

RISK DECISION-MAKING METHOD AND APPARATUS

TECHNICAL FIELD

[0001] The present disclosure relates to the field of computer technologies, and in particular, to a risk decision-making method and apparatus.

BACKGROUND

[0002] The internet finance is gradually expanding globally. Due to features such as the openness and flexibility of the internet finance, risk management becomes particularly important. In the internet finance industry, there have been companies with rich risk management experience and excellent risk management and control capabilities, and risk management teams thereof are fully capable of helping users avoid various risks. Meanwhile, in some countries or regions, some internet financial start-ups are trying to establish their own internet financial systems to provide local users with internet financial services.

[0003] Users of internet financial start-ups also face the risks of account hacking and asset theft. However, very few internet start-ups have a risk management team, and even if an internet start-up has a risk management team, the risk management experience and capabilities of the team are inadequate. Therefore, solving the risk management problems of the companies lacking risk management experience and risk management capabilities is important to the development prospects of the companies.

SUMMARY

[0004] Therefore, the present disclosure provides a risk decision-making method and apparatus. By using the risk decision-making method and apparatus, risk assessment is performed on a local service by using a risk decision-making rule from a central server, which may improve the risk management capabilities of a company that originally has no risk management capabilities or that has insufficient risk management capabilities.

[0005] According to an aspect of the present disclosure, a risk decision-making method is provided, including: receiving a risk decision-making request initiated by a local service system, the risk decision-making request including service information of a local service; performing, based on the service information of the local service, risk assessment on the local service by using a first risk decision-making rule for the local service to determine a first risk

assessment result for the local service, the first risk decision-making rule being obtained from a central server; and determining a risk decision-making result for the local service based on the first risk assessment result.

[0006] Optionally, in an example, the first risk rule may have at least one label corresponding to at least one local merchant, and the first risk rule for each merchant may be packaged in the central server based on the label.

[0007] Optionally, in an example, before the determining a risk decision-making result for the local service based on the first risk assessment result, the method may further include: performing, based on the service information and/or the first risk assessment result, risk assessment on the local service by using a second risk decision-making rule to determine a second risk assessment result for the local service, the second risk decision-making rule being created locally. The determining a risk decision-making result for the local service based on the first risk assessment result includes: determining, based on a preset rule, the risk decision-making result for the local service from the first risk assessment result and the second risk assessment result.

[0008] Optionally, in an example, the method may further include: adjusting the second risk decision-making rule according to the risk decision-making result and the second risk assessment result if the determined risk decision-making result is different from the second risk assessment result.

[0009] Optionally, in an example, the risk assessment result for the local service may be one of the following: rejecting the local service; verifying the local service; and accepting the local service.

[0010] Optionally, in an example, the preset rule may include at least one of the following: determining the first risk assessment result as the risk decision-making result for the local service; determining the second risk assessment result as the risk decision-making result for the local service; and determining a risk assessment result with a higher priority in the first risk assessment result and the second risk assessment result as the risk decision-making result for the local service.

[0011] Optionally, in an example, the local service includes local services corresponding to at least two service categories, each local service has at least one service risk category, the first risk decision-making rule may correspond to the service risk category, and before the first risk assessment result for the local service is determined based on the service information by using the first risk decision-making rule obtained from the central server, the method may further include: determining the service risk category of the local service based on the service

information of the local service; and obtaining the corresponding first risk decision-making rule based on the service category and/or the service risk category of the local service.

[0012] Optionally, in an example, the second risk decision-making rule may correspond to the service risk category, and before the performing, based on the service information and/or the first risk assessment result, risk assessment on the local service by using a second risk decision-making rule, the method may further include: obtaining the corresponding second risk decision-making rule based on the service risk category of the local service.

[0013] According to another aspect of the present disclosure, a risk decision-making apparatus is provided, including: a risk decision-making request receiving unit, configured to receive a risk decision-making request initiated by a local service system, the risk decision-making request including service information of a local service; a first risk assessment unit, configured to perform, based on the service information of the local service, risk assessment on the local service by using a first risk decision-making rule for the local service to determine a first risk assessment result for the local service, the first risk decision-making rule being obtained from a central server; and a risk decision-making result determining unit, configured to determine a risk decision-making result for the local service based on the first risk assessment result.

[0014] Optionally, in an example, the apparatus may further include: a second risk assessment unit, configured to: before the risk decision-making result for the local service is determined based on the first risk assessment result, perform, based on the service information and/or the first risk assessment result, risk assessment on the local service by using a second risk decision-making rule to determine a second risk assessment result for the local service, the second risk decision-making rule being created locally. The risk decision-making result determining unit may be configured to determine, based on a preset rule, the risk decision-making result for the local service from the first risk assessment result and the second risk assessment result.

