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Article

Construction and Response: Procedural Defects and Validity Boundaries in Virtual Shareholder Meetings

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Abstract: From the dual perspectives of construction and response, this comprehensive study identifies and analyzes five major procedural defects prevalent in the current system of virtual shareholder meetings: irregularities in convening meetings, technical failures, identity authentication issues, irregularities in voting control, and a lack of authenticity in meeting records. As corporate governance increasingly transitions to digital platforms, understanding the legal implications of these procedural flaws becomes paramount. The core of this paper lies in clarifying their varying impacts on the legal validity of corporate resolutions. For instance, critical defects, such as a severe system outage or complete network failure, may result in a resolution being legally deemed non-existent due to the fundamental breakdown of the meeting process. Substantive defects, such as the unjust deprivation of fundamental shareholder voting rights, may render a resolution voidable under corporate law. In contrast, minor technical irregularities that do not substantively affect the final voting outcome will generally not invalidate the resolution, thereby preventing frivolous legal challenges. To address these multifaceted issues systematically, the paper proposes a robust and responsive governance framework tailored for the digital age. This innovative approach, encompassing both proactive preventive measures and comprehensive ex-post legal remedies, aims to strike an optimal balance between rigorously safeguarding shareholder rights and upholding the essential stability and predictability of corporate resolutions.

Keywords: virtual meetings; procedural defects; corporate resolutions; corporate governance; responsive governance

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1. Introduction

Entering the 21st century, the rapid advancement of digital technology has driven society into a highly informatized era. Technological innovation has given rise to new economic landscapes and profoundly transformed corporate management practices. With the growing maturity of technologies such as artificial intelligence and big data, corporate governance has increasingly embraced intelligent and data-driven approaches. The outbreak of the global pandemic in 2020 further accelerated the shift toward digital governance, as many companies turned to remote meetings and virtual voting mechanisms in response to restrictions on in-person activities. For example, Apple Inc. held its annual shareholder meeting online for the first time in 2021, highlighting the critical role of technology in modern corporate governance. At the same time, traditional shareholder meeting systems face multiple challenges [1]. These include low participation rates due to shareholder indifference, the high costs and time consumption associated with in-person meetings, and geographical barriers that limit investor involvement. All these issues undermine the effectiveness of traditional shareholder meetings in making decisions.

Under this background, virtual shareholder meetings have developed rapidly. By using digital platforms to overcome geographical and time limitations, they have effectively broadened shareholder participation and enhanced corporate governance transparency. It is evident that virtual shareholder meetings are no longer a temporary solution but a significant hallmark of modernized corporate governance [2]. In the post-pandemic era, they should not be viewed as provisional measures but as an inevitable trend toward advancing accessibility and inclusivity in corporate governance. From an international perspective, virtual shareholder meetings have become a widespread trend in the modernization of corporate governance. For example, as early as 2000, the U.S. Delaware General Corporation Law explicitly permitted fully virtual or hybrid shareholder meetings, establishing a flexible regulatory model centered on board resolutions while safeguarding shareholder interests as a fundamental principle. In the European Union, regulations mandatorily require member states to provide shareholders with remote participation and virtual voting channels, reflecting a unified legislative approach to ensuring shareholder engagement.

In China, although recent revisions to corporate legislation recognize in principle the validity of holding meetings via virtual means, and relevant documents from regulatory authorities provide preliminary industry guidance, a systematic implementation framework is still lacking in areas such as specific operational rules, technical standards, and compliance responsibilities. Compared with the well-established institutional practices abroad, Chinese legal provisions regarding virtual shareholder meetings remain overly general. There is a lack of concrete and operable guidance on key aspects such as shareholder identity verification and the legal consequences of virtual voting. This gap frequently leads to practical challenges and increases compliance risks for companies [2]. This situation reflects a deeper contradiction between the need for institutional stability and the dynamic nature of practical developments in the modernization of corporate governance. The normative development of virtual shareholder meetings in China urgently requires a legal system that is both forward-looking and adaptive. In this context, the dual perspectives of "constructivism" and "responsivism" offer important theoretical entry points. Constructivism advocates drawing on mature international experience to establish stable expectations through systematic and forward-looking rules. Responsivism, on the other hand, emphasizes that law should respond flexibly based on summarizing practical local issues and keeping pace with technological updates. This approach facilitates the institutional transformation of virtual shareholder meetings from mere formal compliance to substantive empowerment.

Based on the dual perspectives mentioned above, this paper will focus on identifying procedural shortcomings in virtual shareholder meetings and clarifying the boundaries of their validity [3]. This aims to develop an institutional framework for virtual shareholder meetings that balances security, adaptability, and regulatory soundness. This paper will help bridge the gap between technological application and institutional safeguards, while also providing theoretical support and practical pathways for advancing the modernization of corporate governance.

