

Key lessons

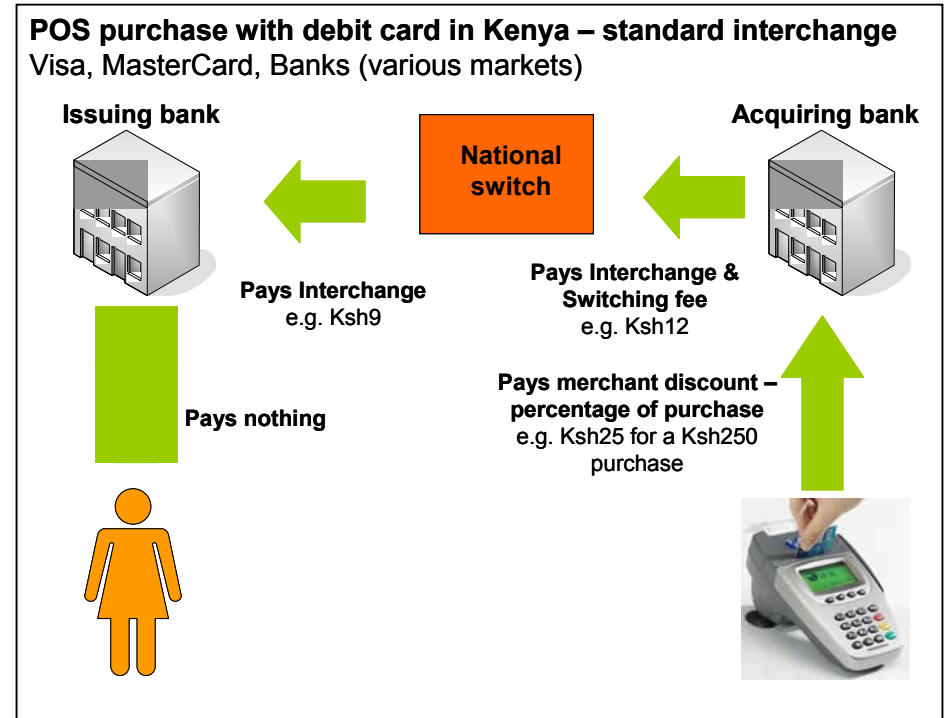
1. ATMs: Are profitable at around 6,000 transactions per month
2. POS Business case depends on pricing models, normal system is through charging rental of POS which gravitates against POS for low income transactions.
3. Cash back not attached to purchase could destroy the current pricing model which is a percentage of each transaction.
4. Branch infrastructure – regulate strongly (Kenya) or weak with insurance cover (SA)
5. POSS devices have increased functionality
6. POS deployment and cash accumulators.
7. Some e-banking pricing

1.1.1. POS

POS is the newest channel deployed by banks in Kenya. It is currently one of the lowest cost channels that can be deployed by banks. International benchmarks indicate that the cost to a bank of POS can be as low as Ksh5 per transaction. The relatively lower capital cost of the device (as low as \$250) and lower running costs in comparison to ATMs make POS' ideal channels in low transaction environments.

POS devices can be used for cash withdrawals. A "cash-back" transaction allows customers to draw cash while paying for goods in a retail environment. Because the merchant is credited into his/her account by the customer to the value of the cash withdrawn, electronic funds in the bank remains within the bank and are not withdrawn from the bank in the form of cash.

From a bank sector perspective a cash-back at POS has no impact on the total bank sector balance sheet. In an ATM transaction, the total balance sheet decreases with every cash withdrawal at an ATM. This has significant implications for the size and profitability of the banking sector. Banks generate revenue from interest income and transactions fees.



The dominant POS' business model is based on the credit card model in which the retailer is charged a merchant discount (a percentage of the transaction value) for processing a purchase transaction electronically. By charging the merchant for the transaction, the transaction cost is not carried by the customer. Historically this played a key roll in growing the credit card market and overcoming customer resistance to using credit cards.

The reasons for charging the merchant are twofold:

1. Merchants benefit most from a customer making POS purchase. Merchants reduce cash-management costs as funds are credited directly into the merchants account. The automated reporting process also facilitates in reconciliations and accounting.