[0015] Optionally, in an example, the apparatus may further include: a rule adjustment unit, configured to adjust the second risk decision-making rule according to the risk decision-making result and the second risk assessment result if the determined risk decision-making result is different from the second risk assessment result.

[0016] Optionally, in an example, the risk assessment result for the local service may be one of the following: rejecting the local service; verifying the local service; and accepting the local service.

[0017] Optionally, in an example, the preset rule may include at least one of the following:

determining the first risk assessment result as the risk decision-making result for the local service; determining the second risk assessment result as the risk decision-making result for the local service; and determining a risk assessment result with a higher priority in the first risk assessment result and the second risk assessment result as the risk decision-making result for the local service.

[0018] Optionally, in an example, the local service includes local services corresponding to at least two service categories, each local service is at least in one service risk category, the first risk decision-making rule corresponds to the service risk category, and the apparatus may further include: a service risk category determining unit, configured to determine the service risk category of the local service based on the service information of the local service before the first risk assessment result for the local service is determined based on the service information by using the first risk decision-making rule obtained from the central server; and a first risk decision-making rule obtaining unit, configured to obtain the corresponding first risk decision-making rule based on the service category and/or the service risk category of the local service.

[0019] Optionally, in an example, the second risk decision-making rule corresponds to the service risk category, and the apparatus may further include: a second risk decision-making rule obtaining unit, configured to obtain the corresponding second risk decision-making rule based on the service risk category of the local service before risk assessment is performed on the local service based on the service information and/or the first risk assessment result by using the second risk decision-making rule.

[0020] According to another aspect of the present disclosure, a computing device is provided, including: at least one processor; and a memory, the memory storing instructions, the instructions, when executed by the at least one processor, causing the at least one processor to perform the foregoing risk decision-making method.

[0021] According to another aspect of the present disclosure, a non-transitory machine-readable storage medium is provided, storing executable instructions, the instructions, when executed, causing the machine to perform the foregoing risk decision-making method.

[0022] With the risk decision-making method and apparatus in the present disclosure, a first risk decision-making rule issued from a central server to the local may be used to perform risk assessment on a local service, and the first risk decision-making rule may be configured on the central server by a team with sufficient risk management experience and risk management capabilities. In this case, the risk management capabilities of the team with sufficient risk management experience and risk management capabilities enable an enterprise

with insufficient risk management capabilities to carry out secure risk management.

[0023] With the risk decision-making method and apparatus in the present disclosure, risk assessment is performed on the local service by using a locally configured second risk decision-making rule, which enables a local risk management team to independently configure the second risk decision-making rule according to actual conditions. Then a final risk decision-making result is obtained based on an assessment result of the first risk decision-making rule from the central server and an assessment result of the locally configured second risk decision-making rule, so that the risk decision-making result meets a local need and local risk management capabilities are improved without compromising the flexibility of risk management. In addition, risk assessment is performed according to the first risk assessment result when the locally configured second risk decision-making rule is used for risk assessment, which reduces the difficulty of configuring the local second risk decision-making rule and improves the accuracy of risk assessment using the local second risk decision-making rule.

[0024] With the risk decision-making method and apparatus in the present disclosure, the second risk decision-making rule is adjusted according to the finally determined risk decision-making result and the locally configured second risk assessment result if the determined risk decision-making result is different from the second risk assessment result, which improves the accuracy of the locally configured second risk decision-making result, and enables the local team to continuously improve the risk management capabilities in the risk management practice.

[0025] With the risk decision-making method and apparatus in the present disclosure, the service risk category of the local service is determined and risk assessment is performed on the local service by using the risk decision-making result corresponding to the service risk category, which improves the accuracy and the efficiency of the risk decision-making.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] The essence and advantages of the content of the present disclosure can be further construed with reference to the following accompanying drawings. In the accompanying drawings, similar components or features may have the same reference numerals. The accompanying drawings are intended to provide further understanding of the embodiments of this application and constitute a part of this specification. The accompanying drawings and the specific implementations below are used together for explaining the embodiments of the present disclosure rather than constituting a limitation to the embodiments of the present

disclosure. In the accompanying drawings:

[0027] FIG. 1 is a flowchart of a risk decision-making method according to an embodiment of the present disclosure;

[0028] FIG. 2 is a schematic diagram of an example of a risk decision-making system to which the present disclosure is applicable;

[0029] FIG. 3 is a flowchart of a risk decision-making method according to another embodiment of the present disclosure;

[0030] FIG. 4 is a flowchart of a risk decision-making method according to another embodiment of the present disclosure;

[0031] FIG. 5 is a structural block diagram of a risk decision-making apparatus according to an embodiment of the present disclosure;

[0032] FIG. 6 is a structural block diagram of a risk decision-making apparatus according to another embodiment of the present disclosure; and

[0033] FIG. 7 is a structural block diagram of a computing device for implementing a risk decision-making method according to an embodiment of the present disclosure.

