information specified by the user at ordinary times is too large, and from the media dimension, it can be identified whether the network environment of the current transaction is WIFI or mobile data, whether the service provider of the mobile data is China Mobile, China Unicom or China Telecom, and whether the difference between this information and the usual media information of the user is too large.

In the embodiments of this application, for each of the above dimensions, the risk degree of the current transaction can be determined according to the operation data of the dimension. Specifically, the method for adjusting the risk parameter shown in FIG. 1 and the method for risk identification can be adopted to determine the risk degree according to the operation data and perform risk identification. That is, at least one operation hopping sequence of the device dimension generated in the current transaction can be determined according to the operation data of the dimensions (any one of device dimension, user dimension, merchant dimension and location dimension), and the operation hopping sequence of the device dimension contains at least one operation hopping event of the device dimension; a risk parameter corresponding to the operation hopping event of the device dimension contained in the operation hopping sequence of the device dimension is determined according to the at least one operation hopping sequence of the device dimension. According to the risk parameter, the risk degree of the current transaction is determined.

S203: When different risk degrees of the current transaction corresponding to dimensions are obtained, perform risk identification on the current transaction according to the obtained different risk degrees.

In the embodiments of this application, the different risk degrees obtained can be calculated according to specific strategy rules to obtain a risk coefficient of the current transaction, and risk identification can be performed on the current transaction according to the determined risk coefficient.

The specific strategy rules may be to set different weights for different risk degrees and integrate the risk degrees to obtain the risk coefficient, or may simply add the risk degrees to obtain the risk coefficient. In short, the specific strategy rules may integrate different risk degrees to reflect the risk of the current transaction holistically.

It is worth noting that the method shown in FIG. 2 and the method shown in FIG. 1 are based on the same inventive concept. The way to determine the risk degree in each dimension in the method shown in FIG. 2 is exactly the way to determine the risk degree of the current transaction in the method shown in FIG. 1, except that in the method shown in FIG. 2, the risk degree of the current transaction can be determined from more than one dimension, and

CLAIMS

1. A method for adjusting a risk parameter, comprising:

receiving a payment request, wherein the payment request contains a user identifier and operation data generated in a current transaction through the user identifier;

determining, according to the operation data, at least one operation hopping sequence produced in the current transaction, wherein the operation hopping sequence contains at least one operation hopping event;

acquiring, from a set of risk parameters corresponding to the user identifier, a risk parameter corresponding to the operation hopping event contained in the operation hopping sequence, wherein risk parameters contained in the set of risk parameters are obtained by adjusting risk parameters used for risk identification in a previous transaction according to operation data generated in the previous transaction corresponding to the user identifier; and

adjusting the acquired risk parameter according to the at least one operation hopping sequence.

2. The method according to claim 1, further comprising:

determining a risk degree of the current transaction according to the acquired risk parameter and the at least one operation hopping sequence; and

performing risk identification on the current transaction according to the risk degree.

3. The method according to claim 2, wherein adjusting the acquired risk parameter according to the at least one operation hopping sequence comprises:

decreasing the acquired risk parameter when determining that the risk degree corresponding to the current transaction is higher than a set threshold value, and

increasing the acquired risk parameter when determining that the risk degree corresponding to the current transaction is not higher than the set threshold value, wherein

the adjusted risk parameter is used for risk identification for a next transaction corresponding to the user identifier.

4. The method according to claim 2, wherein before receiving the payment request, the method further comprises:

determining a set of operation hopping events corresponding to the user identifier and an initial value for each of the risk parameters of a corresponding operation hopping event

contained in the set of operation hopping events when a risk identification system is initialized.

5. The method according to claim 4, wherein determining the set of operation hopping events comprises:

defining different nodes;

traversing operation hopping between the different nodes to obtain a plurality of operation hopping events, wherein the plurality of operation hopping events involve two of the nodes; and

obtaining the set of operation hopping events according to the plurality of operation hopping events.

6. The method according to claim 4, wherein determining the initial value for each of the risk parameters of a corresponding operation hopping event contained in the set of operation hopping events comprises:

acquiring historical operation data generated through the user identifier;

for each operation hopping event contained in the set of operation hopping events, executing:

determining a probability of occurrence of a respective operation hopping event according to the historical operation data; and

using the probability of occurrence as the initial value of the risk parameter for the respective operation hopping event.

7. The method according to claim 5, wherein determining the initial value for each of the risk parameters of a corresponding operation hopping event contained in the set of operation hopping events comprises:

when historical operation data generated through the user identifier cannot be acquired, acquiring historical operation data generated using a set number of other user identifiers;

for each operation hopping event contained in the set of operation hopping events, executing:

determining a probability of occurrence of a respective operation hopping event according to the historical operation data; and

using the probability of occurrence as the initial value of the risk parameter for the respective operation hopping event.

