

June 15, 2021
Mizuho Financial Group, Inc.
Mizuho Bank, Ltd.

Identifying the cause of IT system failures at Mizuho Bank and preventing further incidents

We sincerely apologize to our customers and other affected parties for significant disruptions caused by the series of IT system failures which occurred at Mizuho Bank (hereinafter, BK).

Mizuho Financial Group (hereinafter, FG) and BK conducted their own review of the series of system failures that occurred at BK alongside the investigation implemented by the System Failure Special Investigative Committee established on March 17.

Today we report our (FG and BK) overview of efforts to identify the cause of system failures and prevent further incidents, taking into account our review of measures for preventing further incidents following the report released April 5, 2021 that provided an update on the status of such measures and the assessment and recommendations of the System Failure Special Investigative Committee disclosed on June 15. This overview was resolved on following review by the System Failure Response Evaluation Committee, which is comprised of only FG outside directors.

FG and BK are continually working on initiatives to prevent further incidents and will provide additional timely updates whenever relevant information is available.

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1. Introduction

The Mizuho group has experienced three major system failures up to now – in April 2002, March 2011, and the latest situation – with significant disruptions affecting customers and society more broadly. We are keenly aware of the need to take steps overall as an organization to fundamentally prevent further incidents so that this type of situation does not happen again.

To ensure that our customers can reliably engage in transactions with BK, FG and BK will pursue efforts as an overall organization to strengthen multilayer responsive capabilities in the event of system failures by bolstering initiatives concerning IT systems and response to customers response & crisis management and integrating these activities dynamically and cross-divisionally with the aim of preventing further incidents. These actions will be based on through reflection on past system failure incidents and of recommendations from the System Failure Special Investigative Committee to ensure that the issues which occurred in this recent incident are addressed in a fundamental and sustainable way.

2. Summary of incidents

The latest situation involved four system failures over a short period of time, specifically occurring on February 28, March 3, March 7, and March 12 of this year. The investigative report issued by the System Failure Special Investigative Committee on June 15 describes the facts of these incidents.

Below we present a summary of the incidents as understood by FG and BK in light of the content of the investigative report (please refer to the investigative report for incident details).

(1) February 28

Due to implementation of e-account bulk change processing for the Mizuho e-account service on February 28, 2021, the final Sunday of the month, the file

usage rate at 9:50am on the same day exceeded 100%. This disabled all update processing involving access to the time deposits system and led to retention of bankbooks and cards in ATMs that access this system and prevented transactions involving time deposits in Mizuho Direct, an online banking service. The impact of these errors widened and led to closures of ATMs at 10:00am and subsequently Mizuho Direct processing sections. Such subsequent closures triggered many errors in ATM transactions and other activities besides time deposits and numerous instances of ATMs failing to return inserted bankbooks and cards.

Roughly 6,400 error messages occurred between 9:50am and 10:05am on the same day, and BK and Mizuho Research & Technologies (hereinafter, RT; Mizuho Information & Research Institute at the time of the incident) started looking into the cause of the failure and implemented actions to restore operations. However, RT did not detect the suspension of the ATM processing section until 5:10pm on the same day, which was more than seven hours after the error detection, and it took until 6:39pm on the same day to complete the restart of the ATM processing section again.

This system failure affected customers through (1) suspension of ATM operations (as many as 4,318 machines), (2) retention of inserted bankbooks and cards at ATMs (5,244 cases), and (3) disabling of some ATM and Mizuho Direct transactions.

Regarding the retention of bankbooks and cards, despite the recovery and return of some bankbooks and cards via remote operation from the ATM Center that monitors ATMs and via the direct involvement of security companies and branch employees, it was difficult to respond sufficiently because of the large number of cases of trapped bankbooks/cards, and since February 28 was a Sunday too, numerous customers were unable to retrieve their bankbooks and cards from ATMs for a lengthy amount of time. Many customers were stuck waiting for a long period in front of ATMs because they were unable to leave these locations without any information until making contact with BK. Furthermore, ATMs returned to a normal external appearance after the recovery of a retained bankbook or card, and this resulted in many cases of the same ATM retaining the bankbooks and cards of other customers.

It was only possible to return retained bankbooks and cards on the same day in 1,244 cases, and returns for an additional 5,152 cases took until March 7, a week after the date of the system failure, and returns for all cases required until April 22.

(2) March 3

On March 3, 2021, a network card in network equipment at a BK data center failed, and this problem destabilized communications for three minutes until the switch to a network card in a different system. Since the switch to the other system occurred automatically, normal communications were restored three minutes after the incident. Impacts during this period were (1) retention of inserted bankbooks and cards at ATMs (29 cases) and (2) partial failure in Numbers Lottery ticket purchase transactions via ATM or Mizuho Direct service (7 cases).

(3) March 7

On March 7, 2021, when BK released a program related to the delinquent interest collection function for consumer loan products, errors occurred in centralized entry processing related to consolidated account time deposits at 6:08am on the same day because of a mistake involving the omission of an initialization process that was necessary in said program's design.

BK and RT released a revised program that addressed the omitted initialization process and restored time deposit transactions at 1:42pm on the same day.

Customers who experienced failed time deposit transactions via ATMs or Mizuho Direct service received notification of the system failure and failed transaction and an explanation of the circumstances. Some time deposit services at ATM were temporarily suspended with the aim of preventing ATMs from retaining bankbooks and cards.

(4) March 12

At 11:39pm on March 11, (1) failure of communications control equipment within

storage equipment in MINORI's common platform shut off communication between the storage equipment and server and thereby halted business systems running on the affected server. At the same time, (2) suspension of "integrated file handling" (business system handling transfers between platforms of files needed for batch entry processing at operations centers) delayed batch entry processing at operations centers. This resulted in (3) mainly delays in foreign currency transfer processing.

Despite immediate restoration action for storage equipment after error detection, the connection did not recover after switching the communication control equipment and it took six hours and 41 minutes to restore the entire server and six hours and 59 minutes to restore integrated file handling.

While batch entry processing at operations centers steadily resumed after restoration of integrated file handling, sufficient recovery procedures were not conducted for the foreign exchange system and processing was not completed by the specified deadline.