2. Fewer “missed purchases” that occur when a customer wishes to make a transaction, but lacks the cash, but has funds in an account

For debit card transactions, a similar charging system is used. Merchants are charged a discount for debit card transactions, but they are typically lower than credit card transactions. This is because debit cards do not have the same benefits to customers as credit cards (principally the benefit of reversing transactions up to

6 months after the transaction took place). Fraud on signature verified cards is higher than on PIN based cards. Magstripe with signature credit cards are also more risky from a payments perspective than magstripe with PIN debit cards.

Debit cards in Kenya do not charge a transaction fee to the customer when transacting like some other emerging markets (South Africa, Brazil, India). This allows customers to make purchases with debit cards without attracting a fee for the transaction. In Kenya the cost of the transaction is covered by the merchant discount. This creates a cost that needs to be carried by the customer indirectly through higher prices charged by the merchant.

In low transactions volume and value environments, POS becomes unaffordable for merchants. This is because banks need to recover the (predominantly) fixed costs of deploying a POS. Fixed costs are partially covered by a monthly rental charged to the merchant. In low transaction value environments, banks also increase the merchant discount above high transaction value environments. This increases the transaction costs for merchants who then pass the costs on to their customers. Shopping at a merchant with a POS becomes expensive (in a low transactions value environment) than a merchant accepting only cash. This would make a merchant with POS less, rather than more competitive, than a merchant accepting only cash. It is therefore unlikely that merchants in rural areas of Kenya would want to deploy POS’ to acquire debit card transactions.

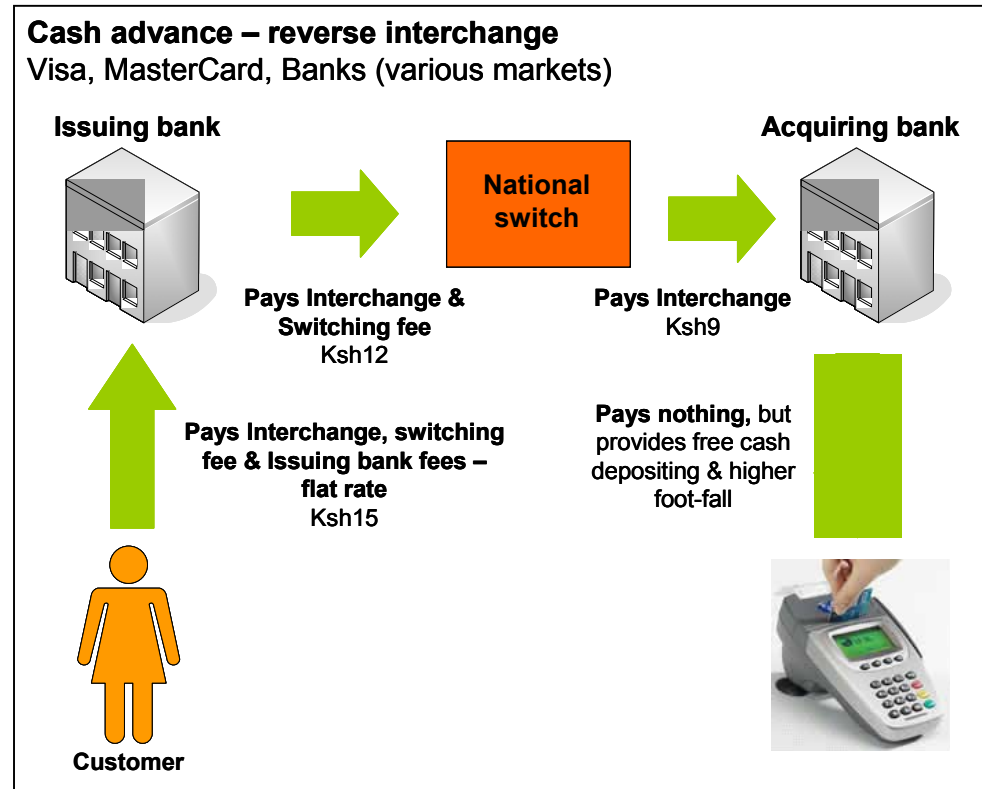
Table 1: Key Obstacles to Transactions Acquired at POS

	Credit Card purchase	Debit Card purchase	Cash Back	Cash Advance
Customer	Unavailable to low income customers	No obstacles	Tied to purchase - lack of choice; limited customer knowledge	No obstacles
Merchant	Merchant discount too costly	Merchant discount too costly	No obstacles	No obstacles
Bank	Banks do not want credit exposure to customer	Transaction too costly for bank	No obstacles	Merchant avoids merchant discount
Key stumbling blocks	1) Banks do not want credit exposures to these customers; 2) Low value transactions are too expensive for banks	1) Low value transactions are too expensive for banks	1) Channel not supported by banks through switch; 2) Limited customer knowledge; 3) Customers are forced to purchase	1) Merchants avoid the merchant discount;

Combining a purchase with “cash back” should assist merchants even more by allowing customers to remove the merchants excess cash holdings (thus saving the merchant from the need to make a trip to the bank). This is not however ideal for the customer.