DETAILED DESCRIPTION

[0034] A subject described in this specification is discussed now with reference to exemplary implementations. It should be understood that, discussion of the implementations is merely intended to make a person skilled in the art better understand and implement the subject described in this specification, and is not intended to limit the protection scope of the claims, the applicability, or examples. Changes may be made to the functions and arrangements of the discussed elements without departing from the protection scope of the content of the present disclosure. Various processes or components may be omitted, replaced, or added in each example according to requirements. In addition, features described in some examples may also be combined in other examples.

[0035] As used in this specification, the term "include" and variants thereof represent open terms, and means "include but is not limited to." The term "based on" represents "at least partially based on." The terms "one embodiment" and "an embodiment" represent "at least one embodiment." The term "another embodiment" represents "at least one another embodiment." The terms "first," "second," and the like may represent different objects or the same object. Other definitions may be included explicitly or implicitly in the following. Unless otherwise clearly specified, the definition of one term is consistent in the entire specification.

[0036] The risk decision-making method and apparatus of the present disclosure are described with reference to the accompanying drawings.

[0037] FIG. 1 is a flowchart of a risk decision-making method according to an embodiment of the present disclosure.

[0038] In the risk decision-making method of the present disclosure, related entities include a local service system, a local server, and a central server. The risk decision-making method in the following embodiments is performed by the local server.

[0039] As shown in FIG. 1, in block 110, a risk decision-making request initiated by a local service system is received, the risk decision-making request including service information of a local service. The service information of the local service may be, for example, device information, user information, bank card information, or account information corresponding to the local service.

[0040] The local service system is a service system at the local, such as a third-party payment system for an internet start-up. When a local service occurs in the local service system, the local service system triggers a risk decision-making request to request risk decision-making on the current local service.

[0041] In block 120, risk assessment is performed on the local service based on the service information of the local service by using a first risk decision-making rule for the local service to determine a first risk assessment result for the local service. The first risk decision-making rule is obtained from the central server. The local service may correspond to various service categories, such as a transfer service, a payment service, a recharging service, etc. The first risk decision-making rule for the local service may be a first risk decision-making rule for a service category to which the local service belongs. In an example, the first risk rule for the local service may alternatively be universal.

[0042] The central server is a server that provides risk management services for a local enterprise. For example, the central server may be a server of an enterprise with sufficient risk management capabilities. A risk management team on the central server side can configure a risk decision-making rule that may be used by the local service system and then distribute the rule to the local.

[0043] FIG. 2 is a schematic diagram of an example of a risk decision-making system 200 to which the present disclosure is applicable. As shown in FIG. 2, a central server 210 may be configured with at least one merchant strategy management unit 211, and each merchant strategy management unit 211 corresponds to one local merchant. The local merchant may be a local internet finance start-up. Each local merchant has a local server 220. A strategy

configuration unit 212 of the central server 210 can configure corresponding first risk decision-making rules for local merchants respectively and variables for calling the first risk decision-making rules.

[0044] Each first risk decision-making rule and variable may have at least one label, and each label corresponds to a local merchant. If the first risk decision-making rules for the merchants are not shared with each other, each first risk decision-making rule may have a label to identify the local merchant corresponding to the first risk decision-making rule. In an example, some first risk decision-making rules may be shared by a plurality of merchants. In this example, the shared first risk decision-making rule may have labels corresponding to a plurality of local merchants. In the example where there are a plurality of labels, the first risk decision-making rule can be reused, thereby improving the configuration efficiency of the first risk decision-making rule. The risk management team of the central server can configure the same first risk decision-making rule for a plurality of local merchants with the same attribute, and assign a plurality of labels corresponding to the plurality of local merchants to the first risk decision-making rule.

[0045] The label of each merchant may be determined by risk management personnel on the central server side. Alternatively, the label of each merchant may be sent to the central server by the local server of the local merchant. The risk management personnel on the central server side can assign labels to first risk decision-making rules and variables when configuring the first risk decision-making rules.

