Research and Application Analysis of Two-Level Operational Risk Prevention and Control System of "Online State Grid"

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Abstract: In order to solve the operational risks faced by the "Online State Grid" APP, this paper proposes to study and construct the operational risk prevention and control system at provincial level and headquarters level. Establish a closed-loop risk control mechanism including risk identification, risk warning, risk disposal, risk interception and risk re-evaluation, and create a two-level operation risk control process including the "Online State Grid" APP headquarters operation risk control center, 95598 customer service center, A city operation risk control center and local companies; Through the construction of operation system and the improvement of management mechanism, the research results of this paper have important guiding and reference value for establishing and perfecting the operation risk prevention and control system of "Online State Grid" APP, and comprehensively improving the active defense capability of "Online State Grid" APP.

Keywords: "Online State Network", Two-Level Operational Risk Prevention and Control, Defensive Ability, Risk Identification.

1 INTRODUCTION

"Online State Grid" APP is the official and unified online service population of State Grid Corporation of China, which integrates five service scenarios of "residence, electric vehicle, shops, enterprises and new energy" to meet customers' all-round and personalized power demand [1]. While the "Online State Grid" has achieved good operational results, it will inevitably attract the attention of a large number of black goods. By registering a large number of accounts, repeatedly binding users' numbers, and taking advantage of loopholes in activity rules, they encroach on the rights and interests of ordinary users and take a large number of activity points, resulting in the loss of users' rights and interests [2]. The operational risk prevention and control situation of "Online State Grid" is becoming increasingly severe, and there is much room for improvement in risk identification means. With the upgrading of malicious network attack technology and the updating of its means, the trend of risk prevention and control of "Online State Grid" is becoming increasingly severe. There is much room for improvement in risk closed-loop control and risk prevention and control system construction [3]. Multi-level coordination of operational risk prevention and control. How to efficiently carry out automatic, intelligent risk analysis and identification, risk early warning, risk disposal, and

follow-up management based on risk control rules, accumulate risk prevention and control experience, solidify and form standardized business norms and processes, quickly identify risks, reduce risk losses as much as possible, and comprehensively improve operational risk prevention and control capabilities are the key points of operational risk control.

2 "ONLINE STATE GRID" TWO-LEVEL OPERATIONAL RISK PREVENTION AND CONTROL SYSTEM RESEARCH

2.1 Risk Control Objects and Risk Control Rules

Based on the operation data of "Online State Grid", the operation big data warehouse is extracted and constructed, including user account data, user behavior data, activity participation data, rights and interests operation and other data, and the objects of operation risk control are discovered as shown in Table 1 [4].

Table 1 "Online State Grid" Operation Risk Control Object

target	explain	Risk characteristics	Wind control scene
account number	Register an account on the Internet.	Virtual mobile phone number and account recommendation relationship	User behavior risk control, operational activity risk control and point management risk control.
Household number	Online national network binding account number	Account binding unties a large number of account numbers, account numbers in the same period, etc., and a large number of prizes are written off.	User behavior risk control, operational activity risk control and point management risk control.
activity	Operational activities	A large number of users participate in activities.	Operational risk control
prize	Operating prizes	Users get a lot of prizes, and the prizes are written off through multiple account numbers.	Operational risk control
Ip address	Account login IP address	Log in with a large number of accounts at the same IP address	User behavior risk control and operational activity risk control
terminal device	Account login device	Log in to a large number of accounts of the same device.	User behavior risk control and operational activity risk control
integration	On-line State Network User Incentive Content	Accounts get a lot of points and accounts consume a lot of points.	User behavior risk control and point management risk control

Based on the online operation data of State Grid, users' behavior trajectories are extracted, such as registration, binding, participation in activities, etc., and information including people,

time, events and so on is extracted to construct events. According to the relationship between events (including time sequence, cause and effect, co-reference, subordination, etc.), different event rules are linked, as shown in Table 2 [5-6].