Due to this incident, 263 transfers to other domestic banks did not meet the deadline for March 12 and 761 foreign currency transfers did not complete deposit notification processing during the same day. Regarding transfers, negotiations took place with the receiving banks, including the deposit date, premised on BK handling the back-value costs. For transfer recipients, BK contacted receiving parties to confirm their view of the deposit date and confirmed completion of all deposits as of March 31.

3. FG and BK initiatives thus far based on past system failures

Regarding past system failures, and particularly cases in 2002 and 2011, various system issues occurred in relation to system functionality and system risk management operations. From the perspective of fundamentally improving these matters, one of the initiatives detailed in the Mizuho group's "Initiatives to restore trust" disclosed in May 2011 was the pursuit of a fully integrated system and completion of the migration to the new core banking system (MINORI) in July 2019.

MINORI adopted a design based on service-oriented architecture (SOA) ^(Note 1) that isolates affected areas in the case of system failure and does not halt the entire core banking system.

Furthermore, from the perspective of responding to customers and crisis management, past system failure cases involved difficulties in achieving a rapid initial response and suitable response to customers as an organization due to insufficiencies in various management frameworks and rule definition, including contingency plans, crisis management operations, and information exchange operations. Learning from these experiences, we built emergency response and crisis response frameworks, including clarification of the initial reporting method and role division, the addition of BCP ^(Note 2) and SCP ^(Note 3) formats, and a framework to manage important cross-divisional systems and administrative projects.

However, as indicated in 2., considering the occurrence of four system failures in a short period of time, we realize the need to identify the root causes in the group's organization, based on a thorough review of the events that occurred this time along with the background and causes of past situations and measures taken to address them, and implement fundamental and sustainable measures to prevent further incidents.

(Note 1) Service-oriented architecture

This is a type of IT system construction method. It defines system functions as business units recognized by users and converts system processing to parts. The method improves system development efficiency and avoids complicating the system structure by combining and reusing these elements.

(Note 2) Business contingency plan

This is a plan to ensure business continuity that specifies work impact, related systems, initial response, provisional response, full-fledged recovery response, and other aspects for important work processes that need to continue in an emergency situation.

(Note 3) System contingency plan

This is a plan that specifies initial response, provisional response, full-fledged recovery response, and other aspects for important work processes that need to continue in an emergency situation.

4. Cause analysis

The System Failure Special Investigative Committee conducted a detailed

cause analysis of the various events and broadly reviewed not only system failure cases from 2002 and 2011 but also other system failures to investigate past incidents and identified common points with the latest occurrences. Refer to the explanations in the Investigative Report for details.

The Investigative Report cites three points as causes of the latest series of system failures – (1) Deficient organizational capability to respond to crisis situations, (2) Deficient IT system management, and (3) Deficient focus on the customer's perspective. Additionally, it stipulates an underlying cause of (4) Underlying conditions or corporate culture that prevents straightforward improvement of these issues.

We think these points offer important guidelines that the Mizuho group should reflect into its efforts to prevent further incidents. While the Investigative Report covers them in further detail, we present some of the report's content below.

(1) Deficient organizational capability to respond to crisis situations

When an unexpected crisis event, in this case a system failure, occurred efforts to collaborate in order to suitably understand information from other divisions were insufficient (horizontal communication) and the framework to respond to events by centralizing information did not work. Also, communication of information with executives was inadequate with delays in reporting to executives and lateness in setting up the Emergency Response Project Team (vertical communication). These outcomes clearly exposed a weakness in our crisis response capabilities as an organization.

(2) Deficient IT system management

Overall, our IT governance and IT management did not function properly and our IT system control capabilities were deficient. In the February 28 system failure this was exemplified by inadequate risk awareness of the potential to exceed capacity in the Index File of the deleted information management table and unpreparedness and inadequacy of information gathering measures within the operations management and system failure recovery response frameworks. For the March 7 system failure, examples include insufficient testing related to consumer loan cases and unpreparedness within management operations at the outsourcing partner. For the March 12 system failure, issues include inadequate

training for dealing with recovery when failure occurs and issues in management operations at the outsourcing partner and information sharing operations related to the response to customers.

Some reasons for these issues are (1) inadequate consideration of the reassignment of IT personnel after the migration to MINORI, and (2) inadequate preparedness for a crisis on holidays and outside of business hours that should be covered more extensively in risk management. Another underlying issue is (3) low sensitivity to system risk among executives and others despite repeated system failures.

(3) Deficient focus on the customer's perspective

As seen in the February 28 failure that caused significant inconvenience for customers, we lacked (1) awareness of issues regarding the ATM bankbook and card capturing mechanisms and resulting impact and (2) a stance of doing whatever is possible to address customer interests in responding to system failures. We also cannot ignore the insufficient awareness of customers using ATMs and the Mizuho Direct service as “invisible customers” from the bank’s perspective.

(4) Issues with the corporate culture

In the crisis situation arising from the recent system failures, we observed many examples of a lackluster stance toward curtailing and resolving issues through proactive and self-directed action that transcends individual roles. We also confirmed that there was a hesitation to make statements and act because of risk at a point when the details of the system failure and full scope of impact on customers are not completely clear.

We think the reason for the lack of proactive and self-directed action by directors and employees is a factor of a corporate culture in which taking action to ensure that what could be done within one’s own scope of responsibility was accomplished is seen as the rational choice of behavior within the organization, rather than actively speaking up and thereby incurring potential responsibility risk.

5. Clarification of responsibility

In regards to this incident, our inability to sufficiently fulfill our role as a financial institution responsible for a portion of the social infrastructure and the resulting disruptions affecting many customers are a source of major disappointment for us.

The series of system failures prevented some transactions for time deposits and lottery purchases among ATM and Mizuho Direct customers and caused ATMs to fail to return inserted bankbooks and cards over a broad area that led to lengthy waits for many customers. For payment transactions as well, delays were encountered in fund transfers to other domestic banks and incoming foreign currency remittances.

We once again deeply apologize to our customers and other affected parties for the major disruptions resulting from the occurrence of multiple system failures in a short period of time and that this followed the occurrence of system failures in 2002 and 2011.