2. Research Methodology and Relevant Definitions

2.1. Research Methodology

This study employs a combined approach of normative analysis and empirical research to explore the procedural shortcomings and validity boundaries of virtual shareholder meetings through the dual perspectives of "constructivism" and "responsivism".

Firstly, the normative analysis systematically examines key provisions of corporate regulations, particularly focusing on specific articles in the latest revisions [4]. This approach aligns with the constructivist perspective, aiming to evaluate how statutory rules establish procedural frameworks and validity standards for virtual shareholder meetings. Secondly, the empirical research method utilizes case databases and analyzes typical cases to uncover procedural defects revealed in judicial practice regarding virtual shareholder meetings. This method also clarifies the judicial reasoning employed by courts when determining the validity of related actions, thereby testing the adaptability and limitations of written rules in practical scenarios.

By integrating the two methods described above, this paper aims to establish a dialogue between "construction" and "response," providing an analytical foundation for enhancing virtual shareholder meeting systems that combines theoretical depth with practical applicability [5].

2.2. Relevant Definitions

To ensure a clear and consistent discussion, this paper first defines several key concepts: "traditional shareholder meeting," "virtual shareholder meeting," "procedural defects," "constructivism," and "responsivism." Clarifying these terms is essential for analyzing procedural defects and validity boundaries from a dual perspective [2].

The traditional shareholder meeting refers to a corporate governance meeting held at a physical location where shareholders attend in person and interact directly [6]. Its core characteristics include the physical presence of participants and the immediacy of communication.

A virtual shareholder meeting is conducted through digital means, as permitted under updated corporate regulations. It may be fully virtual or hybrid, replacing physical presence with digital participation. Its defining feature is the use of technology to substitute physical space as the medium for convening meetings and making decisions [7].

Procedural defect refers to deficiencies in the processes of convening, notifying, holding, or voting during a shareholder meeting that violate legal provisions or internal governance rules. Such defects may impact the validity of resolutions and, under updated corporate regulations, can result in resolutions being deemed invalid or subject to annulment [8].

Constructivism views legal rules as being shaped through interactions among social actors, such as companies, shareholders, and courts. In the context of virtual shareholder meetings, this perspective emphasizes how specific norms evolve through judicial practices and commercial adaptations [9].

Responsivism advocates for legal systems to adapt flexibly to societal and technological changes, prioritizing substantive justice over strict formal compliance. In virtual shareholder meetings, this approach supports updating rules to address digital challenges, fostering more effective and equitable corporate decision-making [10].

3. The Legitimacy Construction Dilemma and Judicial Response in Virtual Shareholder Meeting

Recent legal provisions in China establish a framework for virtual shareholder meetings. However, effectively implementing these measures requires balancing two distinct approaches: one focused on certainty and the other on adaptability [11].

The approach emphasizing certainty prioritizes detailed procedural rules to minimize ambiguity and legal risks [12]. This includes standards for virtual notification, identity verification, and record-keeping. However, virtual meetings are inherently dynamic, and rigid rules cannot address every potential issue. Therefore, adaptability becomes crucial, allowing courts and companies to make case-by-case judgments when procedural challenges arise, while considering the actual impact on shareholder rights. Enhancing the virtual shareholder meeting system requires a balance between clear procedural guidelines and the flexibility to address unforeseen complexities.

3.1. Procedural Defects in Virtual Shareholder Meetings in China

In the context of current judicial practices in China, procedural irregularities in virtual shareholder meetings are primarily concentrated in five key areas [8].

3.1.1. Meeting Convening and Notice Delivery

Questions arise regarding the legality and effectiveness of meeting convening and notice delivery, reflecting the complexities inherent in the early stages of regulatory development. While recent legal provisions allow shareholder meetings to be conducted through virtual communication, the specific format of such meetings is determined by internal company rules. When legal frameworks provide only general authorization and delegate detailed arrangements to internal governance, the interpretation and practical implementation of these rules become critical areas of negotiation between companies and their shareholders. In this process, judicial bodies play an active role in shaping the application of these rules, balancing procedural adherence with the substantive protection of shareholder rights.

A notable example involves a case concerning a resolution by a major energy company. In this instance, internal governance documents did not explicitly address whether virtual meetings were permissible. The initial court ruling emphasized strict adherence to internal rules and invalidated the resolution. However, the appellate court reversed this decision, asserting that the absence of explicit prohibition allowed the company to adopt virtual meetings as a legitimate practice. This judgment established a practical approach favoring the principle that actions not explicitly prohibited may be permitted [6]. Nonetheless, it left unresolved whether unilateral decisions to hold virtual meetings for significant matters might limit shareholder participation and interaction, raising concerns about the balance between procedural flexibility and substantive rights.