However if a cash advance is not linked with a card purchase card associations fear that merchants might “cheat” the system by encouraging customers to withdraw cash and then make a cash purchase. This would have dramatic consequences for the card business at most banks:

1. Merchant discount revenues would fall
2. Bank costs would rise as they would now need to pay the merchant for providing a cash withdrawal fee (as in the ATM model the provider of infrastructure to facilitate withdrawals earns a fee).
3. Account balances would fall
4. Cash utilisation (with all its attended costs in the system) would not fall.



There is thus considerable resistance from the Card Associations to allowing member banks to provide cash advances from POS devices.

CASH BACK

Equally importantly cash from POS suffers from a large number of customer acceptance and marketing challenge. In many instances “cash back” solutions at point of sale have failed due to:

- Visibility – the till area in any supermarket is crowded with merchandise affording few opportunities for branding and visibility
- Teller training – tellers need to be properly trained and incentivised to encourage customer usage. This has proved difficult if the value of the transaction related fee is very low, and the number of customers wishing to use the service relatively few.

Thus a successful “cash advance” strategy needs to overcome visibility, customer education and teller training, without increasing risks to an unacceptable level. The alternative which is for all transactions to move to debit is only feasible if:

1. Transaction values are sufficiently high to cover the cost of the transaction without the merchant passing the extra transaction cost on to customers
2. customers make a large proportion of their monthly purchases at a single shop at infrequent intervals

1.1.2. BRANCHES

The current regulatory environment regarding branch deployment has been identified by banks as a key driver of the high cost of this infrastructure. Alternative mechanisms for indirect regulation can reduce these costs while maintaining similar levels of security of funds needed by the CBK. The alternative model has been successfully adopted by many central banks.

The alternative indirect regulation model utilises the ability of short-term insurance companies to manage risk to regulate the conduct of banks. Regulators relax minimum requirements for branches allowing banks to manage the branch construction process

Banks have responded to the relaxation of regulations by insuring the contents, including cash in vault, with private sector short-term insurers. These insurers assess each branch for risks and highlight improvements that should be made before the insurer covers bank property. In this way banks are forced to ensure that precautions are taken to avoid building and running risky branch infrastructure. The advantages for access are significant:

- Banks do not have to comply to building codes that may not be necessary for a particular environment
- Banks are able to manage their risk directly by modifying the characteristics of their branch network to reduce risks, i.e. by reducing cash in vault, locating branches in safer areas, using high qualified staff, hiring rapid reaction security companies to protect the premises.

South African banks are given the option not to insure their branches from theft. This is more risky, the cost of theft at branches is reflected directly in the banks income statement. In a small bank with limited Tier I capital this could result in a loss making position for the bank, resulting in bank failure. In the Kenyan environment, banks should be required to insure branches to an equivalent of the maximum amount of cash held at the branch. This ensures that:

- Losses from theft are not carried through to a bank's income statement, causing financial instability
- The CBK is able to easily verify whether insurance coverage is adequate for the branch, this reduces bank supervisions workload while maintaining bank stability
- Banks do not have to comply with a complex set of regulations (at high cost) aimed at achieving similar levels of security achieved using the indirect regulation model (at lower cost).

CHANNEL INNOVATION

1.1.2.1. ALTERNATIVE DELIVERY CHANNEL: MOBILE BANKING

Mobile banking applications have become increasingly popular in theory in emerging markets, particularly as a result of the success of SMART Money in the Philippines. In Kenya there are an estimated 6 million customers with cellular phones. This is about 2 times larger than the banked population, and offers a significant opportunity for banks to leverage mobile phone networks to deploy banking solutions.

Using mobile banking solutions to provide the point of access to social welfare recipients is however far from straight forward:

- Social welfare recipients will typically be below the income level where mobile phone ownership is prevalent.
- Mobile banking solutions are typically more expensive than transacting at a POS device or least cost card solutions
- While some mobile commerce solutions use sim cards to identify customers, accessing cell phones and security of initiating a transaction using a shared phone infrastructure creates huge payment and fraud risks for banks.

