central Bank Perspective”*. Remarks prepared for the Federal Reserve Bank of Kansas City Conference on Non Banks in the Payments System: Innovation, Competition and Risk.

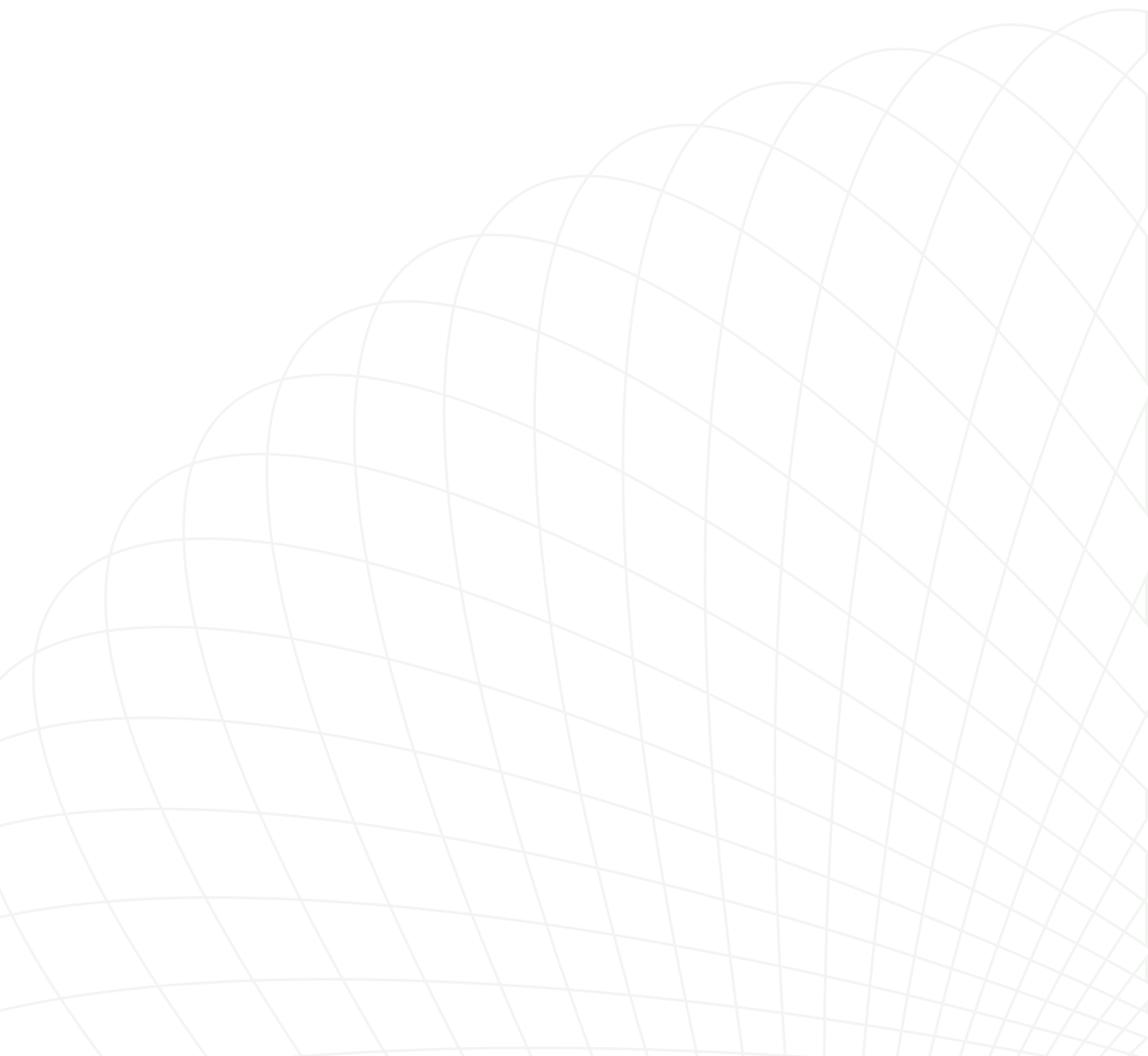
Banque de France –Alexandre Stervinou, Deputy Head Non Cash Means of Payment Oversight Division- *“The Role of Non-Banks in Retail Payments”*. Presentation prepared for the BIS/CEMLA Regional Payment Systems Workshop-LAC in Port of Spain, Trinidad. February 2011