We accept our responsibility for the series of system failures and have clarified responsibility in the manner shown in the attachment.

6. Efforts to prevent further incidents at FG and BK

Considering the cause analysis presented by the System Failure Special Investigative Committee, FG and BK think it is necessary to go beyond just surface-level and formal actions in our efforts to prevent further incidents and continuously enhance the efficacy of our system failure response capabilities as an overall organization with awareness of customer convenience and social infrastructure stability through ensuring that horizontal and vertical communication are conducted effectively among divisions (including branches and Head Office).

Specifically, we intend to build frameworks to strengthen system failure response capabilities in a multi-layered way for the purpose of preventing system failure

occurrence and ensuring early detection and recovery if failures do occur in the IT system divisions, in addition to ensuring early detection of system failures and efforts to minimize the impact on customers in the divisions responsible or responding to customers and crisis management. We also plan to bolster the response capabilities of individual divisions and integrate SCPs and BCPs as a cross-divisional initiative. Furthermore, we believe it is possible to build a multilayered defense framework that quickly minimizes impact on customers by enhancing system failure response capabilities as an overall organization, by including in this framework training drills, organizational preparation, and personnel.

Additionally, we intend to pursue continuous enhancement of our people and organization from the perspective of ensuring the efficacy of this multi-layered system failure response capability and fundamentally resolving root issues throughout the entire organization that lead to issues in our IT systems and response to customers & crisis management.

Below we present detailed measures to prevent further incidents and respond to issues in our IT systems and response to customers & crisis management, efforts toward the continuous enhancement of our people and organization.

(1) IT systems

FG and BK will aim to establish operations that suitably address MINORI's characteristics by assigning highly capable personnel and ensuring organic collaboration within and among organizations in light of the system failure cause analysis.

- i. ATM specification changes and hardware equipment updates
 - Revision of specifications for all ATMs at our bank to return bankbooks and other inserted media by default except in cases of concern about inconsistencies in the transaction (Completed)
 - Revision of ATM receipts and screen displays to notify customers in the event of a system failure, as one method of announcement (January - March 2022)
 - Change the error response displayed by the time deposit system,

- except in cases of concern about inconsistencies in the transaction, and avoid retention of inserted media by the ATM (End of September)
 - Implement changes and updates to hardware equipment (Completed) and inspections of all equipment similar to those affected by the recent system failures (End of June)

- ii. Improvement of the monitoring system and revisions to the collaboration framework between IT system development and operation divisions
 - Improve the output and warning method of messages that detect system errors to promptly detect failures in the monitoring system (Completed)
 - Revise the report deadline on detected system errors (End of June), revise the information sharing framework between IT system development and operation divisions (August), and consolidate the same types of errors during high-volume error output (End of December)
 - Begin further enhancement of the monitoring system using automation technology and other capabilities (Approach to be determined at the end of September)

- iii. Implementation of a comprehensive inspection related to MINORI
 - Reassess risk in the portion of MINORI services and functions that have never been used (6% of the overall system) and determine a suitable response at the time of launching those services and functions through reconfirmation of MINORI configuration tests (End of June)
 - Strengthen response capabilities to situations other than ordinary operations, such as system failures, by conducting a mock test by intentionally causing system errors with the potential to be severe failures in the test environment and confirming the behavior of the MINORI system and ripple effects including in peripheral systems (End of December)
 - Inspect support and maintenance items needed to ensure the stable operation of MINORI under conditions such as increase in transaction volume and other impacts on the system and determine whether action is necessary (Implement periodically from the end of September)

- iv. Enhancement of IT system division training drills focused on system failures
 - Introduce system failure scenarios across multiple systems in business areas with heavy impact on customers, such as domestic and foreign exchange transactions, ATMs, and market settlements related operations (Completed), start cross-divisional training drills for those scenarios that involve both system development and operation divisions, customer divisions, and vendors (June), and implement realistic training drills that use actual equipment (End of February 2022)
 - Enhance cause and other analysis capabilities for system failure occurrences by revising the system failure information collection scope and broadening the analysis approach (End of August)
 - Enhance system failure analysis capabilities via the addition and improvement of analysis and review methods for hardware equipment incidents and enhance capabilities to prevent occurrence of similar cases through revisions to the maintenance deadline management method (End of September)

- v. Visualize staff portfolios and enhance organizational control
 - a) Visualization of staff portfolios and personnel reassignment
 - Prepare a detailed list of skills and experience for personnel involved with MINORI, visualize the staff portfolio and assign suitable personnel to the necessary divisions with the aim of stably operating MINORI and peripheral systems (End of September)
 - Hire externally, including for roles at the executive level (End of September)
 - Design a new HR system to support stable development and utilization of IT personnel (End of December)

 - b) Improvement of organizational preparation
 - Establish a “review specialists team” and “infrastructure review team” and re-establish a “technology advisory desk” at the system development company through collaboration with the vendor (Completed)
 - Create a comprehensive IT platform and project division to oversee

technology and quality matters and continuously ensure check operations with a view of the entire system (July)

c) Improvement of system development and maintenance management capabilities

- Strengthen check capabilities for the development process and maintenance management capabilities
 - Clarify sufficiency verification and other procedures for system tests in the development process, including memory sector inspections (Completed)
 - Clarify that system releases and large-scale migration processing at month-end and on other days that might affect customers and business activities should be limited or avoided when preparations for unforeseen situations are inadequate (End of June)
 - Strengthen continuous risk monitoring operations in the system development process (End of September)
- Re-inspect role division and collaboration frameworks with outsourcing partners and strengthen organizational control (End of September)

d) Reinforcement of IT system risk control and internal audit operations

- Strengthen control operations, including assignment and development of personnel with MINORI-related expertise, in the risk management divisions and internal audit divisions (End of September)

(2) Response to customers and crisis management

FG and BK will continuously apply a customer-focused perspective for the overall organization during crisis situations and in normal times in light of the cause analysis of the system failures.