Similarly, in the context of notice delivery, fulfilling the formal obligation of sending virtual notices without ensuring their receipt by shareholders often leads to questions about validity [6]. This highlights a judicial shift from prioritizing procedural compliance to emphasizing substantive delivery, underscoring the importance of safeguarding shareholders' access to information and meaningful participation in decision-making processes.

3.1.2. Technical Failures

There is a lack of clear standards for determining liability in cases of technical failures [10]. Although the new law permits the convening of virtual shareholder meetings, it does not establish specific technical requirements or rules for allocating responsibility, leaving courts with limited guidance when adjudicating issues arising from technical challenges. Faced with this novel practical situation, judicial practice cannot rely on existing traditional rules and must develop new criteria in response. In this context, the principle of assessing "substantive impact" has emerged. This principle is not explicitly stipulated in legislation but has formed as a consensus in judicial practice to fill the regulatory gap and evaluate the legal consequences of technical failures. Its core focus lies in whether a technical failure has substantially hindered shareholders' ability to participate in the meeting and exercise their rights.

However, this responsive principle remains underdeveloped, and its highly ambiguous standards pose challenges for judicial application. In one case, for example, the court applied this principle and concluded that a temporary disruption of the Zoom platform did not constitute a "substantive impact" because the company promptly remedied the situation by switching to WeChat video, thereby dismissing the claim [2, 4]. However, the judgment did not clarify the specific factors considered in reaching this conclusion. Key factors that should inform the determination of "substantive impact", such as the duration of the malfunction, the scope and proportion of affected shareholders, and whether the disruption occurred during critical discussion or voting stages, were not adequately explained. This omission significantly undermines the predictability of the principle in practice.

Furthermore, the determination of liability for more severe scenarios, such as a "complete platform failure rendering the meeting impossible", presents additional challenges. While such cases may constitute grounds for invalidating a resolution under legal principles and relevant provisions of the new corporate regulations, there is no clear boundary in practice between "partial disruption" and "complete failure". This dilemma highlights that current rules are inadequate to address the spectrum of technical risks ranging from minor interruptions to total meeting failure, and underscores the urgent need for more detailed standards or guidelines. Such refinements would provide clearer expectations for both companies and shareholders, thereby ensuring the stability of resolutions made in virtual shareholder meetings.

3.1.3. Identity Authentication

The boundaries of review obligations in identity authentication remain ambiguous. Defects in identity verification mechanisms may allow unauthorized individuals to impersonate shareholders and participate in meetings, directly undermining the legitimacy of corporate resolutions and the authenticity of declared intent. This dilemma necessitates a legal response to the challenges posed by digital identity verification and a reallocation of rights and obligations between companies and shareholders in virtual spaces [8].

In practice, the standards for the reasonable duty of review that a company must fulfill, such as the security level of verification methods and the prudence exercised in selecting platforms, remain unclear. Additionally, when a shareholder's negligence results in the leakage of verification credentials, the balance between their responsibility and the company's duty of review has become an urgent issue requiring judicial clarification. Even if a vote is cast using illegally obtained credentials, once the process complies with the company's established procedures and is accepted by the system, the vote is legally considered completed. However, this raises further questions regarding the validity of the resolution and the apportionment of the company's liability.

The complexity of such procedural defects lies in the judicial system's dual need to address technological risks and construct a fair liability framework. The significance of identity authentication issues lies in testing whether the legal system can transcend the traditional logic of physical presence and, through clear rulemaking, definitively answer the fundamental question of shareholder identity in virtual meetings. This would enable virtual shareholder meetings to progress from formal compliance to substantive reliability.

3.1.4. Voting Procedure

Voting procedures in virtual shareholder meetings exhibit insufficient rights protection and elevated governance risks. Although virtual voting environments improve operational efficiency, they may also generate new forms of procedural constraint and instability. The voting process in virtual shareholder meetings further reveals the power asymmetries and procedural disorder that technology may introduce. Accordingly, the law should not merely respond to the formal legality of virtual formats, but should proactively develop new rules to regulate digital power and safeguard procedural fairness.

First, technology may strengthen the control exercised by the meeting chair. The host may rely on technical functions such as muting or disconnecting participants, thereby materially limiting shareholders' opportunities to raise questions. Empirical analysis of 125 listed companies covering 250 meetings has shown that, compared with in-person meetings, fully virtual general meetings were on average 17% shorter, declining from 39.4 to 32.7 minutes; the time allocated to shareholder question-and-answer sessions decreased by 16%, from 10.7 to 9 minutes; and the average response time per question fell by 23%, from 2.6 to 2 minutes. More importantly, further analysis of shareholder question data indicates that when voting outcomes diverged from management recommendations, companies were more likely to leave submitted shareholder questions unanswered and to expressly limit the range of questions eligible for response. These findings suggest that the convenience and efficiency of virtual meetings are, in practice, often accompanied by a contraction of shareholder expression. The central legal challenge therefore lies in distinguishing reasonable meeting management from improper restrictions on rights, as this distinction determines whether virtual meetings function as effective governance platforms or as instruments of excessive control. The "Huangting International" case illustrates a company's improper use of technical means in the conduct of a shareholders' meeting. In that incident, in order to secure the approval of a financing proposal, the company shut down the virtual voting system while anticipating that some shareholders might cast opposing votes through virtual channels, and it permitted only on-site voting. The seriousness of this conduct lies in the fact that it was not a simple technical failure or procedural omission, but rather a deliberate use of technical rules to exclude dissenting views and deprive certain shareholders of their basic voting rights, thereby substantially undermining the fairness of corporate governance. It has also been observed that in similar cases, where listed companies take advantage of regulatory gaps to conduct virtual shareholder meetings in ways that impair the lawful rights and interests of some shareholders, corresponding legal accountability has often been insufficient, reflecting delays in administrative regulatory oversight.