Tim Mills, AAP, Clearing House Payments Company, George Thomas, AAP, Radix Consulting Corporation, - *“Mobile Payments in a Developing Country”*. Presentation prepared for Global Payment Strategies, Paris, France, February 2011

*“e-Money Today and the Evolution of Electronic Payment Systems in Japan”*- Consulting Services Division Financial Business Consulting Dept. NOMUA RESEARCH INSTITUTE, Ltd. Etona UEDA –July 24, 2008

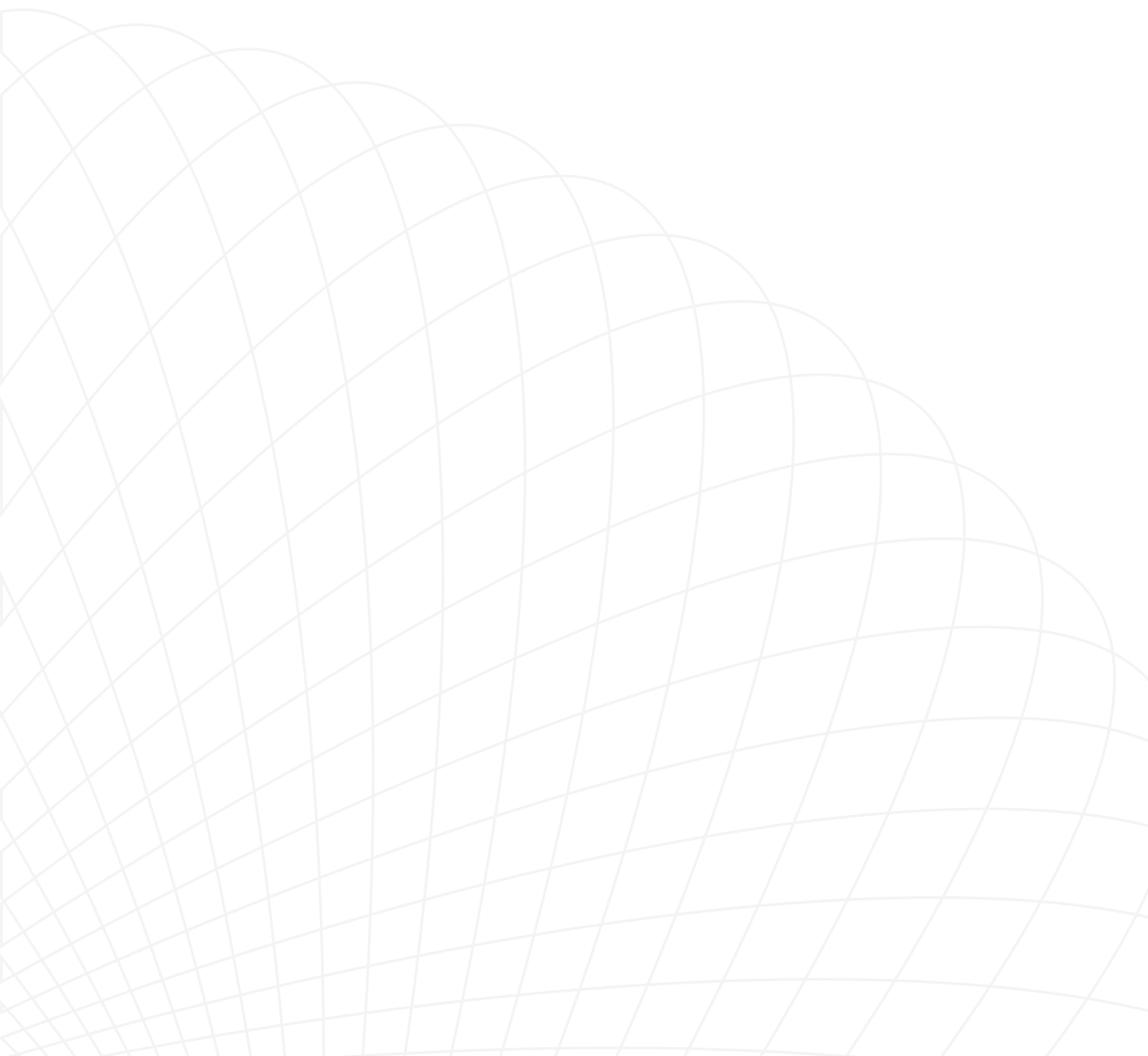
# Notes

---



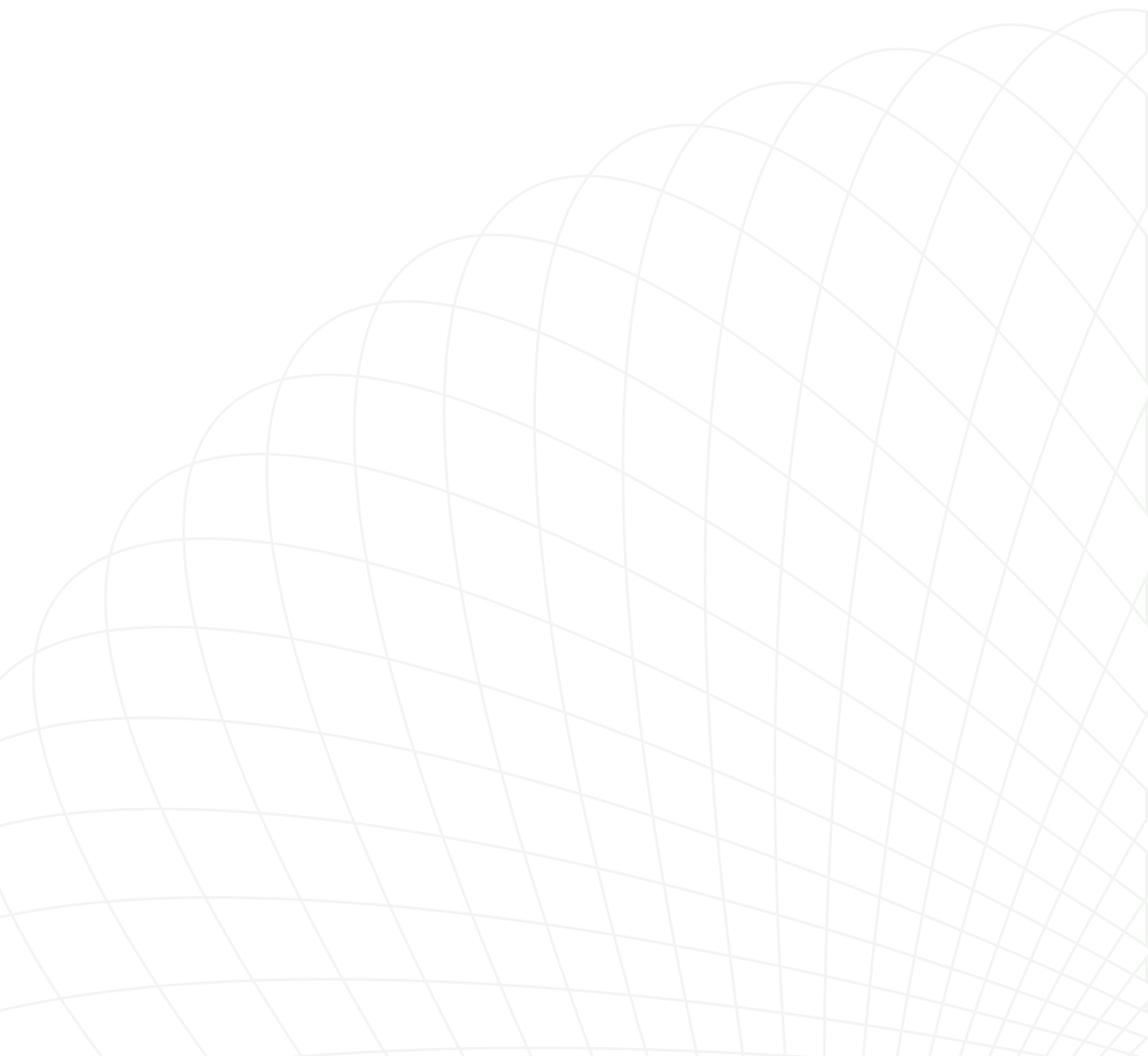
# Notes

---



# Notes

---



ISBN 978-976-8134-16-5

© Copyright 2012 Payments System Council