8. The method according to claim 6 or 7, wherein determining the risk degree of the current transaction according to the acquired risk parameter and the at least one operation hopping sequence comprises:

determining operation hopping events contained in each operation hopping sequence, and determining a risk value of the operation hopping sequence according to the risk parameter corresponding to each operation hopping event; and

after obtaining the risk value of each operation hopping sequence, determining the risk degree of the current transaction according to the risk value of each operation hopping sequence.

9. A method for risk identification, comprising:

receiving a payment request, wherein the payment request contains operation data of at least one dimension generated in a current transaction;

with respect to a respective dimension, determining a risk degree of the current transaction according to the operation data of the respective dimension; and

when different risk degrees of the current transaction corresponding to dimensions are obtained, performing risk identification on the current transaction according to the obtained different risk degrees.

10. The method according to claim 9, wherein determining the risk degree of the current transaction according to the operation data of the respective dimension specifically comprises:

if the operation data of the respective dimension is the operation data of a device dimension, determining at least one operation hopping sequence of the device dimension generated in the current transaction according to the operation data of the device dimension, wherein the operation hopping sequence of the device dimension contains at least one operation hopping event of the device dimension;

determining a risk parameter corresponding to the operation hopping event of the device dimension contained in the operation hopping sequence of the device dimension according to the at least one operation hopping sequence of the device dimension; and

determining the risk degree of the current transaction according to the risk parameter.

11. The method according to claim 10, wherein determining the risk degree of the current transaction according to the operation data of the respective dimension further

comprises:

if the operation data of the respective dimension is the operation data of a user dimension, determining at least one operation hopping sequence of the user dimension generated in the current transaction according to the operation data of the user dimension, wherein the operation hopping sequence of the user dimension contains at least one operation hopping event of the user dimension;

determining a risk parameter corresponding to the operation hopping event of the user dimension contained in the operation hopping sequence of the user dimension according to the at least one operation hopping sequence of the user dimension; and

determining the risk degree of the current transaction according to the risk parameter.

12. The method according to claim 11, wherein determining the risk degree of the current transaction according to the operation data of the respective dimension further comprises:

if the operation data of the respective dimension is the operation data of a merchant dimension, determining at least one operation hopping sequence of the merchant dimension generated in the current transaction according to the operation data of the merchant dimension, wherein the operation hopping sequence of the merchant dimension contains at least one operation hopping event of the merchant dimension;

determining a risk parameter corresponding to the operation hopping event of the merchant dimension contained in the operation hopping sequence of the merchant dimension according to the at least one operation hopping sequence of the merchant dimension; and

determining the risk degree of the current transaction according to the risk parameter.

13. The method according to claim 12, wherein determining the risk degree of the current transaction according to the operation data of the respective dimension further comprises:

if the operation data of the respective dimension is the operation data of a location dimension, determining at least one operation hopping sequence of the location dimension generated in the current transaction according to the operation data of the location dimension, wherein the operation hopping sequence of the location dimension contains at least one operation hopping event of the location dimension;

determining a risk parameter corresponding to the operation hopping event of the location dimension contained in the operation hopping sequence of the location dimension

according to the at least one operation hopping sequence of the location dimension; and

determining the risk degree of the current transaction according to the risk parameter.

14. The method according to claim 9, wherein performing risk identification on the current transaction according to the obtained different risk degrees further comprises:

calculating the different risk degrees obtained according to specific strategy rules to obtain a risk coefficient of the current transaction; and

performing risk identification on the current transaction according to the determined risk coefficient.

15. A device for adjusting a risk parameter, comprising:

a receiving module which receives a payment request, wherein the payment request contains a user identifier and operation data generated in a current transaction through the user identifier;

a determining module which determines, according to the operation data, at least one operation hopping sequence produced in the current transaction, wherein the operation hopping sequence contains at least one operation hopping event;

an acquiring module which acquires, from a set of risk parameters corresponding to the user identifier, a risk parameter corresponding to the operation hopping event contained in the operation hopping sequence, wherein risk parameters contained in the set of risk parameters are obtained by adjusting risk parameters used for risk identification in a previous transaction according to operation data generated in the previous transaction corresponding to the user identifier; and

an adjusting module which adjusts the acquired risk parameter according to the at least one operation hopping sequence.

16. The device according to claim 15, further comprising an identifying module, wherein

the identifying module determines a risk degree of the current transaction according to the acquired risk parameter and the at least one operation hopping sequence, and performs risk identification on the current transaction according to the risk degree.

17. The device according to claim 16, wherein,

the adjusting module decreases the acquired risk parameter when determining that the

risk degree corresponding to the current transaction is higher than a set threshold value, and increases the acquired risk parameter when determining that the risk degree corresponding to the current transaction is not higher than the set threshold value, and the adjusted risk parameter is used for risk identification for a next transaction corresponding to the user identifier.

18. The device according to claim 16, further comprising an initializing module, wherein,

the initializing module determines a set of operation hopping events corresponding to the user identifier and an initial value for each of the risk parameters of a corresponding operation hopping event contained in the set of operation hopping events before receiving the payment request when a risk identification system is initialized.