Moreover, the convenience of virtual platforms may weaken meeting stability. Shareholders' ability to exit with a single click may cause the voting rights represented at the meeting to fall below the statutory threshold, thereby affecting the validity of resolutions. The root of this issue is that traditional quorum rules were designed on the premise of the relative stability of physical meetings and therefore cannot be directly transplanted to the virtual environment. This makes it necessary to develop new legal standards for determining whether dynamically changing attendance can still satisfy statutory quorum requirements.

In addition, errors arising from duplicate voting reveal deficiencies in both institutional rules and technical safeguards. Although the Rules for the General Meetings of Listed Companies provide that repeated votes attached to the same voting right are to be counted on the basis of the first submission, this approach is merely a simplified administrative arrangement and does not establish a legal principle that adequately reflects the shareholder's authentic final intention.

3.1.5. Minutes and Data Authenticity

The absence of robust mechanisms to ensure the authenticity of meeting minutes and data presents significant challenges in the digital era. Issues related to the storage and management of meeting records in virtual environments reveal the inadequacy of traditional legal frameworks in addressing modern technological realities. Legal systems must not only formally recognize the shift toward digitization but also establish concrete measures to guarantee the integrity and reliability of data. Without such measures, the foundation for protecting shareholder rights and validating resolutions risks being compromised.

The requirement for meeting minutes under relevant legal provisions encounters substantial obstacles in virtual contexts. For example, discrepancies in online voting results have highlighted vulnerabilities in digital platforms, where technical flaws can lead to undercounting or misrepresentation of shareholder votes. In such situations, shareholders often face significant challenges in proving data manipulation, while responsible parties may evade accountability by attributing errors to system malfunctions. These incidents underscore the need for mandatory technical standards and liability frameworks to ensure the credibility and evidentiary reliability of virtual voting outcomes.

Furthermore, incomplete virtual meeting records, insecure storage practices, or restricted access to records can undermine the validity of resolutions. Current legal provisions only broadly require the preservation of records without specifying technical standards or accountability measures to ensure data security and traceability [3, 8]. Establishing a reliable system for virtual record-keeping and verification is essential to transitioning virtual shareholder meetings from mere procedural compliance to substantive dependability.

3.2. Summary

Although recent legal reforms in China recognize the validity of virtual shareholder meetings, they do not provide detailed guidance for addressing procedural defects across five identified categories. This lack of clarity creates challenges for judicial practice, as there are no established standards for review. To address this gap, it is essential to develop a comprehensive system tailored to the unique characteristics of virtual shareholder meetings [6]. Such a system should define the impact of various procedural defects on the validity of resolutions, establish clear criteria for judicial evaluation, and ensure a balance between efficiency and fairness.

4. Analysis of the Impact of Procedural Defects on the Validity of Resolutions

With the implementation of updated corporate regulations in China, the framework governing the validity of corporate resolutions has undergone significant development, showcasing a structured approach at the legislative level [7]. Building upon the foundational principles of procedural fairness established by earlier regulations, the updated framework introduces a more systematic set of rules for judicial evaluation by specifying conditions under which resolutions are considered invalid and refining criteria for contestability. However, challenges have emerged regarding the adaptability of these regulations to technical procedural issues associated with virtual shareholder meetings. This analysis emphasizes that determining whether the general principles outlined in the updated regulations can be effectively applied to cases involving novel procedural issues, such as technical disruptions or potential imbalances in control, depends on evaluating whether these issues have materially affected shareholder rights and the resolution's outcome. Using real-world examples, this paper applies the updated corporate regulations as the primary basis and employs "material impact" as the central criterion to systematically examine the influence of various procedural issues on the validity of resolutions.

4.1. Defects in Meeting Convening and Notice Delivery

Article 24 of the new Chinese corporate governance regulations stipulates that shareholders' meetings, board meetings, and supervisory board meetings may be convened, and votes may be cast using virtual means of communication, unless otherwise provided by the company's internal rules [9]. This provision establishes the fundamental legal threshold for the validity of virtual shareholders' meetings, reflecting the legislature's proactive response to the corporate governance needs of the digital era.