- i. Establishment of organizational capabilities to ascertain customer views and utilize them in our initiatives
 - Assign a service quality improvement officer at all retail branches to reflect customer views into service improvement measures

(Completed)

- Confirm customer and branch views from the past three years and implement an overall inspection of customer services (Completed)
 - Collect and analyze external trends in a multifaceted manner, including from social media and other sources, and create an organization designed to understand changes in the environment and continuously apply this knowledge to service improvements (End of July)
 - Strengthen system ownership with the user divisions, bolster verification of the sufficiency of preparation in light of risk assessment at the time of release, and continuously implement personnel exchange with the IT system divisions that supports this activity (From the end of September)
 - Centralize ATM jurisdiction in the customer divisions (End of September)
- ii. Establishment of operations and preparation for emergencies during normal times with consideration of impact on customers and settlements
- Group the detailed BCP into about 30 important business areas with heavy impact on customers and settlements, such as foreign exchange, ATMs, and market settlements and integrate with the SCP in light of various system diagrams to facilitate utilization from a customer perspective in the event of a system failure (End of June)
 - Implement not only a conventional procedure confirmation process but also a realistic assessment of customer impact in drill exercises and training (Roll out from July)
 - Implement starting with roughly 30 major category business areas
 - Ensure rapid information collection capabilities in emergencies by strengthening the early detection of customer impact in relevant divisions and building cross-divisional personnel networks by service type in normal times (End of June)
 - Establish emergency response operations for branches and Head Office including holidays and nighttime (End of June)
 - Prepare and enhance communication tools such as devices and social media (End of June)
 - Bolster customer notification methods (e.g. use social media) (Completed)

- Convene a meeting of related divisions within one hour of detecting a system failure as a general rule and ensure prompt discussion of the initial response policy (Completed)
- Assign an executive officer in charge of crisis management and strengthen crisis management capabilities including at the executive level (July 1), assign a full-time crisis management office head (Completed), and continuously utilize advice from external experts (Completed)

(3) Continuous enhancement of our people and organization, in step with our customers and society

FG and BK recognize the need to strengthen our people and organization from the perspective of enhancing and increasing the effectiveness of multilayered system failure response capabilities through horizontal and vertical communication in light of the cause analysis of the recent system failures.

In particular, we believe it is necessary to further strengthen organizational action that goes beyond rules and individual scopes of responsibility in addressing issues within our IT systems and response to customers & crisis management, and in light of the latest system failure incidents we believe this should be addressed as a challenge for the organization as a whole.

- i. Enhancement of our people and organizational capabilities
 - Enhance our people and organizational capabilities companywide with personnel development and organizational measures in the areas of IT systems and response to customers & crisis management as well as through proactive utilization of specialists with broad viewpoints
 - Specifically design a framework to promote cross-divisional career development in related divisions in order to enhance expertise (career field management) for individual employees (End of December)
 - Hire externally as necessary even for roles at the organization management level and thereby introduce “fresh air” into the organization (from July)

- Implement personnel performance reviews with emphasis on results and dialogue that promotes employees’ self-directed behavior and growth (End of September)
 - Rigorously conduct training and other activities to ensure personnel development and evaluation operations with emphasis on feedback in 1-on-1 meetings and transition from superficial evaluations to meaningful evaluations
- Simplify layers in the organization including integration of executive-level ranks within the group
 - FG: Abolish senior managing executive officer and managing executive officer roles
 - BK/TB (Mizuho Trust Bank)/SC (Mizuho Securities): Abolish senior managing executive officer roles
 - FG/BK/TB/SC/RT: Integrate executive officer and adviser (“sanyo”) roles into operating officer roles (July 1)
- Steadily promote structural reforms while continuing to carefully assess allocation of necessary corporate resources
 - Prepare a personnel and expenses budget in advance in FY2021 with a plan for 160 people, 8 billion yen in expenses, and 10 billion yen in investment (Completed)

ii. Transform behavior

- Introduce various frameworks, such as promoting open and in-depth communication, from the standpoint of bolstering organizational action (through these initiatives enhance the efficacy of existing operational frameworks, such as the dual hat system between in-house companies and group companies)
 - Transform workstyles from the executive officer level down, aimed at ensuring independent thinking and prompt action (From the end of June)
 - Promote the concept of shifting from communication centered on documentation to “discussion first” communication among all employees
 - Steadily revise meeting formats with emphasis on discussion rather than spending time on material preparation and

- explanations
- Prepare principle-based guidance and avoid uniform and superficial promotion
- Promote integrated operations between Head Office and the frontlines where employees independently apply individual knowledge and ideas to services for customers
 - Introduce a framework to proactively assess constructive proposals and recommendations rather than negatively assessing administrative mistakes (Already started; steady reflection into rules and other areas through the end of September)
 - Make additional assignments of 100 “branch communicators” and 30 “Head Office instructors” from the standpoint of applying individual knowledge and ideals to customer services and strengthen regular networking among branches and Head Office in a multi-faceted manner (End of September)

The Investigative Report (attachments 9-11) present points to consider in the implementation of measures with the possibility of preventing further incidents or actions for preventing further incidents, categorized as follows: (1) items to consider in order to reduce the possibility of further incidents of IT system failures, (2) items to consider in order to minimize and localize impact on customers, and (3) points to consider in the implementation of measures to prevent further incidents in relation to the response to customers. FG and BK intend to proactively review these points and apply them toward the further improvement of our responses.

7. Stance in future efforts

As the managing company, FG will conduct overall group management by formulating plans and preparing and presenting basic policies on risk management and other matters to group companies in accordance with group management regulations, promoting the establishment of capabilities at group companies, receiving requests and reports from group companies on necessary items, and issuing advance approval of important items.

Group companies, including BK, will establish their respective operations in accordance with FG's basic policies, submit requests and reports to FG on necessary items, and suitably carry out business under proper management.

FG and BK plan to have their executive management clarify what should be targeted in the measures to prevent further incidents of IT system failures to ensure efficacy and continuity in light of their fundamental roles and responsibilities and involve all executive officers and employees in the pursuit of these goals.