The mobile payment models that are most likely to create opportunities in the servicing of welfare recipients are those that can interface with card carrying welfare recipients, and where the merchant is able to use their mobile phone as an alternative to a POS device. For this to happen the merchants using the mobile phone as a POS device would need to be accredited and managed by a licensed bank or third partner payments provider with access to the payments system.

1.1.2.2. ALTERNATIVE DELIVERY CHANNEL: POSS

POSS leverage the low cost, low volume capabilities of POS devices to provide ATM like functionality in environments in which retail POS would not be able to function economically. The device used is a high specification POS device enabling a customer friendly interface. While more expensive than retail POS, POSS are still about 10 times less expensive (capital cost) than ATMs and do not require cash loading or storage. This significantly reduces monthly running costs. The device is configured to support similar functionality to an ATM. POSS leverage the cash accumulation characteristics of retailers/wholesalers to provide cash to bank customers.

POSS allow bank customers to withdraw cash (cash-advance). Customers initiate a cash withdrawal at the POS. The device then prints two vouchers debiting the bank customer account to the value of the cash withdrawn and crediting the merchants account with the same value. The bank customer then redeems the voucher at the merchant for cash. The merchant's voucher is used to verify the amount withdrawn and the customer.

POSS differ from Retail POS and Enhanced POS in a number of ways:

- **Customer facing:** POSS are configured to face bank customers like an ATM. This ensures that customer details are kept secure. Customers are then able to perform a number of non-cash transactions (balance enquiries, mini-statements and person-to-person transfers) without revealing the information to the merchant.

Table 2: Characteristics of potential POS device configurations

Genesis research, POS providers, industry experts

Type	Retail POS	Enhanced POS	POS
Transaction initiator	Merchant	Merchant	Customer
Transactions supported	Retail card acquiring; top-up; 'cash-back'; third party payments	Retail card acquiring; 'cash advance'; top-up; third party payments	Retail card acquiring; balances, mini-statements; 'cash advance'; cash deposit; top-up; remittances; third party payments
Interface with device	Card + PIN/Signature	Card + PIN/Signature	Card + PIN
Cost of device	Ksh15,000-55,000	Ksh15,000-55,000	Ksh20,000-200,000



- **Increased suite of potential transactions over retail POS:** POSs are configured like an ATM, but come from a retail POS environment. It is able to perform more transactions than either a Retail POS or an ATM. It is unlikely that a POS acquires retail purchases because of the disincentive to the merchant of acquiring the purchase. However, they can be processed by POSs without jeopardising the POS business model. POSs can also provide a range of basic ATM transactions.

1.1.2.3. POS DEPLOYMENT – WORKING WITH FMCG DISTRIBUTION NETWORKS

Finding cash-accumulators

Critical to the success of POS deployment is identifying locations where there is a sufficient amount of cash available to disburse to transactors. Cash accumulation points need to be accessible to individuals from both a geographical perspective (the closer to homes the better) and from a service perspective. The ideal businesses should operate in a retail environment that deals with the public on a daily basis and is a point at which individuals traditionally congregate.

The ideal points for the location of POSs are FMCG goods retailers whose customer base includes those who will be targeted for social welfare grants. Fast Moving Consumer Goods (FMCG) sustain the most comprehensive commercial distribution networks in Kenya. The network is designed to provide the highest possible level of coverage of consumers in markets in rural and urban areas. They are therefore geographically widely spread and provide the most comprehensive business coverage in rural areas. This guarantees that products are provided to consumers as conveniently as possible. The most likely point at which social welfare recipients will spend their grants is at the retail points (Dukkas, street vendors, small supermarkets) on FMCG products. By placing an acquiring device at these points, banks will be able to provide easily accessible distribution points for social welfare recipients where they spend the grant on consumables.

FMCG distribution networks are multi-tiered. In the case of Kenya, 4 easily identifiable types of business support distribution efforts of FMCG manufacturers:

1. **Key Distributors (also known as Super Distributors):** comprising no more than 10-15 businesses, Key Distributors purchase large volumes of an FMCG's product and distribute it (typically) within a specified geographical area. Key Distributors are normally restricted by the FMCG producer to distributing only their own product.
2. **Distributors:** Distributors provide added reach for key distributors into trading centres in rural areas. The significant distances from major centres into rural areas requires this added layer of distribution. (In Uganda, smaller distances mean Key Distributors are able to service trading centres themselves). They are responsible for ensuring that wholesalers in trading centres are stocked with the FMCG producer's product. Distributors can stock multiple FMCG producer products but have a specialisation in a type of FMCG product, i.e. cigarettes, soft drinks, cell-phone airtime. Purchases from distributors are mainly in cash and sales to wholesalers are also in cash.