[0046] After the strategy configuration unit 212 configures the first risk decision-making rules, the first risk decision-making rules may be packaged based on the labels of the first risk decision-making rules. During packaging, the first risk decision-making rules and variables with the same label may be packaged together. A first risk decision-making rule with a plurality of labels are packaged into a plurality of risk decision-making rule packages. The packaged first risk decision-making rules may be stored in the merchant strategy management units 211 corresponding to the local merchants. Then the local merchants log in to a management platform to obtain respective first risk decision-making rules. In an example, the first risk decision-making rule may alternatively be sent to the corresponding local merchant after being packaged. The merchant strategy management units 211 may be physically isolated from each other, that is, each local merchant can only obtain the respective first risk decision-making rule after logging in to the management platform.

[0047] The strategy configuration unit 212 may have functions such as adding, modifying, deleting, and querying a risk decision-making rule or variable, and may also have a preliminary

audit or review function for a risk decision-making rule and variable. Staff of the risk management team on the side of the central server 210 can log in to a management backend of the central server 210, and configure or update the first risk decision-making rules and variables by using the strategy configuration unit 212. When the risk management team of the local merchant believes that a first risk decision-making rule or a corresponding variable requires update such as adding, modifying, or deleting, a request may be sent to the central server via the local server 220. After receiving the request, the risk management team on the central server side may update the first risk decision-making rule for the corresponding local merchant, and repackage and send the rule to the local server 220. Alternatively, the risk management team on the central server side repackages and then stores the rule in the corresponding local merchant strategy management unit, and the rule is downloaded by the risk management team of the local merchant.

[0048] The local server 220 may load the obtained first risk decision-making rule into a local database, or a local risk control team may configure the obtained first risk decision-making rule in the local server. When a local service system 230 triggers a risk decision-making request, the local server may call the first risk decision-making rule from the central server 210 in accordance with a prescribed variable, so that risk assessment can be performed on the local service based on the service information of the local service.

[0049] In the present disclosure, the risk assessment result may be, for example, rejecting the local service. For example, when the risk assessment result indicates that a transfer service has a high risk of asset theft, the execution of the transfer service may be rejected, thereby protecting the security of assets of the user. The risk assessment result may alternatively be verifying the local service. For example, when a transfer service has a risk of asset theft but the risk is not very high, the transfer service may be further verified, and then it may be determined whether to allow the execution of the corresponding local service according to the result of the further verification. If the local service has no risk or has a low risk, the risk assessment result may be accepting the local service, that is, the local service is allowed to be executed.

[0050] The risk assessment result may further include content such as a risk information serial number and a risk score corresponding to the local service. For example, the risk information serial number may represent various types of specific risk content, and a database may also include detailed descriptions and recommended response strategies for the various specific risk content. Therefore, the foregoing content can be obtained by searching according to the risk information serial number.

[0051] After the first risk assessment result is obtained, in block 130, a risk decision-

making result for the local service is determined based on the first risk assessment result. In an example, the first risk assessment result may be determined as the risk decision-making result for the local service.

[0052] In addition, in the process of determining the risk decision-making result for the local service, service information, an intermediate risk assessment result, a final risk decision-making result, and other information may also be collected and stored in the database for analysis by risk management personnel.

[0053] FIG. 3 is a flowchart of a risk decision-making method according to another embodiment of the present disclosure.

[0054] As shown in FIG. 3, in block 310, a risk decision-making request initiated by a local service system is received. Next, in block 320, risk assessment is performed on a local service by using a first risk decision-making rule from a central server.

[0055] After the risk decision-making request is received, in block 330, risk assessment is performed on the local service based on service information and/or a first risk assessment result by using a second risk decision-making rule to determine a second risk assessment result for the local service, the second risk decision-making rule being created locally.

[0056] In an example, if the local risk management team is capable of risk management, the second risk decision-making rule configured locally can be used to determine the second risk assessment result of the local service based on the service information. In another example, if the risk decision-making rule configured by the local risk management team is of low accuracy, when the second risk decision-making rule configured locally is used to determine the second risk assessment result, the first risk assessment result determined above may be used as a reference or the second risk assessment result may be obtained based only on the first risk assessment result. For example, when the first risk assessment result includes a risk score, the locally configured second risk decision-making rule may be rejecting the execution of the local service when the risk score is greater than a threshold.

[0057] After the first risk assessment result and the second risk assessment result are determined, in block 340, a risk decision-making result for the local service is determined from the first risk assessment result and the second risk assessment result based on a preset rule. In an example, if the risk management capabilities of the local risk management team are inadequate, the first risk assessment result determined by the first risk decision-making rule can be used as the risk decision-making result for the local service. In another example, if the risk management capabilities of the local risk management team are adequate, the second risk assessment result determined by the locally configured second risk decision-making rule is

used as the risk decision-making result for the local service.

