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<th><strong>Title</strong></th>
<th>The NFG system - a system for the analysis of an electronic funds transfer at point of sale transaction</th>
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The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Abstract

The NFG system enables a Payer making an electronic funds transfer at point of sale ('EFTPOS/EPOS') transaction, using an electronic transactional card ('Card'), to add analytical data to the transaction at the time of making that transaction.

(whether a voluntary or compulsory requirement by the Payer or their/its Bank, or a voluntary or compulsory requirement by the Payee or their/its bank)

The analytical data is specific to that transaction and enables the Payer or their agent to identify the transaction and its analysis, for accounting/tax purposes at that or a future date.

(the analytical data entered is visible on the statement of transactions issued to the Payer by the Bank or financial institution related to that 'Card').
Diagram 1(a).
Payer Action Flow when Payer chooses Yes to analysis using The NFG system.

'Card' Swiped or scanned

Account type selected
CHQ SAV CRD

Analysis Prompt Yes or No

Yes selected

Analysis Prompt Alpha or Numeric

Alpha button pushed

Numeric button pushed

Combo button pushed

Code Entered using terminal keypad

OK button pressed

PIN entered

OK button pressed

Payer 'Bank' checks card

Payer 'Bank' rejects card

Payer 'Bank' approves card

TRANSACTION DECLINED

TRANSACTION COMPLETED

Receipt for Payer and Payee printed

Information into Payer/ee account
Diagram 1(b).
Payer Action Flow when Payer chooses Yes to analysis using The NFG system.

- 'Card' Swiped or scanned
  - Account type selected
    - CHQ SAV CRD
  - PIN entered
  - Payer 'Bank' checks card
    - Payer 'Bank' approves card
      - Analysis Prompt Yes or No
        - Yes selected
          - Analysis Prompt Alpha or Numeric
            - Alpha button pushed
            - Numeric button pushed
            - Combo button pushed
              - Code Entered using terminal keypad
                - OK button pressed
                  - TRANSACTION COMPLETED
          - Receipt for Payer and Payee printed
        - No selected
          - Analysis Prompt Yes or No
            - Yes selected
              - Analysis Prompt Alpha or Numeric
            - No selected
              - Transaction declined
                - Receipt for Payer and Payee printed

Receipt for Payer and Payee printed
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Description - Page 1

The NFG system begins with the Payer (from hereon referred to as 'their', 'they' or 'them') communicating to 'their' Bank/financial institution (from hereon referred to as 'Bank' or 'Banks') that 'they' would like to utilize The NFG system.

The 'Bank' then approves the Payer for the use of The NFG system and activates 'their' electronic transaction card/s (from hereon referred to as 'Card') and/or account/s so as to enable 'them' to add analytical data to the electronic funds transfer at point of sale ('EFTPOS/EPOS') transactions whilst 'they' are making that transaction.

The Payer then begins The NFG system process when 'their' 'Card' is swiped or scanned at the Payees card reading terminal (referred to from hereon as the 'Merchant Terminal' or 'MT') which has had its software upgraded to allow the Payer to enter the appropriate analysis data.

Next, one of the following operations will occur depending on the mode of operation the Payers 'Bank' employs The NFG system under.

A: When using a magnetic stripe type 'Card' (diagram 4), the magnetic stripe carries The NFG system 'Trigger' (a digit, letter or symbol or combination of any of these carried on the magnetic stripe which accompanies the standard information already carried on the magnetic stripe. i.e. account number and PIN Code) and this 'Trigger' activates the 'MT' system (diagram 6) to display prompts for the Payer to complete the transaction using The NFG system.

B: When using a 'SmartCard' or 'Card' carrying a micro-chip (diagram 5), the 'Trigger' is encoded on the micro-chip and from there activates the 'MT' system to display prompts for the Payer to complete the transaction using The NFG system.