- Recognizing the seriousness of the recent system failure incidents, FG intends to formulate basic policies for the group (group-wide HR system operations, IT system failure training drills basic policy, etc.), allocate necessary corporate resources, and horizontally deploy actions at other group companies related to the recent system failures from the standpoint of ensuring suitable operations as a group. As BK's managing company, FG also plans to manage and supervise progress at BK in regards to measures to prevent further incidents.
- As entity with jurisdiction of MINORI and which is in charge of development, operation, and management of the system in addition to being a provider of a variety of financial services to customers under FG management, BK aims to strengthen multilayered system failure response capabilities with the goal of ensuring efficacy from the customer perspective in the full range of the above-mentioned prevention measures through rigorous implementation within frontline operations, including at group companies (outsourcing partners) and will promote of cross-organizational knowledge retention through continuous drill exercises and training.

To reliably and rapidly implement the above-mentioned system failure response measures, we intend to establish the System Failure Improvement Promotion Committee headed by FG and BK president and CEOs.

From a management supervision standpoint, FG has already established the System Failure Response Evaluation Committee comprised of only outside

directors. It intends to shift the role and objective of this Committee from “cause discovery and assessing the suitability of measures to prevent further incidents” to “supervising the implementation of measures to prevent further incidents” and continue addressing the recent incidents. Additionally, BK, which is the entity implementing the full range of prevention measures, plans to establish a similar committee comprised of outside and internal directors. Refer to the details below.

FG System Failure Response Evaluation Committee

- (1) Members: Four members appointed from among the outside directors
- (2) Objective
 - i. Confirm FG’s progress monitoring of BK’s measures to prevent further incidents
 - ii. Confirm progress on FG’s measures to prevent further incidents

BK System Failure Response Evaluation Committee

- (1) Members: Members appointed from among the outside and internal directors
- (2) Objective
 - i. Confirm progress on BK’s measures to prevent further incidents

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1. Introduction

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To ensure that our customers can reliably engage in transactions with BK, FG and BK will pursue efforts as an overall organization to strengthen multilayer responsive capabilities in the event of system failures by bolstering initiatives concerning IT systems and response to customers response & crisis management and integrating these activities dynamically and cross-divisionally with the aim of preventing further incidents. These actions will be based on through reflection on past system failure incidents and of recommendations from the System Failure Special Investigative Committee to ensure that the issues which occurred in this recent incident are addressed in a fundamental and sustainable way.

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usage rate at 9:50am on the same day exceeded 100%. This disabled all update processing involving access to the time deposits system and led to retention of bankbooks and cards in ATMs that access this system and prevented transactions involving time deposits in Mizuho Direct, an online banking service. The impact of these errors widened and led to closures of ATMs at 10:00am and subsequently Mizuho Direct processing sections. Such subsequent closures triggered many errors in ATM transactions and other activities besides time deposits and numerous instances of ATMs failing to return inserted bankbooks and cards.

Roughly 6,400 error messages occurred between 9:50am and 10:05am on the same day, and BK and Mizuho Research & Technologies (hereinafter, RT; Mizuho Information & Research Institute at the time of the incident) started looking into the cause of the failure and implemented actions to restore operations. However, RT did not detect the suspension of the ATM processing section until 5:10pm on the same day, which was more than seven hours after the error detection, and it took until 6:39pm on the same day to complete the restart of the ATM processing section again.

This system failure affected customers through (1) suspension of ATM operations (as many as 4,318 machines), (2) retention of inserted bankbooks and cards at ATMs (5,244 cases), and (3) disabling of some ATM and Mizuho Direct transactions.

Regarding the retention of bankbooks and cards, despite the recovery and return of some bankbooks and cards via remote operation from the ATM Center that monitors ATMs and via the direct involvement of security companies and branch employees, it was difficult to respond sufficiently because of the large number of cases of trapped bankbooks/cards, and since February 28 was a Sunday too, numerous customers were unable to retrieve their bankbooks and cards from ATMs for a lengthy amount of time. Many customers were stuck waiting for a long period in front of ATMs because they were unable to leave these locations without any information until making contact with BK. Furthermore, ATMs returned to a normal external appearance after the recovery of a retained bankbook or card, and this resulted in many cases of the same ATM retaining the bankbooks and cards of other customers.

It was only possible to return retained bankbooks and cards on the same day in 1,244 cases, and returns for an additional 5,152 cases took until March 7, a week after the date of the system failure, and returns for all cases required until April 22.

(2) March 3

On March 3, 2021, a network card in network equipment at a BK data center failed, and this problem destabilized communications for three minutes until the switch to a network card in a different system. Since the switch to the other system occurred automatically, normal communications were restored three minutes after the incident. Impacts during this period were (1) retention of inserted bankbooks and cards at ATMs (29 cases) and (2) partial failure in Numbers Lottery ticket purchase transactions via ATM or Mizuho Direct service (7 cases).

(3) March 7

On March 7, 2021, when BK released a program related to the delinquent interest collection function for consumer loan products, errors occurred in centralized entry processing related to consolidated account time deposits at 6:08am on the same day because of a mistake involving the omission of an initialization process that was necessary in said program's design.

BK and RT released a revised program that addressed the omitted initialization process and restored time deposit transactions at 1:42pm on the same day.

Customers who experienced failed time deposit transactions via ATMs or Mizuho Direct service received notification of the system failure and failed transaction and an explanation of the circumstances. Some time deposit services at ATM were temporarily suspended with the aim of preventing ATMs from retaining bankbooks and cards.

(4) March 12

At 11:39pm on March 11, (1) failure of communications control equipment within

storage equipment in MINORI's common platform shut off communication between the storage equipment and server and thereby halted business systems running on the affected server. At the same time, (2) suspension of "integrated file handling" (business system handling transfers between platforms of files needed for batch entry processing at operations centers) delayed batch entry processing at operations centers. This resulted in (3) mainly delays in foreign currency transfer processing.

Despite immediate restoration action for storage equipment after error detection, the connection did not recover after switching the communication control equipment and it took six hours and 41 minutes to restore the entire server and six hours and 59 minutes to restore integrated file handling.

While batch entry processing at operations centers steadily resumed after restoration of integrated file handling, sufficient recovery procedures were not conducted for the foreign exchange system and processing was not completed by the specified deadline.