[0058] In another example, the risk decision-making result may be determined according to a priority order of the first risk assessment result and the second risk assessment result. For example, the priority order of the risk assessment results may be that "rejecting the local service" has a higher priority than "verifying the local service," and "verifying the local service" has a higher priority than "accepting the local service." Assume that the first risk assessment result corresponds to "verifying the local service," and the second risk assessment result corresponds to "rejecting the local service." Because the second risk assessment result has a higher priority than the first risk assessment result, the second risk assessment result with the higher priority may be determined as the risk decision-making result for the local service.

[0059] The priorities of the risk assessment results may be determined based on rules of strictness. For example, when risk assessment is performed, "rejecting the local service" is stricter than "verifying the local service," and "verifying the local service" is stricter than "accepting the local service." The priority order of the risk assessment results may be determined in a descending order of "rejecting the local service," "verifying the local service," and "accepting the local service." Priorities determined based on the rules of strictness can improve the security of the risk decision-making result.

[0060] In addition, if the risk assessment result includes a risk score, an arithmetic mean or a weighted arithmetic mean calculation may further be performed on risk scores in the first risk assessment result and the second risk assessment result, to determine the risk decision-making result for the local service.

[0061] After the risk decision-making result for the local service is determined from the first risk assessment result and the second risk assessment result, in block 350, whether the finally determined risk decision-making result is the same as the second risk assessment result obtained locally may be determined.

[0062] If the determined risk decision-making result is different from the second risk assessment result obtained locally, in block 360, the second risk decision-making rule may be adjusted according to the risk decision-making result and the second risk assessment result.

[0063] For example, when confidence in the locally configured second risk decision-making rule is insufficient, the first risk assessment result can be unconditionally determined as the risk decision-making result, and when the second risk assessment result is different from the finally determined risk assessment result, the second risk decision-making rule is adjusted. As a result, the accuracy of the local second risk decision-making rule can be gradually improved. In another example, after the first risk assessment result is determined, and the

second risk assessment result is obtained by using the second risk decision-making rule based on the first risk assessment result, if the risk decision-making result determined from the first risk assessment result and the second risk assessment result is different from the second risk assessment result, the second risk decision-making rule may be adjusted based on the determined risk decision-making result. The adjustment of the second risk decision-making rule may be adjusting a threshold or other parameters of the second risk decision-making rule.

[0064] In addition, the risk decision-making rule may correspond to a risk category of the local service. FIG. 4 is a flowchart of a risk decision-making method according to another embodiment of the present disclosure. As shown in FIG. 4, in block 410, a risk decision-making request initiated by a local service system is received. Then, in block 420, a service risk category of a local service is determined based on service information of the local service. The service risk category may include, for example, malicious marketing or fraud. In an example, a large amount of historical data can be collected and thus a service risk classification model can be trained, so that the service risk model can be used to classify service information to obtain the service risk category of the local service. The service risk category of the local service may alternatively be a service risk with the highest occurrence frequency of each local service. For example, for a transfer service, a service risk with the highest occurrence frequency may be fraud.

[0065] After the risk category of the local service is determined, in block 430, a first risk decision-making rule corresponding to the risk category is obtained based on a service category and/or the service risk category of the local service. Then in block 440, risk assessment is performed on the local service by using the obtained first risk decision-making rule corresponding to the service risk category to determine a first risk assessment result for the local service.

[0066] In addition, before a second risk assessment result is determined, in block 450, a corresponding second risk decision-making rule is obtained based on the service category and/or the service risk category of the local service.

[0067] The first risk decision-making rule obtained from the server and the locally configured second risk decision-making rule may correspond to different service categories, and may further correspond to different service risk categories. In an example, risk decision-making rules for different service categories may be obtained. In another example, a risk decision-making rule corresponding to a determined service risk category may be obtained from risk decision-making rules corresponding to different service categories. In addition, a risk decision-making rule corresponding to a determined service risk category may

alternatively be obtained regardless of the service category.

[0068] Then in block 460, risk assessment is performed on the local service by using the obtained second risk decision-making rule corresponding to the service risk category to determine a second risk assessment result for the local service. Finally, in block 470, a risk decision-making result for the local service is determined from the first risk assessment result and the second risk assessment result based on a preset rule.

[0069] The service risk category of the local service is determined and risk assessment is performed by using the risk decision-making rule corresponding to the service risk category, which improves the accuracy and the efficiency of the service risk assessment.