C: Here, the 'Bank' has enabled The NFG system for the Payer per se, rather than enabling The NFG system for a specific 'Card' as in A and B above. In this case, whenever the Payer uses any 'Card' associated with 'their' accounts the 'MT' screen or 'MT' keypad screen will automatically display the prompts for the Payer to complete the transaction using The NFG system.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Description - Page 2

The Payer, following the prompts on the 'MT' screen or 'MT' keypad screen, selects the 'Account Type' to be used for the transaction.

At this point the Payer decides whether or not they want to analyse this particular transaction and so pushes the appropriate button according to the NFG system prompt displayed on the 'MT' screen or 'MT' keypad screen. (eg Y = yes, N = No, or as on a telephone keypad 9 = Y, 6 = N)

If the Payer chooses No, they do not want to analyse the transaction, the 'MT' screen prompt goes to the 'Enter PIN Code' followed by the 'Press OK' prompt and the transaction is completed as per any usual 'EFTPOS/EPOS' transaction. (Diagram 2)

If the Payer chooses Yes, they do want to analyse the transaction, the prompt on the 'MT' screen or 'MT' keypad screen will ask the Payer to Enter their analysis code. This code may be Alphabetic (letters and words), Numeric (numbers) or Combo (a combination of letters and numbers) and may be carried out in two ways. (Diagrams 1a & 1b).

When the Payer chooses Alphabetic, the 'MT' keypad will work in exactly the same way a telephone keypad works when using the alphabetic keys in text messaging or spelling word phone numbers.

When the Payer chooses Numeric, the 'MT' keypad will work in exactly the same way it does on a telephone keypad or 'MT' when using the numbers.

When the Payer chooses Combo, the 'MT' keypad will work in exactly the same way a telephone keypad works when using the keys whilst text messaging on a telephone.

* The three stated options above are exactly that, options, as only one may be required for the operation of the NFG system.

Once the analysis code for the transaction has been entered the Payer is prompted to push the OK button.

The 'MT' then prompts the Payee to enter their 'PIN Code' and then to push the OK button.

The 'MT' then communicates with the Payer's 'Bank' to verify that there are enough funds available and that the Payer's 'Card' has not been reported stolen. (Diagram 1a & 1b).
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Description - Page 3

The transaction data including The NFG system analysis data will be transmitted to the Payer's 'Bank' for inclusion on the Payer's statement of account and deduction of the funds from 'their' account.

At some point after trading the Payee will 'settle' the 'MT' and at that point in time the funds from the EFTPOS/EPOS transactions will be transferred to the Payee's 'Bank' account.

If the Payee is activated by their 'Bank' for use of The NFG system, the Payee will also be able to add an analysis code to the transaction/s made during the period since the Payee last 'settled' the 'MT'.

This analysis may be added by the Payee at the time of the transaction with the Payer, at some convenient time later in the day or at the time of 'settling' the 'MT'.

If the Payee chooses NO analysis when asked by The NFG system prompt, the Payer's/default analysis code will appear on the Payee's 'Bank' statement.

If the Payee is not enabled for The NFG system then the Payee's 'Bank' default code will appear on the Payee's 'Bank' statement.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Summary of the Invention

It is an object of the present invention to reduce the time a Payer spends analysing their/its electronic funds transfer at point of sale (EFTPOS/EPOS) transactions.

It is an object of the present invention to reduce the time a Payee spends analysing their/its electronic funds transfer at point of sale (EFTPOS/EPOS) transactions.

It is another object of the present invention to reduce the amount of time the Agent of a Payer spends analysing the Payer’s EFTPOS/EPOS transactions.

It is another object of the present invention to reduce the amount of time the Agent of a Payee spends analysing the Payee’s EFTPOS/EPOS transactions.

It is another object of the present invention to reduce the amount of time a Bank or its transaction processing facility spends analysing the transactions of their account holders.

It is a further object of the present invention to provide the Payer with the choice to analyse an EFTPOS/EPOS card transaction at the time of making the transaction.

It is a further object of the present invention to provide the Payee with the choice to analyse an EFTPOS/EPOS card transaction at the time of 'settling' the 'MT' at the end of the days trading.

