

METHOD OF MAKING SECURE ON-LINE FINANCIAL TRANSACTIONS

FIELD OF THE INVENTION

[0001] The present invention relates to the authorization, authentication, and settlement of commercial remittance transactions performed over the internet and over telephone wired and wireless networks.

BACKGROUND OF THE INVENTION

[0002] Transaction authorization, authentication and settlement over the internet and telephone networks are subject to breaches in user privacy and security that create an insecure environment that promotes fraud. The cost of unabated fraud is ultimately borne by the user. Most current internet-dependent remittance transaction technologies contemplate the use of a physical or virtual credit card or debit card for settlement, or reside on an operating referral platform of credit cards or debit cards in the execution of commercial remittance transactions. However, in no case is the physical card present at the point of the transaction over the internet or phone network and hence a condition in the on-line remittance industry known as “card not present” exists.

[0003] For debit transactions, a “card not present” condition results in an “offline debit” transaction. Offline debit transactions differ from “online debit” transactions in that online debit transactions are authorized and authenticated through the use of a Personal Identification Number, or PIN, known only to the user of the card; and deductions from a purchaser’s account occur immediately. Offline debit transactions, in contrast, have two distinguishing characteristics: First, transactions are signature-based, rather than PIN based; and second, consumer accounts are debited one or two days after the transaction rather than immediately. As a result of these differences in debit transactions, the risk of fraud or of a purchaser’s inability to finally settle a transaction is substantially greater in offline debit transactions.

[0004] Similar considerations apply to credit card transactions which, as with offline debit transactions, are signature based, and for which final settlement may be delayed a number of days or weeks following the transaction.

[0005] A number of technologies have been introduced to mitigate the risk of fraud and to eliminate potential breaches in user privacy and security. However, fraud continues to track the growth of internet and telephone network remittance transactions. The fundamental problem remains that the seller cannot physically verify the buyer, the items purchased, or the way to convey the goods and services in time and space at the virtual point of the transaction to authorize, authenticate and settle a “card not present” transaction in real time.

[0006] The present invention is an improvement on credit card methods and systems and signature debit methods and systems as devices for supporting internet and telephone network authorization, authentication and settlement of commercial remittance transactions. This invention provides methods and systems to settle internet or phone network commercial remittance transactions with the characteristics of immediacy, security and finality enjoyed in the physical world of debit transactions. This invention goes beyond the method and systems of the physical world of signature debit, as it can transform a settlement transaction from a debit

transaction that is “pulled” into a network for settlement by the merchant into a credit transaction that is “pushed” by the purchaser through the purchaser’s bank or any “originating draft financial institution” (ODFI). Settlement occurs through an internal clearing mechanism which the ODFI may control or that it out sources to a third party processor, or through an automated clearing house (ACH), thereby reducing the risk and the expense of the transaction settlement.

[0007] Current internet credit card transactions in a “card not present” condition separate authorization, authentication and settlement functions through a complex interoperable network that includes intermediaries to absorb the risk and expense of authorization, authentication and settlement. The transactions “float” through one or more networks that are traditionally governed by the rules and policies of the credit card associations (comprised of the member banks) and that typically take days to settle with grace periods of weeks built into the protocol to allow the resolution of disputed transactions. These traditional internet commercial remittance transactions are subject to problems of security and privacy and they are not immediate, secure or final at settlement.

[0008] Internet debit card transactions in the “card not present” condition link authorization and settlement functions in real time through a complex of physical networks that can operate in real time or that can “float” through the use of intermediaries and transaction limits to mitigate the risk of fraud at settlement. These transactions move through regional debit networks that are maintained by national and international debit associations that govern the rules and policies of the debit transactions. Debit transactions tend to be transparent to the card holder’s bank and his demand deposit account. While debit transactions over the internet are immediate and secure they are not final since the authentication function can only be characterized as a prepayment with a promise to fulfill at a later time.

SUMMARY OF THE INVENTION

[0009] This invention improves upon the prior art by supplementing it with an additional proprietary network (a virtual private network, or VPN), referred to herein as “the Extranet,” that interfaces with member banks, and with registered merchants and other users to facilitate electronic transactions that are at once more secure and that reduce the time for settlement and clearance of these transactions.

[0010] This invention provides communications links between one or more Extranet Servers and financial institutions, merchants, parcel shippers and freight handlers, and customers or other users of the system, whereby transactions can be initiated, authenticated, and finalized through channels outside existing credit and debit networks. Entities using the communications links of this invention do not communicate directly with each other, but communicate only with a proprietary server (the Extranet Server, or “EXN Server”). The EXN Server, in turn, has operating agreements with member financial institutions, and can direct them to act to carry out the instructions of authorized users. In this description, the term “Extranet Server” or “EXN Server” is not limited to a single server machine, but may be comprised of a number of interconnected servers operating together to perform the described server functions. The term “banks” is used generically to refer, not only to banking corporations, but to encompass other consumer financial institutions such as credit unions and the like. The EXN Server is operated by