

BRIEF DESCRIPTION OF THE FIGURES

Figure 1 is a functional block diagram generally illustrating one implementation of an online exotic currency exchanger system constructed in accordance with the present invention;

Figure 2 is a functional block diagram, in a form of an application programming interface (API) generally illustrating one implementation of an online exotic currency exchanger system constructed in accordance with the present invention;

Figure 3-7 are sample screen displays, that may be presented to a customer when interfacing with one implementation of the present invention;

Figure 8 is a sample screen display, that may be presented to a provider when interfacing with one implementation of the present invention at an external site, such as a social media with special interests on traveling to a specific country M, with as one implementation of the present invention.

Figure 9 is a sample screen display, that may be presented to a provider when interfacing with one implementation of the present invention to yet another external site, such as a crowdsourcing site, with multiple completed projects and payments due to international freelance talents, as one implementation of the present invention.

Figure 10 is a sample screen display, that may be presented to a provider as a dashboard, with multiple displays such as the amount held in each currency, the earnings, as well as the most active currency pairs with best returns, as one implementation of the present invention.

Figure 11 illustrates, in tabular format, one example of the type of information that

may be stored within a customer database employed in one implementation of the present invention;

Figure 12 illustrates, in tabular format, one example of the type of information that may be stored within a provider database employed in one implementation of the present invention;

Figure 13 illustrates, in tabular format, one example of the type of information that may be stored within an order history database employed in one implementation of the present invention;

Figure 14 is a logical flow diagram generally illustrating the functions performed by one implementation of the present invention to match an offer from a customer with a quote from one or more providers;

Figure 15 is a logical flow diagram generally illustrating the functions performed by one implementation of the present invention to receive customer offer information;

Figure 16 is a logical flow diagram generally illustrating the functions performed by one implementation of the present invention to attempt to book a price with one of a group of providers;

Figure 17 is a logical flow diagram generally illustrating the functions performed by one implementation of the present invention to attempt to book the best price through preferred ranking order of assorted non-conventional forex providers such as those from social media and business platforms as well as from conventional forex providers;

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

One illustrative system constructed in accordance with the present invention may be implemented as an exotic currency exchange service broker. The several components of the illustrative system are described first, followed by a description of the operation of the system through the interaction of the several components. The illustrative system described is but one of many alternative exotic currency exchange transactions that can be implemented in accordance with the present invention, and the breadth and scope of the invention is not limited to the particular embodiments described here.

Illustrative Exotic Currency Exchange System

Figure 1 is a functional block diagram generally illustrating one implementation of an exotic currency exchanger system (the system 100) constructed in accordance with the present invention. The system 100 is constructed to aid a customer to perform a foreign currency exchange service, in an electronic currency exchange transaction. The system 100 may be implemented as software modules or components stored and executing on one or more computing devices. The system illustrated in Figure 1 and described here is but one of the many implementations that will become apparent by the teachings of the present invention.

The system 100 includes an online exotic currency service exchanger (ECSE) 102 for the purpose of matching the best pricing quote offer to the customer. System 100 also contain a network of providers 104. Such network of providers includes non-conventional forex providers as social medias and interest groups. Specific business platforms are also classified under this network of non-conventional forex providers, including but not limited to online travel agencies (OTAs), eCommerce marketplaces,

crowdsourcing platforms and ticket booking platforms. The list of such providers may include users from across the globe, and exotic currencies held by their users are untapped resources not fully utilized by any prior art system.

Nevertheless, the network of providers 104 also include conventional forex providers, including but not limited to banks, financial institutions, brokers and agents. A metasearch engine 106 aims to search the network of providers 104 for best price quotes for a customer. As the system involves exchanging of official country currencies, the know-your-customer (KYC) module 108 and anti-money laundering (AML) and counter-terrorist funding (CTF) module 110 would ensure that system 100 is not abused by ill-intention users. Real-time pricing and rates will be pulled in by pricing data provider 112, while remote devices 114 allows users to interface with the system through means such as mobile phone or any computer devices.