It is an object of the present invention to provide the Payer with the ability to add an analysis code of their choice to the transaction at the time of making the EFTPOS/EPOS transaction.

It is an object of the present invention to provide the Payee with the ability to add an analysis code of their choice to the transaction/s at the time of the transaction with the Payer, at some convenient time later in the day or at the time of 'settling' the 'MT'.

It is another object of the present invention to provide the Payee with a system which will enable the 'MT' or 'MT' Keypad Display to display The NFG system Prompts for the Payer and the Payee at the time of the transaction.

It is another object of the present invention to provide the Payee with a system which will enable the production of a receipt for both the Payer and the Payee at the time of the transaction.

It is another object of the present invention to provide the Payer with confirmation of the analysis having been added to the transaction by providing a receipt showing the analysis the Payer has added and the other details of the transaction at the time of the transaction.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Summary of the Invention

It is another object of the present invention to provide the Payee with confirmation of the analysis having been added to the incoming transaction/s by providing a receipt showing the analysis the Payee has added to the transaction at the time of 'settling' the 'MT' at the end of the days trading.

It is another object of the present invention to provide the Payers 'Bank' with a system which will enable it or its transaction processing facility to interpret the Payers EFTPOS/EPOS transaction and analysis information.

It is another object of the present invention to provide the Payees 'Bank' with a system which will enable it or its transaction processing facility to interpret the Payees EFTPOS/EPOS transaction and analysis information.

It is another object of the present invention to provide the Payees 'Bank' with a system which will enable it or its transaction processing facility to interpret the Payees EFTPOS/EPOS transaction and analysis information.

It is another object of the present invention to provide the Payers 'Bank' with a system which will enable the 'Bank' to produce a written or electronic statement of account showing the transaction and the analysis of the transaction.

It is another object of the present invention to provide the Payers 'Bank' with a system which will enable the 'Bank' to produce a written or electronic statement of account showing the transaction and the analysis of the transaction.

It is another object of the present invention to provide the Payees 'Bank' with a system which will enable the 'Bank' to produce a written or electronic statement of account showing the transaction and the analysis of the transaction.

It is another object of the present invention to provide the Payer with a written or electronic statement of account showing the transaction and the analysis of the transaction.

It is another object of the present invention to provide the Payee with a written or electronic statement of account showing the transaction and the analysis of the transaction.

To accomplish these and other objects of the present invention, the use of the traditionally understood EFT (electronic funds transfer/transaction) system is required. Payer actions and system components using this traditional EFTPOS/EPOS system are outlined on the next page and shown in Diagram 7.
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Background of the Invention

Presently, plastic cards are used for a variety of transactions, such as credit card purchases, debit card purchases and automatic banking transactions. Such credit/debit cards include a magnetic stripe or carry a computer micro-chip that contains coded information for account information and, in some cases, a security code. The coded information on the magnetic stripe or micro-chip is read by a device in the possession of a merchant, which transmits the account information to a central computer, which determines whether the account number is valid, whether enough funds are available in the account for the purchase and whether or not the card has been reported stolen. If the transaction is authorized, the card user (Payer) receives a paper receipt as his, her, their or its record of the transaction, and the retail merchant also keeps a copy of the receipt as a record of the transaction. Later, usually within 30 days, the Payer receives a written statement, which, itemizes the transactions which have occurred in their account/s connected to that card.

Sometimes a Payer that is not in business may want to know exactly what they have spent their funds on. They will look at their written statements, add up the figures from the categories they have made transactions in, and so get an analytical picture of where their funds were spent.