Table 2 "Online State Grid" Operation Risk Control Rules

rule	explain	Risk characteristics	Applicable scene
recommend	Account Registration Recommend New Account Registration	Virtual cell phone number, cell phone number of the same segment, and continuous cell phone number.	User behavior risk control, operational activity risk control and point management risk control.
bind	Account number binding account number	Account binding unties a large number of account numbers, account numbers in the same period, etc., and a large number of prizes are written off.	User behavior risk control, operational activity risk control and point management risk control.
participate in activities	Participate in operation activities of account number.	A large number of users participate in activities.	Operational risk control
Get a prize	Account number to win prizes for operational activities.	Users get a lot of prizes.	Operational risk control
Write off prizes	The prize is written off by the account number.	Prizes are written off by multiple account numbers.	Operational risk control
IP login address	Account login IP address	Log in with a large number of accounts at the same IP address	User behavior risk control and operational activity risk control
Login device	Account login device	Log in to a large number of accounts of the same device.	User behavior risk control and operational activity risk control
Get integral	Get user incentive content	Some accounts get a lot of points.	User behavior risk control and point management risk control
Consumption integral	Account number consumption points	Consume a lot of points through some account numbers.	User behavior risk control and point management risk control

2.2 Online Monitoring of Operational Risks

Based on risk rules, conduct real-time monitoring and analysis on accounts, activities, points distribution and other behaviors, set key indicators and indicator thresholds for risk monitoring, conduct online risk monitoring, update the details of risk account list in real time, and export them as needed for risk analysis and risk disposal: User behavior risk monitoring mainly monitors abnormal data such as new and active users [7]; Operational risk monitoring mainly monitors abnormal data such as the increase in the number of users participating in the activity, the distribution of prize rights and interests, and the surge in the number of rights and interests

written off; Equity risk monitoring mainly monitors abnormal data such as the number of account points obtained and the number of account points written off [8].

2.3 Closed-Loop Control of Operational Risks

According to the operational risk prevention and control scenario, carry out risk closed-loop management and control based on risk identification, risk early warning, risk disposal, risk interception and risk re-examination [9-10]. Risk identification: based on the knowledge map of operational data, identify the operational risks of relevant scenarios, generate a grey list, and submit risk alarms; Risk warning: process risk events and risk data, form risk warning information, and send it to operation risk control management personnel to realize risk warning; Risk disposal: the operation risk control management personnel analyze and identify the risk warning information, classify and manage the risk events, and manually identify the grey list to form a white list or a black list [11]; Risk interception: submit the blacklist to the State Grid Risk Control Center, and the State Grid Risk Control Center will freeze relevant accounts, suspend their participation in activities, and realize risk interception [12]; Risk review: analyze and summarize the causes, evolution process, identification and disposal of risks, find out the problems of risk management and control, improve the process of risk management and control, and improve the level of risk lean prevention and control [13].

2.4 Two-Level Operational Risk Prevention and Control Process

Based on the method proposed in this paper, a two-level operational risk prevention and control system is constructed as shown in Figure 1 [14]. The operation center is responsible for risk monitoring, risk identification and risk warning, formulating risk control strategies and measures for headquarters activities and distribution of points related to headquarters activities, ensuring the lowest risk of points in headquarters activities, and generating risk list, manual identification and risk re-evaluation [15-19]. The operation risk control center of the headquarters intercepts risks based on the risk list. The territorial company shall transfer the risk information and optimize the operation according to the risk interception situation of the headquarters; Make relevant customer service preparations and customer service work [20].
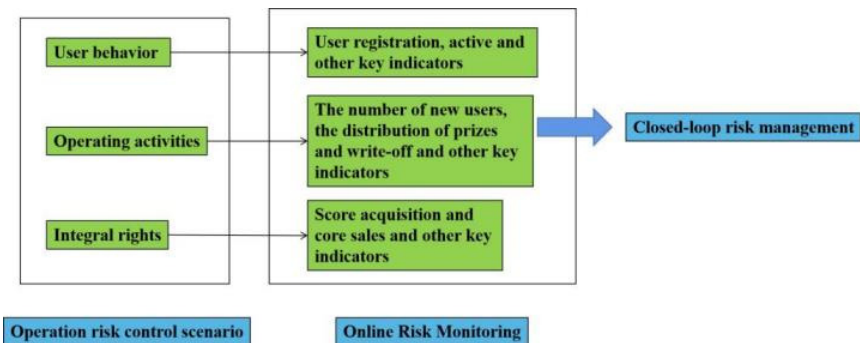

Figure 1 Operational risk prevention and control system based on operational risk control scenario

3 CONCLUSION

Aiming at the operational risks existing in the process of "Online State Grid" operational risks, this paper studies and constructs two operational risk prevention and control systems at provincial level and headquarters level. Based on the research results of this paper, the Electric Power Operation Risk Control Center promptly dealt with abnormal users' illegal points collection in activities such as "sharing courtesy" and "recommending courtesy", and frozen account points in time, effectively reducing operational risk losses. Study the establishment of provincial and headquarters operational risk prevention and control systems, give full play to the advantages of the two levels of risks, improve the efficiency of risk monitoring and risk disposal, and comprehensively enhance the active prevention capability of the operational risks of "State Grid Online".

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