Due to this incident, 263 transfers to other domestic banks did not meet the deadline for March 12 and 761 foreign currency transfers did not complete deposit notification processing during the same day. Regarding transfers, negotiations took place with the receiving banks, including the deposit date, premised on BK handling the back-value costs. For transfer recipients, BK contacted receiving parties to confirm their view of the deposit date and confirmed completion of all deposits as of March 31.

3. FG and BK initiatives thus far based on past system failures

Regarding past system failures, and particularly cases in 2002 and 2011, various system issues occurred in relation to system functionality and system risk management operations. From the perspective of fundamentally improving these matters, one of the initiatives detailed in the Mizuho group's "Initiatives to restore trust" disclosed in May 2011 was the pursuit of a fully integrated system and completion of the migration to the new core banking system (MINORI) in July 2019.

MINORI adopted a design based on service-oriented architecture (SOA) ^(Note 1) that isolates affected areas in the case of system failure and does not halt the entire core banking system.

Furthermore, from the perspective of responding to customers and crisis management, past system failure cases involved difficulties in achieving a rapid initial response and suitable response to customers as an organization due to insufficiencies in various management frameworks and rule definition, including contingency plans, crisis management operations, and information exchange operations. Learning from these experiences, we built emergency response and crisis response frameworks, including clarification of the initial reporting method and role division, the addition of BCP ^(Note 2) and SCP ^(Note 3) formats, and a framework to manage important cross-divisional systems and administrative projects.

However, as indicated in 2., considering the occurrence of four system failures in a short period of time, we realize the need to identify the root causes in the group's organization, based on a thorough review of the events that occurred this time along with the background and causes of past situations and measures taken to address them, and implement fundamental and sustainable measures to prevent further incidents.

(Note 1) Service-oriented architecture

This is a type of IT system construction method. It defines system functions as business units recognized by users and converts system processing to parts. The method improves system development efficiency and avoids complicating the system structure by combining and reusing these elements.

(Note 2) Business contingency plan

This is a plan to ensure business continuity that specifies work impact, related systems, initial response, provisional response, full-fledged recovery response, and other aspects for important work processes that need to continue in an emergency situation.

(Note 3) System contingency plan

This is a plan that specifies initial response, provisional response, full-fledged recovery response, and other aspects for important work processes that need to continue in an emergency situation.

4. Cause analysis

The System Failure Special Investigative Committee conducted a detailed

cause analysis of the various events and broadly reviewed not only system failure cases from 2002 and 2011 but also other system failures to investigate past incidents and identified common points with the latest occurrences. Refer to the explanations in the Investigative Report for details.

The Investigative Report cites three points as causes of the latest series of system failures – (1) Deficient organizational capability to respond to crisis situations, (2) Deficient IT system management, and (3) Deficient focus on the customer's perspective. Additionally, it stipulates an underlying cause of (4) Underlying conditions or corporate culture that prevents straightforward improvement of these issues.

We think these points offer important guidelines that the Mizuho group should reflect into its efforts to prevent further incidents. While the Investigative Report covers them in further detail, we present some of the report's content below.

(1) Deficient organizational capability to respond to crisis situations

When an unexpected crisis event, in this case a system failure, occurred efforts to collaborate in order to suitably understand information from other divisions were insufficient (horizontal communication) and the framework to respond to events by centralizing information did not work. Also, communication of information with executives was inadequate with delays in reporting to executives and lateness in setting up the Emergency Response Project Team (vertical communication). These outcomes clearly exposed a weakness in our crisis response capabilities as an organization.

(2) Deficient IT system management

Overall, our IT governance and IT management did not function properly and our IT system control capabilities were deficient. In the February 28 system failure this was exemplified by inadequate risk awareness of the potential to exceed capacity in the Index File of the deleted information management table and unpreparedness and inadequacy of information gathering measures within the operations management and system failure recovery response frameworks. For the March 7 system failure, examples include insufficient testing related to consumer loan cases and unpreparedness within management operations at the outsourcing partner. For the March 12 system failure, issues include inadequate

training for dealing with recovery when failure occurs and issues in management operations at the outsourcing partner and information sharing operations related to the response to customers.

Some reasons for these issues are (1) inadequate consideration of the reassignment of IT personnel after the migration to MINORI, and (2) inadequate preparedness for a crisis on holidays and outside of business hours that should be covered more extensively in risk management. Another underlying issue is (3) low sensitivity to system risk among executives and others despite repeated system failures.

(3) Deficient focus on the customer's perspective

As seen in the February 28 failure that caused significant inconvenience for customers, we lacked (1) awareness of issues regarding the ATM bankbook and card capturing mechanisms and resulting impact and (2) a stance of doing whatever is possible to address customer interests in responding to system failures. We also cannot ignore the insufficient awareness of customers using ATMs and the Mizuho Direct service as “invisible customers” from the bank’s perspective.

(4) Issues with the corporate culture

In the crisis situation arising from the recent system failures, we observed many examples of a lackluster stance toward curtailing and resolving issues through proactive and self-directed action that transcends individual roles. We also confirmed that there was a hesitation to make statements and act because of risk at a point when the details of the system failure and full scope of impact on customers are not completely clear.

We think the reason for the lack of proactive and self-directed action by directors and employees is a factor of a corporate culture in which taking action to ensure that what could be done within one’s own scope of responsibility was accomplished is seen as the rational choice of behavior within the organization, rather than actively speaking up and thereby incurring potential responsibility risk.

5. Clarification of responsibility

In regards to this incident, our inability to sufficiently fulfill our role as a financial institution responsible for a portion of the social infrastructure and the resulting disruptions affecting many customers are a source of major disappointment for us.

The series of system failures prevented some transactions for time deposits and lottery purchases among ATM and Mizuho Direct customers and caused ATMs to fail to return inserted bankbooks and cards over a broad area that led to lengthy waits for many customers. For payment transactions as well, delays were encountered in fund transfers to other domestic banks and incoming foreign currency remittances.

We once again deeply apologize to our customers and other affected parties for the major disruptions resulting from the occurrence of multiple system failures in a short period of time and that this followed the occurrence of system failures in 2002 and 2011.