Before the implementation of the new corporate governance regulations in China, judicial practice exhibited divergence on this issue. For example, in a notable case involving a new energy company, the court of first instance held that the absence of explicit provisions in the company's internal rules constituted a procedural defect, warranting the voidability of the resolution. In contrast, the appellate court adopted a more accommodating stance, recognizing the validity of the virtual meeting format. This divergence highlighted the uncertainty in judicial adjudication during a period of regulatory ambiguity. After the enactment of the new regulations, while Article 24 has clarified the legal status of virtual meetings, new practical issues have emerged. Specifically, when a company's internal rules only contain general provisions and fail to specify criteria for meeting format selection, the scope of significant matters, or technical safeguards, does this constitute a procedural defect? A "substantive-impact" assessment is required. If a shareholder raises a reasonable objection to the virtual format prior to the meeting, particularly when arguing that it hinders inquiry and discussion during the deliberation of significant matters, such a procedural defect has substantively impaired the shareholder's right to participate. In such cases, the resolution should be voidable. In contrast, if the defect does not substantively affect shareholders' participation rights, it may fall under the category of a "minor defect that does not materially affect the resolution," and the validity of the resolution may be upheld. Furthermore, if all shareholders, being aware of the procedural defect, participate in the meeting without objection and complete all agenda items, this situation may be viewed through the "cure" doctrine. According to this concept, a company may remedy a procedural defect through an act of self-regulation. The unanimous conduct of the shareholders can be construed as implied acceptance of the meeting format, thereby curing the initial procedural defect and allowing the resolution's validity to be maintained.

In the context of virtual meetings, the legal determination of procedural defects in the notice phase must be considered within the unique framework of digital governance. This essentially reflects a process of "reconstruction" of shareholder rights in digital scenarios. Whereas the traditional right to attend meetings manifested as the right of entry into a physical space, the right to attend virtual meetings is reconstructed as the "right to effectively receive information" and the "right to unimpeded technical access." From a constructive perspective, the completeness of the notice content forms the foundation for the realization of these rights. If a meeting notice omits core elements such as the access link, login credentials, identity verification procedure, or the intended recipients, it is equivalent to depriving shareholders of their entry credentials in the digital space, objectively eliminating their possibility to participate. Such defects completely obstruct the realization of shareholder rights [9]. According to Article 26 of the new Chinese corporate governance regulations, these defects should be directly recognized as having a substantive impact on the resolution and should not be exempted under the rule for minor defects. This view aligns with judicial stances where omissions in notification procedures were deemed procedural defects warranting voidability of the resolution.

Furthermore, regarding the delivery of notice, merely completing the formal act of "sending" without achieving the substantive state of "receipt" indicates that the shareholder's digital right to participate has not been fully constructed. Judicial assessment of such defects can draw upon the theory of discretionary dismissal for "minor procedural defects," in conjunction with Article 26 of the new Chinese corporate governance regulations. Judicial review of procedural defects should follow a logical sequence of "first assessing minor defects, then evaluating substantive impact." Specifically, if the company has fulfilled its reasonable duty to notify, for instance, by attempting delivery through multiple channels, and can demonstrate that the voting rights of the non-participating shareholders were insufficient to alter the outcome of the resolution, then the defect, in terms of consequence, did not materially affect the resolution. The court may accordingly classify it as a "minor procedural defect" and exercise discretion to dismiss the request for voidability. This approach avoids the bias of a purely outcome-determinative analysis, balancing the protection of shareholder rights with the maintenance of corporate decision-making efficiency and stability.

4.2. Defects in Technical Failures

Article 24 of the updated regulations governing corporate operations permits the convening of meetings via virtual communication methods. While granting companies flexibility, this provision also implies a corresponding legal obligation to provide adequate technical safeguards and protect shareholder rights. When technical failures exclude some shareholders from participation, such incidents may constitute an infringement of the shareholders' right to attend and trigger concerns over the validity of the resulting resolutions. Regarding situations where technical failures cause either a "partial interruption" or a "complete inability" to hold a meeting, the updated regulations provide a basis for extending applicable rules to address these scenarios.