[0070] FIG. 5 is a structural block diagram of a risk decision-making apparatus 500 according to an embodiment of the present disclosure. As shown in FIG. 5, the risk decision-making apparatus 500 includes a risk decision-making request receiving unit 510, a first risk assessment unit 510, and a risk decision-making result determining unit 520.

[0071] The risk decision-making request receiving unit 510 is configured to receive a risk decision-making request initiated by a local service system, the risk decision-making request including service information of a local service. The first risk assessment unit 520 is configured to perform, for the risk decision-making request sent by the local service system, risk assessment on the local service based on the service information of the local service carried in the risk decision-making request and by using a first risk decision-making rule from the central server, to determine a first risk assessment result for the local service. After the first risk assessment result is determined, the risk decision-making result determining unit 530 determines a risk decision-making result for the local service based on the first risk assessment result.

[0072] FIG. 6 is a structural block diagram of a risk decision-making apparatus 600 according to another embodiment of the present disclosure. As shown in FIG. 6, the risk decision-making apparatus 600 includes a risk decision-making request receiving unit 610, a service risk category determining unit 620, a first risk decision-making rule obtaining unit 630, a first risk assessment unit 640, a second risk decision-making rule obtaining unit 650, a second risk assessment unit 660, a risk decision-making result determining unit 670, and a rule adjustment unit 680.

[0073] The risk decision-making request receiving unit 610 is configured to receive a risk decision-making request initiated by a local service system, the risk decision-making request including service information of a local service. The service risk category determining unit 620 is configured to determine a service risk category of the local service based on the

service information of the local service before a first risk assessment result for the local service is determined based on the service information of the local service by using a first risk decision-making rule obtained from a central server. After the service risk category is determined, the first risk decision-making rule obtaining unit 630 obtains the first risk decision-making rule corresponding to the determined service risk category based on a service category and/or the service risk category of the local service. Then the first risk assessment unit 640 performs risk assessment on the local service by using the obtained first risk decision-making rule corresponding to the service risk category to determine a first risk assessment result for the local service.

[0074] The second risk decision-making rule obtaining unit 650 is configured to obtain a corresponding second risk decision-making rule based on the service risk category of the local service before risk assessment is performed on the local service based on the service information and/or the first risk assessment result by using the second risk decision-making rule. Then the second risk assessment unit 660 performs risk assessment on the local service based on the obtained second risk decision-making rule corresponding to the determined service risk category to obtain a second risk assessment result.

[0075] After the first risk assessment result and the second risk assessment result are determined, the risk decision-making result determining unit 670 may be configured to determine, based on a preset rule, a risk decision-making result for the local service from the first risk assessment result and the second risk assessment result. For example, the first risk assessment result may be determined as the risk decision-making result for the local service, or the second risk assessment result may be determined as the risk decision-making result for the local service. In an example, a risk assessment result with a higher priority in the first risk assessment result and the second risk assessment result may be determined as the risk decision-making result for the local service. In an example, the risk assessment result for the local service may be rejecting the local service, verifying the local service, or accepting the local service.

[0076] After the final risk decision-making result is obtained, the rule adjustment unit 680 may adjust the second risk decision-making rule according to the risk decision-making result and the second risk assessment result if the determined risk decision-making result is different from the second risk assessment result.

[0077] It should be noted that all the constituent elements in FIG. 6 are not indispensable. For example, in another example, the risk decision-making apparatus 600 may not include the service risk category determining unit 620, the first risk decision-making rule obtaining unit 630, or the second risk decision-making rule obtaining unit 650. In another example, the risk

decision-making apparatus 600 may not include the rule adjustment unit 680.

[0078] As shown in FIG. 1 to FIG. 6, the embodiments of the risk decision-making method and apparatus of the present disclosure are described. It should be understood that the detailed description of the method embodiments is also applicable to the apparatus embodiments. The risk decision-making apparatus above may be implemented in the form of hardware, or in the form of software, or a combination of hardware and software. The embodiments are all described in a progressive manner, for same or similar parts in the embodiments, reference may be made to each other, and descriptions of each embodiment focus on a difference from other embodiments.

[0079] FIG. 7 is a structural block diagram of a computing device 700 for implementing risk decision-making method according to an embodiment of the present disclosure.

[0080] As shown in FIG. 7, the computing device 700 may include at least one processor 710, a memory 720, an internal memory 730, a communication interface 740, and an internal bus 750. The at least one processor 710 executes at least one computer-readable instruction (i.e., the foregoing element implemented in the form of software) stored or encoded in a computer-readable storage medium (i.e., the memory 720).