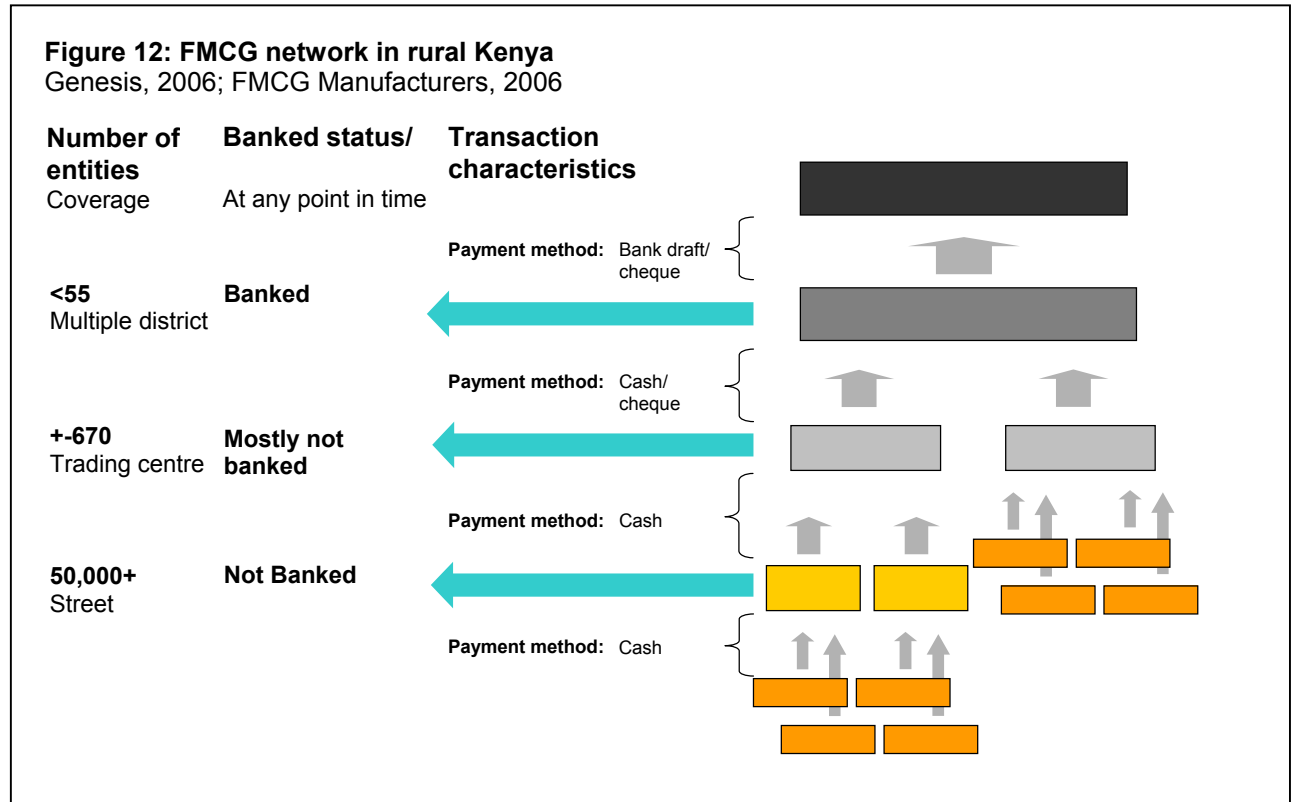
3. **Wholesalers:** wholesalers are based in major rural trading centres. They focus on providing retailers, and consumers, with products from a range of FMCG producers. Wholesalers can service multiple trading centres if close by. Wholesalers transact using cash.

4. **Retailers:** retailers include formal corner shops, informal stores located on street pavements and mobile hawkers. They provide distribution of product at a street and block level. Cash is the only form of transaction at this level.