Payers in business or that are an entity/business must at some point, analyze these transactions or, have their agent analyze the transactions for accounting or tax purposes. This involves the allocation of a code to each transaction, or the allocating the transaction to a particular code. The task is time consuming and involves entering the data into a physical cashbook by writing or typing, or entering the data into a computer based accounting software package. This costs the Payer time doing the task themselves or money paying their agent to complete the task. In most cases time the Payer spends doing this is time away from the actual activity of making money in the business. Usually the Payer considers keeping this analysis time to a minimum an intelligent decision.
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Field of the Invention

The invention relates generally to electronic transaction network systems and more particularly electronic funds transfer at point of sale (EFTPOS or EPOS) transactions. Specifically, the invention relates to the information transmitted to the purchaser’s bank or financial institution as a result of completing one of these transactions and more specifically to the addition of analytical accounting information relating to that transactional information by the purchaser at the time of making the transaction.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Definitions in relation to this document

**Payer** - person/entity/card-user transferring the funds from their/its account.

**Payee** - person/entity/Merchant receiving the transferred funds into their/its account.

**Bank** - banking, financial, or other institution that holds an account which a Payer/Payee can draw funds from or deposit funds into. Also produces a record of account or written statement of transactions for the account of a Payer/Payee.

**System** - (n) the manner in which something is done.

**Card** - electronic transaction card of any type or manner which carries information about the Payers account. (e.g. Account number and PIN number.)

**SmartCard** - electronic transaction card with a computer micro-chip which carries information about the Payers account on it. (e.g. Account number and PIN number.)

**PIN** - Personal Identification Number

**EFTPOS/EPOS** - Electronic Funds Transfer at Point Of Sale

**Merchant Terminal or 'MT'** - A system installed in a Payee's place of business to facilitate EFTPOS/EPOS transactions.

**'settle' or 'settling'** - the end of the day process completed by the Payee to deposit the funds from EFTPOS/EPOS transactions made that day.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

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Description of the Diagrams

Diagram 1 are flow diagrams of the Physical and happenings when the Payer chooses the YES they will need analysis using The NFG system on this transaction.

Diagram 2 is a flow diagram of the of the physical happenings when the Payer chooses the NO they won't need analysis using The NFG system on this transaction.

Diagram 3 are flow diagrams of the technical data of an electronic funds transfer using The NFG system.

Diagram 4 is the back view of a magnetic stripe type electronic funds transfer card.

Diagram 5 is the back view of a Smartcard or computer micro-chip carrying electronic funds transfer card.

Diagram 6 illustrates a receipt printing Merchant Terminal and display keypad.

Diagram 7 is a flow diagram of a traditional electronic funds transfer at point of sale (EFTPOS/EPOS) systems' physical actions for the Payer and the corresponding technical actions enacted by the system.

Diagram 8 is an example of an analysis type Cheque Book where the analysis must be manually entered into both sets of boxes at the left hand side of the cheque and the boxes on the cheque butt.

Diagram 9 is an example of an analysis type Deposit Book where the analysis must be manually entered into both sets of boxes at the left hand side of the cheque and the boxes on the cheque butt.

Diagram 10 is an example of a bank statement without any analysis coding.

Diagram 11 is an example of a bank statement with analysis coding as a result of using the Cheque Book in Diagram 8 and the Deposit Book in Diagram 9.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Description of the traditional EFTPOS/EPOS (electronic funds transfer at point of sale) system as outlined in

**US Patent No. 3,852,571**

A system for transferring funds between a customer's account and a transferee's account includes input output terminals and a digital computer at a central location. Retail merchants have input output terminals at each point of sale. These terminals include a card reader for encoding identifying indicia from the customer identification card. The amount of sale is encoded by a keyboard. At the central location the available balance which can be drawn against each customer's account and the accumulated credit for the merchants account are stored and continuously updated. A communications link transmits the encoded identifying indicia and the amount of sale from each input output terminal to the central location. A digital computer at the central location debits the amount of sale against the customer's available balance and credits the amount of sale to the merchants accumulated credit. A signal signifying completion of the sale, or indicating no sale if the amount exceeds the customers available balance, is transmitted to the point of sale. A verifier unit at each input output terminal has a keyboard for entering an identification code known only to the customer. Comparison of the code entered on the keyboard and an invisible code on the identification card verifies the identity of the customer. Separation of the verifier from the card reader insures security of the verification procedure.