[0081] In an embodiment, the memory 720 stores computer-executable instructions, the instructions, when executed, causing the at least one processor 710 to: receive a risk decision-making request initiated by a local service system, the risk decision-making request including service information of a local service; perform, based on the service information of the local service, risk assessment on the local service by using a first risk decision-making rule for the local service to determine a first risk assessment result for the local service, the first risk decision-making rule being obtained from a central server; and determine a risk decision-making result for the local service based on the first risk assessment result.

[0082] It should be understood that, computer executable instructions stored in the memory 720, when executed, cause at least one processor 710 to perform the various operations and functions described in the foregoing embodiments of the present disclosure with reference to FIG. 1 to FIG. 6.

[0083] In the present disclosure, the computing device 700 may include, but not limited to: a personal computer, a server computer, a workstation, a desktop computer, a laptop computer, a notebook computer, a mobile computing device, a smart phone, a tablet computer, a cellular phone, a personal digital assistant (PDA), a handheld apparatus, a messaging device, a wearable computing device, a consumer electronic device, and the like.

[0084] According to an embodiment, a program product of, for example, a non-transitory

machine-readable medium, is provided. The non-transitory machine-readable medium may be provided with instructions (i.e., the element implemented in the form of software), the instructions, when executed by the machine, causing the machine to perform the steps and functions described above with reference to FIG. 1 to FIG. 6 in the embodiments of the present disclosure.

[0085] Specifically, a system or an apparatus provided with a readable storage medium may be provided. The readable storage medium stores software program code that implements functions of any one of the foregoing embodiments, and a computer or processor of the system or the apparatus is enabled to read and execute instructions stored in the readable storage medium.

[0086] In this case, program code read from the readable medium can implement the functions in any one of the foregoing embodiments, and therefore the machine-readable code and the readable storage medium for storing the machine-readable code constitute a part of the present invention.

[0087] Examples of the readable storage medium includes a floppy disk, a hard disk, a magneto-optical disk, an optical disk (for example, a CD-ROM, a CD-R, a CD-RW, a DVD-ROM, a DVD-RAM, a DVD-RW, or a DVD-RW), a magnetic tape, a nonvolatile storage card, and a ROM. Optionally, the program code may be downloaded from a server computer or a cloud by using a communication network.

[0088] Embodiments of this specification are described above. Other embodiments fall within the scope of the appended claims. In some embodiments, the actions or steps recorded in the claims may be performed in sequences different from those in the embodiments and an expected result may still be achieved. In addition, the processes depicted in the accompanying drawings is not necessarily performed in the specific order or successively to achieve an expected result. In some implementations, multitasking and parallel processing may be feasible or beneficial.

[0089] A term "exemplary" used in the entire specification means "used as an example, an instance, or an illustration," and does not mean "preferred" or "superior" over other embodiments. To provide an understanding of the described technologies, the specific implementations include specific details. However, these technologies may be implemented without these specific details. In some embodiments, to avoid confusing the concept of the described embodiments, a well-known structure and apparatus are shown in a block diagram form.

[0090] The optional implementations of the embodiments of the present disclosure are

described in detail above with reference to the accompanying drawings. However, the embodiments of the present disclosure are not limited to the specific details in the foregoing implementations, a plurality of simple deformations may be made to the technical solution of the embodiments of the present disclosure within a range of the technical concept of the embodiments of the present disclosure, and these simple deformations fall within the protection scope of the embodiments of the present disclosure.

[0091] The descriptions of the content of the present disclosure are provided to allow any person of ordinary skill in the art to implement or use the content of the present disclosure. For a person of ordinary skill in the art, various modifications on the content of the present disclosure are obvious. In addition, a general principle defined in this specification may be applied to other variants without departing from the protection scope of the content of the present disclosure. Therefore, the content of the present disclosure is not limited to the examples and designs described in this specification, but is consistent with the widest range conforming to the principle and novelty disclosed in this specification.