Truncation of the FMCG distribution model as a result of cost cutting and falling profit margins has forced wholesalers and retailers to overlap. The number of tiers between the FMCG manufacturer and the customer can be as little as 1 in urban areas where large supermarket chains purchase directly from the FMCG manufacturer. In more rural areas the distribution chain comprises 3-4 tiers. However, wholesalers do sell product directly to the public.

POS' need merchants to have:

- **Significant cash accumulation characteristics:** since POS' need to process at least 1000 transactions per month, merchants need to have sufficient cash turnover to provide 1000 bank customers with cash. If the average cash withdrawal is Ksh2,000 this implies sufficient excess cash monthly turnover of Ksh2,000,000.
- **A proportion of their business at retail level:** customers need to be able to access funds while shopping. If POS locations are in wholesale locations, the distance between the wholesale and retail locations will provide a disincentive to withdraw cash. Merchants also need to be



familiar with retailing and customer management, to facilitate orderly access to the POS device. POS' have increased purchases at merchants by between 30-60%¹. If wholesalers do not retail goods, they do not benefit from this increase in purchases.

- **Locations in low density rural areas:** merchants need to be as close to target social welfare recipients as possible. Ideal rural locations for merchants are small/medium (more than 670 formal retail outlets) rural centres.

The low value of purchases at rural retailer level means banks are unable to acquire these transactions. Small retailers also have small turnovers and hold small cash floats, less than Ksh10,000 at any time. This restricts the number of cash withdrawals a small retailer can facilitate.

Wholesalers with retail outlets provide an ideal location for POS':

- **Have significant cash accumulation characteristics:** wholesalers generate significant flows of funds. At any point in time they hold sufficient excess cash to facilitate cash withdrawals.
- **Located in all main rural trading centres.**
- **Sell products directly to the public:** as a result of industry consolidation, wholesalers are increasingly becoming large retailers as well. This places them ideally for cash dispensing as customers already frequent their shops to purchase goods.

The POS model relies on sufficient cash at the merchant to facilitate cash withdrawals. If demand for cash out-strips available cash float at the merchant the POS is unable to distribute funds. If demand for cash from social welfare recipients was concentrated at a particular time of the month, for example month end, demand for cash could easily outstrip supply. Account transfers therefore need to be staggered over the month. Ideally the day of disbursement for the grant should be linked to the day of original signature, and not permitted during the last five days of the month. This would minimise the cash handling costs for the merchant, and ensures that bank infrastructure is not overwhelmed by demand at month end. This improves service levels, and smoothes demand for cash at POS'.

¹ Source: interviews with industry players

1.2. IMPROVEMENTS TO THE FUNCTIONING OF THE BANKING SYSTEM

The analysis has highlighted that changes to the regulatory and payment pricing environment could play a role in improving access to finance in low income/volume areas. Government can make it easier for service providers to provide lower cost services by:

1.2.1. BRANCH REGULATIONS

- Moving to a market based mechanism for managing branch risk and reducing the central banks role in branch regulation
- Lifting the restriction on the ratio of agencies to branches

1.2.2. PAYMENT SYSTEM PRICING

Interchange charged to issuing banks for off-us transactions comprises:

- the interchange fee paid to the acquiring bank
- a switching fee paid to the switch

For Visa members interchange is determined by the member banks, while switch fees are determined by Visa. In the case of Kenswitch interchange and switching fees are determined by Kenswitch, with advice from bank members.

The entry of PesaPoint, a “for profit” third party processor, provides a useful benchmark to assess the true cost of profitably providing ATM services. The gap between what Visa member banks pay in interchange for off-us transactions and what PesaPoint charges indicates that Visa members are not charging issuing banks a fee related to the cost of providing the infrastructure.

Internationally, the system supporting the setting of interchange fees has become an increasing focus for competition regulators who are concerned that the structures support collusive behaviour. The leading regulators involved in investigations have been the Office of Free Trade

OLIGOPOLIES, COLLUSION, AND ITS IMPACT ON PRICES OF GOODS.

Economic theory suggests that monopoly producers have the potential to affect the price charged to customers. Monopolies benefit from scale economies, limited competition to their products and limited substitution away from the products. If these factors are present in a market the monopoly producer is able to affect the price of the product it produces. This can result in monopoly producers maximising revenue by charging customers more than the average cost of producing the goods.