(See diagram 7)
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Claims - page 1

What is claimed is:

1. A system enabling a Payer to add an analysis code of their choice to an electronic funds transfer at point of sale (EFTPOS/EPOS) transaction at the time of making that transaction.

2. A system enabling a Payee to conduct EFTPOS/EPOS transactions where the Payer is able to add an analysis code of their choice to the transaction at the time of making that transaction.

3. A system enabling a Bank to enable a Payer/account holder to add an analysis code of their choice to an EFTPOS/EPOS transaction at the time of making that transaction.

4. A system enabling a Bank to provide an account holder an electronic transaction card which has been encoded to enable a Payer to add an analysis code of their choice to an EFTPOS/EPOS transaction at the time of making that transaction.

5. A system enabling a Payers Bank or its transaction processing unit to process EFTPOS/EPOS transactions which include an analysis code of the Payers choice added to the transaction at the time of making that transaction.

6. A system enabling a Payees Bank or its transaction processing unit to process EFTPOS/EPOS transactions which include an analysis code of the Payees choice added to the transaction at the time of making that transaction.

7. A system enabling a Payees Bank or its transaction processing unit to process EFTPOS/EPOS transactions which include an analysis code of the Payees choice added to the transaction at the time of making that transaction.

8. A system enabling a Merchant Terminal to produce a written receipt, for both Payer and Payee, which shows the analysis added to the EFTPOS/EPOS transaction by the Payer at the time of making that transaction.

9. A system enabling a Bank to produce a written or electronic statement for the Payer, showing the analysis of the EFTPOS/EPOS transaction to which the Payer added an analysis code of their choice to the transaction at the time of making that transaction.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Claims - page 2

What is claimed is:

10. A system enabling a Bank to produce a written or electronic statement for the Payee, showing the analysis of the EFTPOS/EPOS transaction to which the Payer added an analysis code of their choice to the transaction at the time of making that transaction.

11. A system enabling a Bank to produce a written or electronic statement for the Payee, showing the analysis of the EFTPOS/EPOS transaction to which the Payee added an analysis code of their choice to the transaction at the time of making that transaction.
Diagram 1(a).
Payer Action Flow when Payer chooses Yes to analysis using The NFG system.

- 'Card' Swiped or scanned
  - Account type selected: CHQ, SAV, CRD
  - Analysis Prompt: Yes or No
    - Yes selected
      - Analysis Prompt: Alpha or Numeric
        - Alpha button pushed
        - Numeric button pushed
        - Combo button pushed
          - Code Entered using terminal keypad
            - OK button pressed
            - PIN entered
              - OK button pressed
                - Payer 'Bank' checks card
                  - Payer 'Bank' rejects card
                  - Payer 'Bank' approves card
                    - TRANSACTION DECLINED
                    - TRANSACTION COMPLETED
                      - Receipt for Payer and Payee printed
                          - Information into Payer/ee account
Diagram 1(b).
Payer Action Flow when Payer chooses Yes to analysis using The NFG system.

- 'Card' Swiped or scanned
- Account type selected (CHQ, SAV, CRD)
- PIN entered
- Payer 'Bank' checks card
- Payer 'Bank' approves card
- Analysis Prompt: Yes or No
  - Yes selected
  - Analysis Prompt: Alpha or Numeric
    - Alpha button pushed
    - Numeric button pushed
    - Combo button pushed
      - Code Entered using terminal keypad
        - OK button pressed
          - TRANSACTION COMPLETED
            - Receipt for Payer and Payee printed
          - Information into Payer/ee account
Diagram 2.
Payer Action Flow when Payer chooses *NO* analysis using The NFG system.

- 'Card' Swiped or scanned
  - Account type selected
    - CHQ  SAV  CRD
  - Analysis Prompt *Yes* or *No*
  - *No* selected
  - OK button pressed
  - PIN entered
  - OK button pushed
  - Payer 'Bank' checks card
    - Payer 'Bank' rejects card
    - TRANSACTION DECLINED
      - Receipt for Payer and Payee printed
  - Payer 'Bank' approves card
  - TRANSACTION COMPLETED as EFTPOS usually is
    - Receipt for Payer and Payee printed
    - Information into Payer/ee account
Diagram 3(a).
Technical Flow of Electronic Funds Transfer transaction Data using The NFG System.