The system 100 also contain a gateway 120. It acts as a gatekeeper to direct traffic flow and executional instructions to be carried out by respective modules. The ranking and distribution algorithm system 122 helps to rank providers according to their past performances. Those provides good pricing that are matched to customers will be ranked higher, and vice versa. The module 130 includes many functional modules to perform the necessary operations, such as risk assessment 132, trading 134, matching 136, settlement 138, clearing 140, calculation 142 and ranking 144. The database module 150 includes databases with customer information 152, credit history 154, bid history 156 and partner information 158. Each of the modules may be interconnected over a wide area network, such as the Internet 116. Although the following discussion

will make reference to the Internet 116 as a specific wide area network, those skilled in the art will appreciate that any mechanism for connecting multiple computing devices may equally be used.

Figure 2 is a functional block diagram of system 100, to be further packaged into a form of an application programming interface (API) 202, generally illustrating one implementation in accordance with the present invention. Collaboratively and strategically, this API 202 allows the system 100 to outreach to user groups 204, who are active participants in various applications in 206.

Illustrative User Interface Screens

Figure 3-7 are sample screen display that may be presented to a customer of the system 100 when interfacing with ECSE 102. Each of the sample screen displays represents one or more web or mobile pages assembled. The sample screen displays are provided as examples only, and the particular layout of the sample screen displays are not critical to a proper functioning of the invention.

Figure 3 is a graphical representation of an initial screen display 301 presented to a customer to begin the bidding process. In this screen display 301, the customer is prompted with a dropdown menu sell field 302, so that the customer may identify the currency the customer wishes to sell. The customer is also prompted with a dropdown menu buy field 304, so that the customer may identify the currency the customer wishes to buy. Upon the selection of both field 302 and 304, field 320 would display the indicative spot rate between the selected currency pair. 312 is a toggle function between 302 and 304. The customer is prompted to input a trade volume 306 that the customer is willing to

sell. It should be noted that the amount entered in the value field 306 will be the total amount charged to the customer upon successful quote selection. Through calculation module 142, 308 will then display the calculated amount of the currency the customer intends to bid for, based on the pricing display 320. Customer is also prompted with an action button 310 to input the best possible rates and returns.

Figure 4 is a graphical representation of an initial screen display 401 presented to a customer to begin the asking process. This may first be obtained by simply triggering the function 312 and sell field 302 is switched with buy field 304, thus becoming a buy field 402 and sell field 404. Upon the selection of both field 402 and 404, field 420 would display the indicative spot rate between the selected currency pair. The customer is prompted to input an asking trade volume 406 that the customer is willing to buy. It should be noted that the amount entered in the value field 406 will be the total amount received by the customer upon successful quote selection. Through calculation module 142, 408 will then display the calculated amount of the currency the customer intends to use for paying, based on the pricing display 420. Customer is also prompted with an action button 310 to input the best possible rates and returns.

Figure 5 is a graphical representation of an initial screen display 501. This is subsequent embodiment of screen display 301, where the action button 310 has been clicked. Customer is prompted with an expected discounted pips field 530 and percentage field 532. The customer may choose to input either one field, to attain the desired discounted quote 540. Customer is also prompted to provide the intended duration of metasearching

starting from input field 534 till input field 536, with every interval notification input field of 538. The final bidding (or asking) price is displayed in field 542. Upon agreeing to the conditional checked box 544, the customer may proceed with the button 546.

Figure 6 is a graphical representation of an initial screen display 601. This is yet a further embodiment of screen display 501, where the action button 546 has been clicked. The remaining time is displayed by timer display 624. With every interval time, the system 100 will return the best price quote 630 available for the customer. Customer is still able to benchmark the results against the bid price 540. Results 630 displayed are accompanied by its real-time availability status 632. Customer chooses which price to lock-in via button 636. Those results 630 that are no longer available 632 will automatically lose the lock-in function in 636.

Figure 7 is a graphical representation of an initial screen display 701. This is yet another subsequent embodiment of screen display 601. When the remaining time 624 is up, the try again 710 button will appear, prompting customer whether to go through the bidding (asking) process all over again.