We accept our responsibility for the series of system failures and have clarified responsibility in the manner shown in the attachment.

6. Efforts to prevent further incidents at FG and BK

Considering the cause analysis presented by the System Failure Special Investigative Committee, FG and BK think it is necessary to go beyond just surface-level and formal actions in our efforts to prevent further incidents and continuously enhance the efficacy of our system failure response capabilities as an overall organization with awareness of customer convenience and social infrastructure stability through ensuring that horizontal and vertical communication are conducted effectively among divisions (including branches and Head Office).

Specifically, we intend to build frameworks to strengthen system failure response capabilities in a multi-layered way for the purpose of preventing system failure

occurrence and ensuring early detection and recovery if failures do occur in the IT system divisions, in addition to ensuring early detection of system failures and efforts to minimize the impact on customers in the divisions responsible or responding to customers and crisis management. We also plan to bolster the response capabilities of individual divisions and integrate SCPs and BCPs as a cross-divisional initiative. Furthermore, we believe it is possible to build a multilayered defense framework that quickly minimizes impact on customers by enhancing system failure response capabilities as an overall organization, by including in this framework training drills, organizational preparation, and personnel.

Additionally, we intend to pursue continuous enhancement of our people and organization from the perspective of ensuring the efficacy of this multi-layered system failure response capability and fundamentally resolving root issues throughout the entire organization that lead to issues in our IT systems and response to customers & crisis management.

Below we present detailed measures to prevent further incidents and respond to issues in our IT systems and response to customers & crisis management, efforts toward the continuous enhancement of our people and organization.

(1) IT systems

FG and BK will aim to establish operations that suitably address MINORI's characteristics by assigning highly capable personnel and ensuring organic collaboration within and among organizations in light of the system failure cause analysis.

- i. ATM specification changes and hardware equipment updates
 - Revision of specifications for all ATMs at our bank to return bankbooks and other inserted media by default except in cases of concern about inconsistencies in the transaction (Completed)
 - Revision of ATM receipts and screen displays to notify customers in the event of a system failure, as one method of announcement (January - March 2022)
 - Change the error response displayed by the time deposit system,

- except in cases of concern about inconsistencies in the transaction, and avoid retention of inserted media by the ATM (End of September)
 - Implement changes and updates to hardware equipment (Completed) and inspections of all equipment similar to those affected by the recent system failures (End of June)

- ii. Improvement of the monitoring system and revisions to the collaboration framework between IT system development and operation divisions
 - Improve the output and warning method of messages that detect system errors to promptly detect failures in the monitoring system (Completed)
 - Revise the report deadline on detected system errors (End of June), revise the information sharing framework between IT system development and operation divisions (August), and consolidate the same types of errors during high-volume error output (End of December)
 - Begin further enhancement of the monitoring system using automation technology and other capabilities (Approach to be determined at the end of September)

- iii. Implementation of a comprehensive inspection related to MINORI
 - Reassess risk in the portion of MINORI services and functions that have never been used (6% of the overall system) and determine a suitable response at the time of launching those services and functions through reconfirmation of MINORI configuration tests (End of June)
 - Strengthen response capabilities to situations other than ordinary operations, such as system failures, by conducting a mock test by intentionally causing system errors with the potential to be severe failures in the test environment and confirming the behavior of the MINORI system and ripple effects including in peripheral systems (End of December)
 - Inspect support and maintenance items needed to ensure the stable operation of MINORI under conditions such as increase in transaction volume and other impacts on the system and determine whether action is necessary (Implement periodically from the end of September)

- iv. Enhancement of IT system division training drills focused on system failures
 - Introduce system failure scenarios across multiple systems in business areas with heavy impact on customers, such as domestic and foreign exchange transactions, ATMs, and market settlements related operations (Completed), start cross-divisional training drills for those scenarios that involve both system development and operation divisions, customer divisions, and vendors (June), and implement realistic training drills that use actual equipment (End of February 2022)
 - Enhance cause and other analysis capabilities for system failure occurrences by revising the system failure information collection scope and broadening the analysis approach (End of August)
 - Enhance system failure analysis capabilities via the addition and improvement of analysis and review methods for hardware equipment incidents and enhance capabilities to prevent occurrence of similar cases through revisions to the maintenance deadline management method (End of September)

- v. Visualize staff portfolios and enhance organizational control
 - a) Visualization of staff portfolios and personnel reassignment
 - Prepare a detailed list of skills and experience for personnel involved with MINORI, visualize the staff portfolio and assign suitable personnel to the necessary divisions with the aim of stably operating MINORI and peripheral systems (End of September)
 - Hire externally, including for roles at the executive level (End of September)
 - Design a new HR system to support stable development and utilization of IT personnel (End of December)

 - b) Improvement of organizational preparation
 - Establish a “review specialists team” and “infrastructure review team” and re-establish a “technology advisory desk” at the system development company through collaboration with the vendor (Completed)
 - Create a comprehensive IT platform and project division to oversee

technology and quality matters and continuously ensure check operations with a view of the entire system (July)

c) Improvement of system development and maintenance management capabilities

- Strengthen check capabilities for the development process and maintenance management capabilities
 - Clarify sufficiency verification and other procedures for system tests in the development process, including memory sector inspections (Completed)
 - Clarify that system releases and large-scale migration processing at month-end and on other days that might affect customers and business activities should be limited or avoided when preparations for unforeseen situations are inadequate (End of June)
 - Strengthen continuous risk monitoring operations in the system development process (End of September)
- Re-inspect role division and collaboration frameworks with outsourcing partners and strengthen organizational control (End of September)

d) Reinforcement of IT system risk control and internal audit operations

- Strengthen control operations, including assignment and development of personnel with MINORI-related expertise, in the risk management divisions and internal audit divisions (End of September)

(2) Response to customers and crisis management

FG and BK will continuously apply a customer-focused perspective for the overall organization during crisis situations and in normal times in light of the cause analysis of the system failures.