1. 'Card' Swiped or scanned
2. Trigger on card activates 'MT' software for NFG
3. Terminal software readies analysis prompt
4. Account type selected (CHQ, SAV, CRD)
5. Analysis Prompt: Yes or No
6. If No entered:
   - No entered
7. If Yes entered:
   - Analysis Prompt: Alpha or Numeric
     - Alpha button pushed
     - Numeric button pushed
     - Combo button pushed
9. Code Entered
10. OK button pressed
   - PIN entered
   - OK button pressed
11. Payer 'Bank' rejects card
12. Payer 'Bank' checks card
13. Payer 'Bank' approves card
14. Receipt for Payer and Payee printed
15. Information into Payer/ee account
16. Customers Bank 'Switch' operates
17. Merchant 'settles' Terminal
18. TRANSACTION COMPLETE
Diagram 3(b).
Technical Flow of Electronic Funds Transfer transaction Data using The NFG System.

- 'Card' Swiped or scanned
- Payers Bank has ALL Cards NFG enabled
- Trigger on card activates 'MT' software for NFG
- Terminal software reads analysis prompt
- Account type selected
  - CHQ
  - SAV
  - CRD
- PIN entered
- Payer 'Bank' checks card
- Payer 'Bank' approves card
- Payer 'Bank' rejects card
- TRANSACTIONDECLINED
- Receipt for Payer and Payee printed
- Analysis Prompt Yes or No
- No entered
- Analysis Prompt Alpha or Numeric
- Alpha button pushed
- Numeric button pushed
- Combo button pushed
- Code Entered
- OK button pressed
- Receipt for Payer and Payee printed
- Information into Payer/ee account
- Customers Bank 'Switch' operates
- Merchant 'settles' Terminal
- TRANSACTION COMPLETE
Diagram 4

An example of a Magnetic Stripe activated electronic funds transfer card referred to as 'Card'
Diagram 5

An example of a card with a computer micro-chip to activate electronic funds transfers. referred to as 'SmartCard' or 'Card'

a computer micro-chip
Diagram 6

An example of a Merchant Terminal or 'MT' and keypad for conducting electronic funds transfer at point of sale transactions.
Diagram 7.
Payer Action Flow when Payer uses currently available (traditional) electronic funds transfer at point of sale (EFTPOS/EPOS) system

- 'Card' Swiped or scanned
- Account type selected
  - CHQ
  - SAV
  - CRD
- PIN entered
- Payer 'Bank' checks card
- Payer 'Bank' approves card
- OK button pressed
- Transaction ACCEPTED
  - Information into Payer/ee account
  - receipt printed for Payer and Payee
- Transaction DECLINED
  - Payer 'Bank' rejects card
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Diagram 8. Existing Analysis Cheque Book

Analysis must be manually entered in both sets of boxes and ONLY in NUMERIC form.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale transaction.

Diagram 9.
Existing Analysis Deposit Book

Analysis must be manually entered in both sets of boxes and ONLY in NUMERIC form.
The NFG system - A system for the analysis of an electronic funds transfer at point of sale.

Diagram 10

Bank Statement WITHOUT Payer added Analysis Codes showing

NO Payer added analysis codes in this column
### Diagram 11.

**Bank Statement WITH Payer added Analysis Codes showing**

<table>
<thead>
<tr>
<th>NAME OF PAYEE</th>
<th>PAYEE PARTICULARS</th>
<th>CODE</th>
<th>REMARKS</th>
<th>DEBIT</th>
<th>CREDIT</th>
<th>TOTAL</th>
<th>DEBIT/S/C</th>
<th>CREDIT/S/C</th>
<th>DATE</th>
<th>BALANCE</th>
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<td>12.50</td>
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