

the account of payment service provider **198**, and the purchase account of payment service provider **199**. Each step is explained as follows:

[0176] 191—The payment service provider settlement system debits the payment service provider 300 points of e-money, and credits the same value to the purchase account of the payment service provider.

[0177] 192—The payment service provider settlement system triggers a process to purchase the equivalent value of e-money issued by biz Chain B. In this example, a ratio of 1:1 is used, as shown by the same 300 point figure on credit and debit sides.

[0178] 193—The payment service provider settlement system debits the purchase account of the payment service provider 300 points of the e-money issued by biz chain B, and credits the same value to merchant **B2**.

[0179] 194—The payment service provider settlement system debits merchant **B2** 300 points of e-money of biz chain B, and credits the same value to mobile communication device user **A1**.

[0180] FIG. 20 illustrates condensed accounts of credits and debits associated with the money flow of FIG. 19. The account of mobile communication device user **A1 201** has only a 300 point credit and has a final credit balance of 300 points. The account of merchant **B2 202** has both a 300 point credit and a 300 point debit, and has a final balance of 0 points. The account of the payment service provider **203** has only a 300 point debit and has a final debit balance of 300 points. The purchase account of payment service provider **204** has both a 300 point credit and a 300 point debit, and has a final balance of 0 points. Although not shown, in one example, ultimately the payment service provider is reimbursed by mobile communication device user **A1**, such as via the billing system of a telecom service provider or internet service provider.

[0181] FIG. 21 illustrates control flow in a payment service provider network, for a transaction to add value to a mobile communications device via a telecommunication service provider network, among mobile communicate device user **B1**, telecom operator **B**, and the payment service provider settlement system. The telecom operator **B** includes a SMS center, an authorization center, and a billing system. Each step is explained as follows:

[0182] 211—The mobile communicate device user **B1** requests telecom operator **B** to add 500 points of value by SMS.

[0183] 212—The SMS center of telecom operator **B** requests authorization to add the 500 points from the authorization center of telecom operator **B**.

[0184] 213.1—If the request is determined as valid by the authorization center of telecom operator **B**, the transaction is passed to the billing system of telecom operator **B**.

[0185] 213.2—If the request is determined as valid by the authorization center of telecom operator **B**, then the SMS Center of telecom operator **B** replies by SMS to the mobile communicate device user **B1** to add 500 points to the mobile device of mobile communicate device user **B1**.

[0186] 214.1—The billing system of telecom operator **B** passes the transaction record to the payment service provider settlement system.

[0187] 214.2—A blacklist of poor credit risks, such as mobile communication device user accounts that are associated or suspected of fraud, is updated from the billing system of telecom operator **B** to the payment service provider settlement system.

[0188] 215—The payment service provider settlement system generates a record along with a unique serial number for the 500 points of e-money issued by the payment service provider.

[0189] 216—The payment service provider settlement system logs the serial number of the e-money and proceeds with the subsequent bookkeeping and accounting process, so that the payment service provider directly credits 500 points to user **B1**.

[0190] FIG. 22 illustrates control flow in a payment service provider network, for a transaction to use a mobile communications device to pay money at a store terminal of a merchant, among mobile communicate device user **C1**, merchant **A1**, telecom operator **C**, and the payment service provider settlement system. The merchant **A1** includes a counter and a store terminal. Each step is explained as follows:

[0191] 221—The mobile communicate device user **C1** checks the balance in the e-purse of the mobile device, which turns out to still have 1000 points of stored value.

[0192] 222—The mobile communicate device user **C1** uses the mobile device to pay 200 points for purchases with merchant **A1**.

[0193] 223—200 points of e-money issued by the payment service provider is deducted from the e-purse of the mobile device by the store terminal of merchant **A1**.

[0194] 224—The store terminal of merchant **A1** sends the transaction record to the payment service provider settlement system.

[0195] 225—The transaction record is sent to the telecom operator **C** from the mobile communicate device of mobile communicate device user **C1** by short message service.

[0196] 226.1—The billing system of telecom operator **C** passes the transaction record to the payment service provider settlement system.

[0197] 226.2—A blacklist of poor credit risks, such as mobile communication device user accounts that are associated or suspected of fraud, is updated from the billing system of telecom operator **C** to the payment service provider settlement system.

[0198] 227—If the request is verified by the payment service provider settlement system by matching the transaction record from the server of the telecom operator **C** with the transaction record from merchant **A1**. If yes, the subsequent procedures follow. If no, then the “purse” of stored value in the mobile device is locked, and the mobile communication device user **C1** contacted for data correction and unlocking of the mobile device in case fraud was not involved.

[0199] 228—The payment service provider settlement system generates a record along with a unique serial number for the 200 points of e-money.

[0200] 229—The payment service provider settlement system logs the serial number of the e-money and proceeds with the subsequent bookkeeping and accounting process, such as that shown in FIGS. 23-26.

[0201] FIG. 23 illustrates a money flow among condensed accounts of credits and debits associated with the transaction of FIG. 22, among the account of mobile communication device user **C1 236**, the account of merchant **A1 237**, the account of payment service provider **238**, and the purchase account of payment service provider **239**. Each step is explained as follows:

[0202] 231—The payment service provider settlement system debits the account of mobile communication device user **C1**, assuming **C1** has 1000 points of stored value on the