CLAIMS

What is claimed is:

1. A risk decision-making method, comprising:
 - receiving a risk decision-making request initiated by a local service system, the risk decision-making request comprising service information of a local service;
 - performing, based on the service information of the local service, risk assessment on the local service by using a first risk decision-making rule for the local service to determine a first risk assessment result for the local service, the first risk decision-making rule being obtained from a central server;
 - performing, based on the service information and/or the first risk assessment result, risk assessment on the local service by using a second risk decision-making rule to determine a second risk assessment result for the local service, the second risk decision-making rule being created locally; and
 - determining, based on a preset rule, a risk decision-making result for the local service from the first risk assessment result and the second risk assessment result.
2. The method according to claim 1, wherein the first risk rule has at least one label corresponding to at least one local merchant, and the first risk rule for each merchant is packaged in the central server based on the label.
3. The method according to claim 1, further comprising:
 - adjusting the second risk decision-making rule according to the risk decision-making result and the second risk assessment result if the determined risk decision-making result is different from the second risk assessment result.
4. The method according to any one of claims 1 to 3, wherein the risk assessment result for the local service is one of the following:
 - rejecting the local service;
 - verifying the local service; and
 - accepting the local service.
5. The method according to claim 4, wherein the preset rule comprises at least one of the following:
 - determining the first risk assessment result as the risk decision-making result for the local service;
 - determining the second risk assessment result as the risk decision-making result for the local service; and
 - determining a risk assessment result with a higher priority in the first risk assessment result and the second risk assessment result as the risk decision-making result for the local service.
6. The method according to any one of claims 1 to 3, wherein the local service comprises local services corresponding to at least two service categories, each local service has at least one service risk category, the first risk decision-making rule corresponds to the service risk category, and before the first risk assessment result for the local service is determined based on the service information by using the first risk decision-making rule obtained from the central server, the method further comprises:
 - determining the service risk category of the local service based on the service information of the local service; and
 - obtaining the corresponding first risk decision-making rule based on the service category and/or the service risk category of the local service.
7. The method according to claim 6, wherein the second risk decision-making rule corresponds to the service risk category, and before the performing, based on the service

information and/or the first risk assessment result, risk assessment on the local service by using a second risk decision-making rule, the method further comprises:

obtaining the corresponding second risk decision-making rule based on the service risk category of the local service.

8. A risk decision-making apparatus, comprising:

a risk decision-making request receiving unit, configured to receive a risk decision-making request initiated by a local service system, the risk decision-making request comprising service information of a local service;

a first risk assessment unit, configured to perform, based on the service information of the local service, risk assessment on the local service by using a first risk decision-making rule for the local service to determine a first risk assessment result for the local service, the first risk decision-making rule being obtained from a central server;

a second risk assessment unit, configured to: before a risk decision-making result for the local service is determined based on the first risk assessment result, perform, based on the service information and/or the first risk assessment result, risk assessment on the local service by using a second risk decision-making rule to determine a second risk assessment result for the local service, the second risk decision-making rule being created locally; and

a risk decision-making result determining unit, configured to determine, based on a preset rule, a risk decision-making result for the local service from the first risk assessment result and the second risk assessment result.

9. The apparatus according to claim 8, further comprising:

a rule adjustment unit, configured to adjust the second risk decision-making rule according to the risk decision-making result and the second risk assessment result if the determined risk decision-making result is different from the second risk assessment result.

10. The apparatus according to any one of claims 8 to 9, wherein the risk assessment result for the local service is one of the following:

rejecting the local service;

verifying the local service; and

accepting the local service.

11. The apparatus according to claim 10, wherein the preset rule comprises at least one of the following:

determining the first risk assessment result as the risk decision-making result for the local service;

determining the second risk assessment result as the risk decision-making result for the local service; and

determining a risk assessment result with a higher priority in the first risk assessment result and the second risk assessment result as the risk decision-making result for the local service.

12. The apparatus according to any one of claims 8 to 9, wherein the local service comprises local services corresponding to at least two service categories, each local service is at least in one service risk category, the first risk decision-making rule corresponds to the service risk category, and the apparatus further comprises:

a service risk category determining unit, configured to determine the service risk category of the local service based on the service information of the local service before the first risk assessment result for the local service is determined based on the service information by using the first risk decision-making rule obtained from the central server; and

a first risk decision-making rule obtaining unit, configured to obtain the corresponding first risk decision-making rule based on the service category and/or the service risk category of the local service.

13. The apparatus according to claim 12, wherein the second risk decision-making rule

corresponds to the service risk category, and the apparatus further comprises:

a second risk decision-making rule obtaining unit, configured to obtain the corresponding second risk decision-making rule based on the service risk category of the local service before risk assessment is performed on the local service based on the service information and/or the first risk assessment result by using the second risk decision-making rule.

14. A computing device, comprising:

at least one processor; and

a memory, storing instructions, the instructions, when executed by the at least one processor, causing the at least one processor to perform the method according to any one of claims 1 to 7.

15. A non-transitory machine-readable storage medium, storing executable instructions, the instructions, when executed, causing the machine to perform the method according to any one of claims 1 to 7.