19. The device according to claim 18, wherein

the initializing module defines different nodes; traverses operation hopping between the different nodes to obtain a plurality of operation hopping events, wherein the plurality of operation hopping events involve two of the nodes; and obtains the set of operation hopping events according to the plurality of operation hopping events.

20. The device according to claim 18, wherein

the initializing module acquires historical operation data generated through the user identifier; and for each operation hopping event contained in the set of operation hopping events, the initializing module executes: determining a probability of occurrence of a respective operation hopping event according to the historical operation data; and using the probability of occurrence as the initial value of the risk parameter for the respective operation hopping event.

21. The device according to claim 19, wherein

when historical operation data generated through the user identifier cannot be acquired, the initializing module acquires historical operation data generated using a set number of other user identifiers; and for each operation hopping event contained in the set of operation hopping events, the initializing module executes: determining a probability of occurrence of a respective operation hopping event according to the historical operation data; and using the probability of occurrence as the initial value of the risk parameter for the respective operation

hopping event.

22. The device according to claim 20 or 21, wherein

the identifying module determines the operation hopping events contained in each operation hopping sequence, and determines a risk value of the operation hopping sequence according to the risk parameter corresponding to each operation hopping event; and after obtaining the risk value of each operation hopping sequence, determines a risk degree of the current transaction according to the risk value of each operation hopping sequence.

23. A device for risk identification, comprising:

a receiving module which receives a payment request, wherein the payment request contains operation data of at least one dimension generated in a current transaction;

a determining module which determines, with respect to a respective dimension, a risk degree of the current transaction according to the operation data of the respective dimension; and

an identifying module which performs, when different risk degrees of the current transaction corresponding to dimensions are obtained, risk identification on the current transaction according to the obtained different risk degrees.

24. The device according to claim 23, wherein if the operation data of the respective dimension is the operation data of a device dimension, the determining module determines at least one operation hopping sequence of the device dimension generated in the current transaction according to the operation data of the device dimension, wherein the operation hopping sequence of the device dimension contains at least one operation hopping event of the device dimension; determines a risk parameter corresponding to the operation hopping event of the device dimension contained in the operation hopping sequence of the device dimension according to the at least one operation hopping sequence of the device dimension; and determines the risk degree of the current transaction according to the risk parameter.

25. The device according to claim 24, wherein if the operation data of the respective dimension is the operation data of a user dimension, the determining module determines at least one operation hopping sequence of the user dimension generated in the current transaction according to the operation data of the user dimension, wherein the operation hopping sequence of the user dimension contains at least one operation hopping event of the

user dimension; determines a risk parameter corresponding to the operation hopping event of the user dimension contained in the operation hopping sequence of the user dimension according to the at least one operation hopping sequence of the user dimension; and determines the risk degree of the current transaction according to the risk parameter.

26. The device according to claim 25, wherein if the operation data of the respective dimension is the operation data of a merchant dimension, the determining module determines at least one operation hopping sequence of the merchant dimension generated in the current transaction according to the operation data of the merchant dimension, wherein the operation hopping sequence of the merchant dimension contains at least one operation hopping event of the merchant dimension; determines a risk parameter corresponding to the operation hopping event of the merchant dimension contained in the operation hopping sequence of the merchant dimension according to the at least one operation hopping sequence of the merchant dimension; and determines the risk degree of the current transaction according to the risk parameter.

27. The device according to claim 26, wherein if the operation data of the respective dimension is the operation data of a location dimension, the determining module determines at least one operation hopping sequence of the location dimension generated in the current transaction according to the operation data of the location dimension, wherein the operation hopping sequence of the location dimension contains at least one operation hopping event of the location dimension; determines a risk parameter corresponding to the operation hopping event of the location dimension contained in the operation hopping sequence of the location dimension according to the at least one operation hopping sequence of the location dimension; and determines the risk degree of the current transaction according to the risk parameter.

28. The device according to claim 23, wherein the identifying module calculates the different risk degrees obtained according to specific strategy rules to obtain a risk coefficient of the current transaction, and performs risk identification on the current transaction according to the determined risk coefficient.

29. A risk identification system, comprising:

at least one smart module which receives a transaction request, acquires operation data generated in a current transaction through a user identifier, performs risk analysis according

to the operation data, and sends a risk analysis result to a risk identification module, wherein the risk analysis result is obtained by the method according to claims 1 to 8; and

the risk identification module which performs risk identification according to the received risk analysis result.

30. The system according to claim 29, wherein the smart module specifically comprises:

an acquiring unit which acquires the operation data generated in the current transaction through the user identifier, determines at least one operation hopping sequence according to the operation data, and sends the at least one operation hopping sequence to an analyzing unit;

the analyzing unit which performs risk analysis according to the received operation hopping sequence, and outputs the risk analysis result to a sending unit; and

the sending unit which determines a risk degree according to the received risk analysis result and sends the risk degree to the risk identification module.