Oligopoly producers can behave in a similar manner to monopolies but comprise more than one producer. They achieve this by colluding. Collusion is defined as “conduct intended to coordinate the actions of firms.” (Church & Ware, 2000: 308). This ensures that firms behave as if they are a monopoly. Collusion results in revenue maximisation when:

- Consumers are unable to substitute the product for alternative products,
- The colluding firms account for a significant proportion of the market for the product,
- Entry into the market by new firms is hindered.

There are two types of collusion, explicit and tacit collusion. Explicit collusion occurs when firms “mutually devise a common plan of action and exchange mutual assurances to follow that common course of action” (Church & Ware, 2000: 308).

Because of the high level of concentration in the banking market, barriers to new entrants and co-ordinated pricing between players, banks and retail payments providers have been investigated for collusive behaviour.

(UK), the Federal Trade Commission (USA) and the European Commission (EU). More recently investigations into transaction pricing by banks have been launched in Brazil, New Zealand, Australia and South Africa.

The focus areas for competition authorities have been:

- **Multilateral agreements on interchange pricing:** interchange pricing has normally been agreed by the industry through negotiation between all the players. The price is set for all transactions. This has been identified as assisting banks in colluding as banks are able to act as an oligopoly. This has not necessarily meant that prices have been set in an anti-competitive manner.
- **Determinants of the agreed interchange price that have indicated some form of collusion:** interchange fees have been found to be much higher than the cost of providing off-us transaction services (EC, 2002)

Competition authorities have established that there is significant opportunity for collusive behaviour to dominate the setting of the interchange fee to the issuing bank and that prices have been higher than would have been expected in a competitive outcome (EC, 2002; OFT, 2002). However, this has not resulted in the disbanding of the multilateral pricing. Rather competition authorities have recommended that a number of controls be included in the negotiation process to reduce the possibility of collusive pricing.

Multi-lateral pricing ensures that all players are treated equally in an off-us environment. By disbanding multi-lateral pricing, competition authorities highlighted the possibility that smaller institutions would be charged higher interchange fees by larger banks, resulting in a more anti-competitive environment than under multi-lateral pricing agreements. Competition authorities have therefore allowed multi-lateral pricing to continue on condition that interchange fees are related to the actual cost of providing the service.

In order to avoid price gouging by banks, the European Commission recommended that interchange should be related to the actual cost of providing the infrastructure. A set of guidelines are used to provide a maximum price for POS transactions. Card association members are then required to set a price for interchange below the maximum determined price.

The system of determining a maximum interchange price has been applied in a number of jurisdictions, including countries in the EU (excluding Scandinavian countries where no interchange is allowed by law). While the determination of a ceiling interchange price has facilitated a more competitive environment, there have been objections to the application of this system. It is currently being challenged by the New Zealand competition authorities as not being sufficiently competitive.

1.2.2.1. DETERMINING POS INTERCHANGE AND MERCHANT DISCOUNTS

In case COMP/29.373 (Visa International – Multilateral interchange fee), 2002, the EC recommended that POS merchant discounts should be based on the following cost calculations:

- Cost of processing transactions
- Cost of free funding for cardholders
- Cost of providing payment guarantee

The cost calculations would be made by an independent organisation. The cost would then be used to benchmark the agreed upon interchange price. If the interchange price was higher than the calculated cost, the interchange price would be adjusted down to at least reflect the calculated cost. A similar principle can be applied to ATM pricing.

Table 3: International channel pricing benchmarks – identifying the right benchmark price

Various sources

Source	Swedish Riksbank	Norges Bank	BAI (Booz, Allen & Hamilton)	Forrester	Genesis Analytics		
Sample area	Sweden	Norway	USA	Top banks in Europe	Ugandan banking sector		
Date	2002	2001	1996	2003	2006		
Currency	SEK	NOK	USD	Euro	UGX		
Cost allocation	Direct	Direct & indirect	Direct	Direct & indirect	Direct & indirect		
Rate USD	9.72 kr	7.08 kr	\$1.00	€ 0.89	UGX 1,833.39	Selected value	Basis of calculation
Branch	\$0.68	\$2.12	\$1.07	\$2.26	N/A	\$0.88	Average of direct cost values
Telephone (IVR)	N/A	\$0.85	N/A	\$0.21	N/A	\$0.53	Average of direct & indirect costs
ATM (on & off-us averages)	\$0.47	\$1.13	\$0.27	\$0.25	\$0.22	\$0.30	Average of direct & indirect costs (except Norway)
POS (on & off-us averages)	\$0.07	\$0.35	N/A	N/A	\$0.07	\$0.07	Average of direct costs