Illustrative Provider Interface Screens

Figure 8 is a graphical representation of an initial screen display 801. This is an embodiment of a travel interest group site, a destination to country M. System 100 is connected to the interest group site 801. 802 represents topic interests, while 804 are graphical pictures and/or text in relation to the topic 802. 806 is call-to-action invoking question while 808 is a button that will re-direct providers to 301.

Figure 9 is a graphical representation of an initial screen display 901. This is yet another embodiment of a crowdsourcing site. System 100 is connected to the crowdsourcing site 901. 902 are representation of project panels, including 904 the amount due to pay, 906 is a call-to-action invoking question while 908 is a button that will re-direct providers to 301.

Figure 10 is a graphical representation of an initial screen display 1001. This is an embodiment of a dashboard display. 1010 is a functional feature for the purpose of displaying the real-time balances the provider has. 1012 represents the currency type, while 1014 represents a virtual sub-account the amount of each corresponding currency in 1012. 1016 represents the earnings by the provider, over a selected period of time 1018. 1020 allows the provider to add a new currency vault that is currently not among 1012. 1022 are buttons that allowed the provider to top up amount to the respective virtual sub-account 1014. 1024 are buttons that allowed the provider to withdraw amount from the respective virtual sub-account 1014. 1026 are buttons that let the provider start trading the virtual sub-account 1014. 1030 is a display board of the hottest activities on the system 100. 1032 indicates the ranking list of the traded currency pair 1034, while 1036 indicates the in-demand currency for the pair 1034. 1038 describes the pip spread the provider can potentially exploit if such trade is executed.

Illustrative Database Format

Figure 11 illustrates, in tabular format, one example of the type of information that

may be stored within the customer database 152. Referring briefly to Figure 11, a table 1101 includes a record for each customer of the ECSE 102. Each record may include a customer identifier 1103, authentication information 1105, proof of address verification 1107, social media verification 1109, email and contact verification 1111, transaction history 1113, beneficiary information 1115, and other information 1117 associated with the particular customer.

Figure 12 illustrates, in tabular format, one example of the type of information that may be stored within the provider database 158. Referring briefly to Figure 12, a table 1201 includes a record for each provider of the provider network 104. Each record may include a provider identifier 1203, authentication information 1205, social media verification 1207, email and contact verification 1209, performance information 1211, ranking history 1213, and other information 1215 associated with the particular provider.

Figure 13 illustrates, in tabular format, one example of the type of information that may be stored within the bid history database 156. Referring briefly to Figure 13, a table 1301 includes a record table necessary for the ranking and distribution algorithm system 122. Each record may be shared between the customer or the provider, with a bid identifier 1303, customer identifier 1103, provider identifier 1203, price information 1309, trade information 1311, matching criteria 1313, time of bid 1315, and other information 1317 associated with the particular bid.

Operation of an Exemplary Currency Exchange Matching System

Figures 14-17 are logical flow diagrams that generally illustrate several processes performed by the illustrative exotic currency exchanger system illustrated in Figures 1-13 and described above.

Figure 14 is a logical flow diagram generally illustrating a process performed by the system 100 to match an offer from a customer with a quote from one or more providers. The process begins at step 1404, where the system 100 receives customer currency trade information. The operations performed at step 1404 are illustrated in detail in Figure 15 and are described below. Briefly described, the customer provides sufficient information for the system 100 to initiate the offer matching process. For example, in the described embodiment, the customer identifies at least an offer price for a specific currency. In addition, the system 100 may request funding top-ups from customer prior to proceeding with the offer process. Once the information is received, the process continues to step 1406.

The operations performed at step 1406 are illustrated in the detail in Figure 16 and described below. At step 1406, the system 100 attempts to book the currency exchange services with the providers. Briefly described, the system 100 attempts to book the request price with each provider, beginning with the most preferred, until either there are no more providers or until an acceptable price is found. As can be understood, when the system 100 attempts to book the currency exchange services, the quotes supplied by the providers are not shown to the customer. If none of the provider could provide an adequate quote that satisfies the customer's price, then the system 100 will then proceed to attempt to book the currency exchange services with through step 1410, as illustrated in the detail in

Figure 17. This method utilizes a volume weighted average pricing (VWAP) approach. Else, if an acceptable price is found, the process should proceed to 1414, where the quote is locked in and executed. The return is successful.