In the most severe scenario where a "platform completely fails, rendering the meeting entirely unfeasible," Article 27 of the updated regulations, which addresses circumstances under which a resolution is deemed not established, offers a direct legal basis. This provision lists "failure to convene a meeting" as one such circumstance. In the context of virtual meetings, if a platform's complete malfunction results in a legally significant meeting never having been effectively convened in the first place, it is substantively equivalent to "failure to convene a meeting." Accordingly, deeming the relevant resolution not established represents an appropriate extension of both the literal meaning and legislative intent of this legal provision. Research on identifying procedural defects in corporate resolutions has proposed the concept of a "Rational Deliberation Environment." This theory posits that the core function of corporate resolution procedures is to construct a rational deliberation environment for participants, ensuring the free formation and adequate exchange of viewpoints and reasons. Whether a procedural defect is "minor" fundamentally depends on whether it substantially damages this environment. Guided by this theory, the "substantive impact" assessment for a "partial interruption" precisely examines whether the technical failure deprived shareholders of the opportunity to hear others' views and present their own reasons within the digital meeting space. If an interruption occurs during a critical questioning or discussion segment, even if short, it may constitute a substantive damage to the rational deliberation environment by hindering the free exchange of viewpoints and reasons, warranting the voiding of the resolution.

Additionally, the determination of the validity of resolutions affected by such defects may also be made by reference to international corporate governance practices. For instance, if a company's internal rules stipulate the use of virtual means for shareholders to participate in meetings or exercise voting rights, and the company intentionally or through gross negligence causes technical failures in virtual communication that infringe upon these shareholder rights, resolutions adopted in such virtual shareholder meetings may be voidable. In other words, if the communication technical failure did not result from the company's intentional act or gross negligence, and the company has taken reasonable remedial measures, such a defect may be recognized as a minor procedural defect that does not materially affect the resolution [1].

4.3. Defects in Identity Authentication

Defects in the identity verification process directly threaten the legal foundation of resolution formation. The identity authentication defects discussed here differ from technical failures, as they do not refer to an inability to perform authentication due to technical issues, but rather to excessively weak verification mechanisms that allow unauthorized individuals to impersonate shareholders and vote. Such defects are comparable to forging shareholder signatures in offline meetings, as they essentially create the false appearance of shareholder consent to resolution matters. This interferes with corporate decision-making, potentially causing a resolution that lacks the legally required quorum to be deemed established, or a resolution that lacks sufficient votes to be passed [3]. This not only infringes upon the personal rights of the impersonated shareholder but also distorts the authenticity of the decision-making process. From a constructive perspective, while traditional meeting norms can be extended, the law needs to establish new normative standards for digital identity authentication.

Prior to the enactment of updated regulations, some judicial practices regarding impersonation in traditional shareholder meetings tended to rule resolutions invalid. For example, in one case, the court invalidated the shareholder meeting resolution because the signature on the resolution was found to be forged, and the shareholder was unaware of the resolution's content. This adjudicative approach reflects courts relying on reasoning that equates impersonation with inauthenticity of intention, directly ruling resolutions invalid due to insufficient rules under previous legal frameworks. However, considering the procedural nature of corporate resolutions, the essence of impersonation should be characterized as a procedural defect, not a substantive defect warranting automatic invalidity. Therefore, it is suggested that for virtual shareholder meetings, if the voting rights of the impersonated shareholder are sufficient to alter the outcome of the resolution, such a defect constitutes a substantive impact on the resolution, and the resolution should be voidable. Conversely, if the verification defect only involves a shareholder whose vote cannot change the outcome, it may be deemed minor, and the validity of the resolution remains unchanged.

Additionally, it is suggested that in determining liability for identity verification defects, judicial practice may refer to the principle of fault-based attribution [1, 4]. If a verification failure results from a shareholder's own negligence, such as the leakage of their authentication credentials, the consequences should be borne by the shareholder themselves. However, if the failure is attributable to the company, for instance, due to security vulnerabilities in the system adopted by the company, an ineffective identity verification mechanism, or a failure to provide reliable authentication guidance, then the company should be held responsible. In one illustrative case, a court voided a resolution passed in a meeting on the grounds that the company used a defective virtual voting system which failed to properly verify shareholder identities. This demonstrates that providing a reliable identity verification mechanism constitutes a legal obligation of the company. Therefore, affected shareholders may rely on such failures to argue that the proceedings were defective and seek to void the resolution.

4.4. Defects in Voting Procedure

Defects in voting procedures can include improper control of meetings, alterations to the legal quorum due to shareholder actions, and instances of duplicate voting. The legality and compliance of meeting procedures and voting methods are critical in determining the validity of resolutions. In virtual shareholder meetings, improper control of the meeting process represents a significant deviation from established procedures. For example, in a case involving a company compelled to open a virtual voting channel under regulatory and public pressure, it is evident that such actions could lead to the invalidation of resolutions if brought before a court. The role of the meeting chairperson is to ensure the orderly conduct of the meeting, maintain discipline, and facilitate the progression of agenda items in accordance with established rules. This ensures that shareholders can exercise their rights effectively. However, if the chairperson uses technical means to unjustly limit shareholder participation, filter questions selectively, or diminish the quality of interaction, it infringes upon shareholders' rights to information and expression. Such actions undermine the legitimacy of voting rights and constitute a procedural defect with substantive consequences, potentially rendering resolutions voidable.