Figure 15 is a logical flow diagram generally illustrating the operations performed at step 1404 of the process illustrated in Figure 14 to receive customer offer information. The process of Figure 15 begins at step 1502, where the customer is prompted to select the currency pair to sell and buy. For example, the customer may be presented with the initial screen display 301 illustrated in Figure 3 and described above.

At step 1504 the customer is prompted to enter the amount for whom the currency the customer wants to sell or buy.

At step 1506 the customer is prompted to enter the bidding price range. This may be presented with the initial screen display 501 illustrated in Figure 5 and described in 530 and 532. This may be in units of pips or in percentage. Customers are free to adjust the inputs to attain the desired discount quote.

At step 1508 the customer is further prompted to enter the timeline. This may be again be seen in Figure 5 and described in 534, 536 and 538. Again, this allows the system 100 to metasearch across the various providers with a specific time frame. Customers has the option to choose the interval notification, via 538.

At step 1510 the customer is presented the trade size based on the various parameters that were input earlier. This may be seen in Figure 5 and described in 542.

If the customer indicates that the offer information is incorrect, then, from decision step 1512, the process returns to

step 1502 where the customer is prompted to provide the offer information again. If the customer verifies the offer information, the process proceeds returns to Figure 14.

Figure 16 is a logical flow diagram generally illustrating the operations performed at step 1406 of the process illustrated in Figure 14 in an attempt to book a pricing with a provider.

The process of Figure 17 begins at step 1702, where the system 100 is set to start the process of identifying the most preferred provider. The operations performed at step 1602 are illustrated in detail in Figure 16 and are described in 1602. Briefly described, the system 100 does a metasearch from a network of providers. The list of providers, of which a lowest price is expected from the results returned. This may be presented with the initial screen display 601 illustrated in Figure 6 and described in 630.

The process continues to step 1706. Metasearch first begin again with 1630, illustrated in detail in Figure 16, from a list of non-conventional forex providers. This may be through the list of providers 1632 and 1634.

Once the results returned, the process continues to step 1708. A calculation matrix as suggested by the formula below may be adopted.

$$\frac{[(trade_1)(price_1) + (trade_2)(price_2) + \dots (trade_n)(price_n)]}{trade_0}$$

If the results match from decision step 1710, which in return matches 1510, the process returns to step 1410. Else, the process proceeds another decision step 1712. If the time is up, as illustrated in Figure 7 and described in 624, the process also returns to step 1410. Else, the process proceeds to yet another decision step 1714. If there is more provider in the list, the process proceeds to step 1716. Else, it will

follow to return to step 1410. From step 1716, the process returns to 1702.

The system 100 then selects the lowest of the returned fares that satisfies the customer's offer. If none of the prices satisfy the customer's offer, then, from decision step 1412 the process returns a failure indicating that the customer's offer was not accepted. If, however, an acceptable price is returned, the system 100 selects that price as the winning price. If more than one acceptable price is returned, the system 100 may select the lowest of the acceptable prices. At step 1414, the winning price is booked with the corresponding provider, or with a combination of providers in a VWAP outcome.

Once the price had been executed, and appropriate notifications given, the process illustrated in Figure 14 terminates.

If desired, a time-out mechanism may be utilized to prevent a search for an individual from utilizing too many server resources. For example, the exotic currency exchange server may define a ten-minute limit for a search. The time-out may be treated as a failed search or may be handled in another manner as appropriate.

Although the system chosen to describe the present invention is an online exotic currency exchanger system, those skilled in the art will appreciate that many other types of electronic currency exchanges may benefit equally from the present invention. Moreover, the described implementations of the invention are susceptible to various modifications and alternative constructions. It should be understood, that there is no intention to limit the invention to the specific form or forms disclosed, but on the contrary, the intention is to cover all modifications, alternative constructions, and equivalents

falling within the spirit and scope of the invention.