In the design of virtual shareholder meetings, the mechanisms governing shareholders' ability to enter and exit the virtual meeting room directly influence the legal validity of resolutions. For a resolution to be valid, the voting rights represented at the meeting must meet the required proportion. In one legal case, a resolution was deemed invalid because the voting rights of the shareholders present did not meet the stipulated requirements. While the digital context introduces new challenges, the fundamental principle remains unchanged. The concept of "virtual presence" in such meetings introduces risks of instability. If shareholders are allowed to leave the meeting without restrictions, it can result in a dynamic reduction of the voting base. When this reduction causes the voting rights to fall below the required threshold, the meeting loses its legitimacy to adopt resolutions. This issue, arising from technical flexibility, should be legally addressed as a circumstance that prevents the establishment of a resolution, rather than as a voidable matter. Such an approach is essential to preserve the integrity of corporate resolutions.

Regarding duplicate voting, regulations stipulate that the same voting right may only be exercised through one method, such as on-site, online, or another approved method. If duplicate voting occurs, the first vote cast is typically considered valid [8]. However, the inherent variability and instability of internet-based platforms can lead to inaccuracies in reflecting shareholder intent. To address this, companies can establish clear voting rules in advance, such as specifying whether the first or last vote will be considered valid. Consistent application of such rules creates a legitimate procedural framework and does not compromise the validity of resolutions. Additionally, if a shareholder's intent is expressed multiple times, the first expression received should generally prevail unless a clear declaration to revoke the earlier intent is made. This approach ensures clarity and fairness in the voting process while maintaining the procedural integrity of virtual shareholder meetings.

4.5. Defects in Minutes and Data Authenticity

The obligation to prepare meeting minutes, as stipulated in relevant legal provisions, is undergoing significant development within the digital context. In the digital environment, this requirement imposes stricter standards: meeting minutes are no longer limited to traditional written summaries [3]. Their scope should be expanded to include a range of virtual data capable of fully and authentically reflecting the entire meeting process. This includes unalterable video recordings of the meeting, data logs documenting voting times and sources with precision, and all dialogue and exchanges from the chat area. Together, these virtual carriers form a comprehensive record of meeting minutes in the digital age, serving as core evidence for verifying the legality of resolution procedures.

The digitization of record-keeping has introduced new risks related to defects, primarily stemming from the absence of mechanisms to ensure data authenticity. In one notable incident, a shareholder authorized a securities firm to cast opposing votes for a significant number of shares. However, the number of opposing votes disclosed in the company's announcement was substantially lower. The discrepancy was ultimately attributed to an issue with upgraded software provided by a third-party supplier. Although this incident did not result in a judicial ruling, the risks it highlighted carry important cautionary implications. From a legal perspective, if evidence demonstrates that such data inconsistencies substantively affected the voting outcome, causing the shareholding base supporting the resolution to fall below the statutory threshold, this would not merely constitute a procedural defect. Instead, it would undermine the foundation of the resolution's validity. In such cases, the resolution should be deemed not established in accordance with applicable legal provisions.

For situations involving incomplete records or insecure storage that do not reach the level of fundamental compromise, a more nuanced judicial review is required. When shareholders are unable to exercise their oversight rights due to missing virtual records or restricted access, the court must assess the substantive impact of the defect. The severity of the defect depends on whether it has a significant effect on shareholder rights and the resolution's outcome. If the company cannot demonstrate that it has implemented reliable technical measures, such as third-party depository services or blockchain technology, to ensure the integrity and immutability of critical virtual records, including voting logs and chat records, and this failure prevents shareholders from verifying the authenticity of the meeting, the defect should be recognized as a major procedural issue sufficient to render the resolution voidable. Conversely, if the company can prove that it has fulfilled its technical safeguard obligations and the defect resulted from an unforeseeable incident beyond its control, it may be classified as a minor defect.

5. Path for Institutional Development of Virtual Shareholder Meetings under Responsive Governance

The widespread application of information technology has facilitated the organization of shareholder meetings while simultaneously introducing new challenges. For instance, technical failures may affect meeting procedures, and the virtual format could potentially heighten inequalities among shareholders. To address these challenges, this chapter suggests that the rules for virtual shareholder meetings should be systematically developed based on the principle of "responsive governance." Specifically, this involves two approaches. First, preventive measures should be implemented in advance. This includes refining internal corporate policies, establishing technical standards, and introducing third-party oversight to mitigate potential issues. Second, a framework for post-event remedies should be established. A three-tier review system can be adopted to address procedural defects based on their severity, thereby avoiding the unnecessary invalidation of entire resolutions. The ultimate goal is to ensure that virtual shareholder meetings can be conducted both efficiently and conveniently, while also fully safeguarding fairness and enabling robust operations [7].

5.1. Prevention in Advance

First, the company should refine their internal governance framework and operational rules. These rules should extend beyond general authorizations and aim to balance the authority of the board of directors with the principle of shareholder equality. The framework should clearly define the scope of application for virtual meetings and specify detailed measures to ensure equitable rights for both online and offline shareholders. For example, virtual notices should meet standards for effective delivery and confirmation, and mechanisms should be in place to guarantee equal opportunities for questioning and deliberation during virtual participation. Additionally, contingency plans and protocols for addressing technical failures should be established in advance. Special support measures should also be developed for shareholders who face challenges with internet use. This approach aims to address procedural issues and disparities caused by ambiguous rules and technological barriers at their root.

Second, the company should establish clear standards for platform selection and security. A robust technological foundation is essential for virtual shareholder meetings. The selected platform should support video conferencing and include core functionalities such as shareholder identity verification, real-time interaction, secure voting, and comprehensive audio-video recording. Selection criteria should prioritize system stability, communication confidentiality, data integrity, and end-to-end traceability. The primary objective is to ensure timeliness and fairness for both online and offline participants, thereby mitigating risks related to technical failures and ensuring the authenticity of meeting records.

Third, the responsibilities of third-party supervision mechanisms should be clearly defined. Independent third parties, such as legal professionals, should be introduced to oversee the entire process of virtual shareholder meetings [2]. Their duties should include supervising the legality of meeting procedures, intervening in cases of rights violations, disclosing actions that infringe upon shareholder rights, and reporting relevant issues to regulatory authorities. By specifying their responsibilities and enhancing accountability, an external safeguard can be established to prevent data inconsistencies and ensure fair exercise of rights, thereby improving the credibility of meeting procedures and the reliability of resolutions.

5.2. Ex-Post Remedies

From the perspective of ex-post remedies, to effectively address new types of procedural defects arising from technological applications in virtual shareholder meetings, it is essential to move away from a dichotomous, "one-size-fits-all" adjudication model. Instead, a structured and precisely responsive "three-tier review framework" should be established. Centered on the core criteria of the severity of the defect and its substantive impact on shareholder rights, this framework categorizes the validity assessment of virtual shareholder meeting resolutions into three gradients: "not established," "subject to voidable," and "valid."

First, regarding "serious defects" that undermine the very foundation of a shareholder meeting resolution, they should directly result in the resolution being deemed not established. For instance, situations where a platform's complete failure prevents the effective convening of the meeting, or where the core virtual records are materially altered, leading to a fundamentally distorted voting outcome, lack the most basic premise for the formation of a unified decision. In such cases, relevant legal provisions should apply, declaring the resolution not established from the outset and incapable of being remedied.

Second, regarding "defects with substantive impact," while they do not negate the existence of the resolution, they materially impair shareholders' rights to participate or vote. Such defects constitute legal grounds for voidability of the resolution and should be addressed under appropriate legal frameworks. At this level, a "cure mechanism during litigation" can be introduced, granting the company an opportunity to remedy the defect by adopting a new resolution or obtaining shareholder ratification. If the cure is successful, the validity of the resolution is upheld; if the defect cannot be cured, the resolution should be voidable.

Finally, concerning "minor defects," those technical issues that are manifestly trivial and have not materially affected the resolution, the judiciary should adopt a restrained approach. In determining what constitutes a "minor defect," a comprehensive assessment should be made, considering factors such as the nature and severity of the defect, the effectiveness of the company's remedial measures, and whether shareholders' core rights were substantially safeguarded [11]. If the criteria are met, the rule of discretionary dismissal should apply to maintain the validity of the resolution, thereby avoiding undue interference that could undermine corporate governance efficiency.

The superiority of this "three-tier review framework" lies in its profound responsiveness and precision. It moves beyond rigid, black-or-white legal thinking. By incorporating mechanisms for curing defects and rules for discretionary dismissal, it creates a flexible space between the legally defined outcomes of "not established" and "subject to voidable" that encourages corporate self-correction and respects commercial practice. Ultimately, this framework achieves a more judicious balance among upholding the stability of resolutions, protecting shareholder rights, and promoting corporate governance efficiency [11].

6. Conclusion

Viewed through the dual perspectives of constructivism and responsivism, procedural defects and the limits of validity in virtual shareholder meetings reflect the need to maintain a dynamic balance between technological innovation and institutional safeguards. At its core, this requires reconciling the competing demands of efficiency and convenience with accountability and substantive rights. The continued refinement of the virtual shareholder meeting system should therefore combine forward-looking rule design with flexible judicial responses. This may be achieved by clarifying technical standards, specifying operational procedures, strengthening supervisory mechanisms, and consistently applying the principle of substantive impact in judicial practice. The ultimate objective is to achieve an organic unity among shareholder-rights protection, the validity of resolutions, and the efficiency of corporate governance, thereby supporting the stable digital transformation of corporate governance systems.

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