WHAT IS CLAIMED

1. A system-implemented method of matching an offer for a product with a quote, comprising:
at a system:

- receiving the offer from a customer;
- selecting a highest rank provider from groups of providers such as users of social medias, business platforms, as well as direct from banks, financial institutions and brokers;
- obtaining at least one quote for the price from the selected provider;
- evaluating the at least one quote from the selected provider to determine if the at least one quote satisfies the offer;
- if the at least one quote from the selected provider does not satisfy the offer, repeatedly:
 - selecting the next-highest rank provider from the group of providers;
 - obtaining at least one quote for the currency pair from the next-highest rank provider; and
 - evaluating the at least one quote from the next-highest rank provider to determine if the at least one quote satisfies the offer;
- until the offer is satisfied or until the group of providers is exhausted;
- if the group of providers is exhausted without satisfying the offer, attempting to satisfy the offer from a volume weighted average pricing approach, wherein the selection is based on a volume weighted average of the two or more sets of pricing data streamed from the one or more providers.
- if the offer is satisfied with a satisfying quote; return by locking in the price; and
- if the offer is not satisfied from either the group of providers or the volume weighted average pricing approach, returning an indication that the customer's offer was not accepted.

2. The system-implemented method of claim 1, wherein the system may be a standalone service platform or as an application programming interface (API) that may be called by external third-party systems.

3. The system-implemented method of claim 1, wherein the most competitive provider quote includes a lowest quote provided by a provider.

4. The system-implemented method of claim 1, wherein the product is a currency exchange service.

5. The system-implemented method of claim 4, wherein the currency exchange service includes exotic currencies.

6. The system-implemented method of claim 1, wherein evaluating the at least one quote from the selected provider comprises evaluating the quotes provided by the selected provider in descending order of value, from a highest quote to the lowest quote, and selecting the highest quote that satisfies the offer.

7. The system-implemented method of claim 1, wherein negotiating the booking of the pricing from the provider associated with the satisfying quote includes making a reservation for a currency exchange service provided by the provider at a value corresponding to the satisfying quote.

8. The system-implemented method of claim 1, wherein each quote is obtained from each provider independently through a ranking and distribution algorithm system that stores price information associated with each provider.

9. The system-implemented method of claim 1, wherein each provider includes a respective associated preferred criteria, and wherein evaluating the at least one quote from the selected provider to determine if the at least one quote that

satisfies the offer comprises determining if the quote satisfies the preferred criteria associated with the selected provider.

10. The system-implemented method of claim 9, wherein attempting to satisfy the offer from the group of providers comprises evaluating offers from the providers that do not meet the preferred criteria.

11. The system-implemented method of claim 2, wherein user interface may include, but not limited to web, app and web-app, over-the-counter (OTC).

12. The system-implemented method of claim 11, wherein in order for a user to be issued an trading account, a series of security screening is to be conducted, including but not limited to actual face-to-face verification, official photo identification verification, bank account verification, mobile communication verification, proof of address, proof of income, and further checks on sanction list, adverse news, politically exposed person (PEP), social media profiling, credit history rating and bankruptcy, criminal records, anti-money laundering and counter terrorist funding.

13. The system-implemented method of claim 12, wherein a verified user's account may function as both a customer seeking for a best quote, or a provider, providing to match the best quote.

14. The system-implemented method in claim 13, wherein the account is a multi-currency account.

15. The system-implemented method in claim 14, wherein the user may choose to add a sub-account for a currency to be traded or remove the sub-account if intended to.

16. The system-implemented method in claim 13, wherein the interface may be

presented, including but not limited to a dashboard.

17. The system-implemented method in claim 13, wherein the user may be able to see the summary of the accounts, including but not limited to the amount held in each currency, the earnings, the transaction histories, trend predictive tools, analytical tools to assist the users in trading, the in-demand currencies for trading exploitation.