- i. Establishment of organizational capabilities to ascertain customer views and utilize them in our initiatives
 - Assign a service quality improvement officer at all retail branches to reflect customer views into service improvement measures

(Completed)

- Confirm customer and branch views from the past three years and implement an overall inspection of customer services (Completed)
 - Collect and analyze external trends in a multifaceted manner, including from social media and other sources, and create an organization designed to understand changes in the environment and continuously apply this knowledge to service improvements (End of July)
 - Strengthen system ownership with the user divisions, bolster verification of the sufficiency of preparation in light of risk assessment at the time of release, and continuously implement personnel exchange with the IT system divisions that supports this activity (From the end of September)
 - Centralize ATM jurisdiction in the customer divisions (End of September)
- ii. Establishment of operations and preparation for emergencies during normal times with consideration of impact on customers and settlements
- Group the detailed BCP into about 30 important business areas with heavy impact on customers and settlements, such as foreign exchange, ATMs, and market settlements and integrate with the SCP in light of various system diagrams to facilitate utilization from a customer perspective in the event of a system failure (End of June)
 - Implement not only a conventional procedure confirmation process but also a realistic assessment of customer impact in drill exercises and training (Roll out from July)
 - Implement starting with roughly 30 major category business areas
 - Ensure rapid information collection capabilities in emergencies by strengthening the early detection of customer impact in relevant divisions and building cross-divisional personnel networks by service type in normal times (End of June)
 - Establish emergency response operations for branches and Head Office including holidays and nighttime (End of June)
 - Prepare and enhance communication tools such as devices and social media (End of June)
 - Bolster customer notification methods (e.g. use social media) (Completed)

- Convene a meeting of related divisions within one hour of detecting a system failure as a general rule and ensure prompt discussion of the initial response policy (Completed)
- Assign an executive officer in charge of crisis management and strengthen crisis management capabilities including at the executive level (July 1), assign a full-time crisis management office head (Completed), and continuously utilize advice from external experts (Completed)

(3) Continuous enhancement of our people and organization, in step with our customers and society

FG and BK recognize the need to strengthen our people and organization from the perspective of enhancing and increasing the effectiveness of multilayered system failure response capabilities through horizontal and vertical communication in light of the cause analysis of the recent system failures.

In particular, we believe it is necessary to further strengthen organizational action that goes beyond rules and individual scopes of responsibility in addressing issues within our IT systems and response to customers & crisis management, and in light of the latest system failure incidents we believe this should be addressed as a challenge for the organization as a whole.

- i. Enhancement of our people and organizational capabilities
 - Enhance our people and organizational capabilities companywide with personnel development and organizational measures in the areas of IT systems and response to customers & crisis management as well as through proactive utilization of specialists with broad viewpoints
 - Specifically design a framework to promote cross-divisional career development in related divisions in order to enhance expertise (career field management) for individual employees (End of December)
 - Hire externally as necessary even for roles at the organization management level and thereby introduce “fresh air” into the organization (from July)

- Implement personnel performance reviews with emphasis on results and dialogue that promotes employees’ self-directed behavior and growth (End of September)
 - Rigorously conduct training and other activities to ensure personnel development and evaluation operations with emphasis on feedback in 1-on-1 meetings and transition from superficial evaluations to meaningful evaluations
- Simplify layers in the organization including integration of executive-level ranks within the group
 - FG: Abolish senior managing executive officer and managing executive officer roles
 - BK/TB (Mizuho Trust Bank)/SC (Mizuho Securities): Abolish senior managing executive officer roles
 - FG/BK/TB/SC/RT: Integrate executive officer and adviser (“sanyo”) roles into operating officer roles (July 1)
- Steadily promote structural reforms while continuing to carefully assess allocation of necessary corporate resources
 - Prepare a personnel and expenses budget in advance in FY2021 with a plan for 160 people, 8 billion yen in expenses, and 10 billion yen in investment (Completed)

ii. Transform behavior

- Introduce various frameworks, such as promoting open and in-depth communication, from the standpoint of bolstering organizational action (through these initiatives enhance the efficacy of existing operational frameworks, such as the dual hat system between in-house companies and group companies)
 - Transform workstyles from the executive officer level down, aimed at ensuring independent thinking and prompt action (From the end of June)
 - Promote the concept of shifting from communication centered on documentation to “discussion first” communication among all employees
 - Steadily revise meeting formats with emphasis on discussion rather than spending time on material preparation and

- explanations
- Prepare principle-based guidance and avoid uniform and superficial promotion
- Promote integrated operations between Head Office and the frontlines where employees independently apply individual knowledge and ideas to services for customers
 - Introduce a framework to proactively assess constructive proposals and recommendations rather than negatively assessing administrative mistakes (Already started; steady reflection into rules and other areas through the end of September)
 - Make additional assignments of 100 “branch communicators” and 30 “Head Office instructors” from the standpoint of applying individual knowledge and ideals to customer services and strengthen regular networking among branches and Head Office in a multi-faceted manner (End of September)

The Investigative Report (attachments 9-11) present points to consider in the implementation of measures with the possibility of preventing further incidents or actions for preventing further incidents, categorized as follows: (1) items to consider in order to reduce the possibility of further incidents of IT system failures, (2) items to consider in order to minimize and localize impact on customers, and (3) points to consider in the implementation of measures to prevent further incidents in relation to the response to customers. FG and BK intend to proactively review these points and apply them toward the further improvement of our responses.

7. Stance in future efforts

As the managing company, FG will conduct overall group management by formulating plans and preparing and presenting basic policies on risk management and other matters to group companies in accordance with group management regulations, promoting the establishment of capabilities at group companies, receiving requests and reports from group companies on necessary items, and issuing advance approval of important items.

Group companies, including BK, will establish their respective operations in accordance with FG's basic policies, submit requests and reports to FG on necessary items, and suitably carry out business under proper management.

FG and BK plan to have their executive management clarify what should be targeted in the measures to prevent further incidents of IT system failures to ensure efficacy and continuity in light of their fundamental roles and responsibilities and involve all executive officers and employees in the pursuit of these goals.

- Recognizing the seriousness of the recent system failure incidents, FG intends to formulate basic policies for the group (group-wide HR system operations, IT system failure training drills basic policy, etc.), allocate necessary corporate resources, and horizontally deploy actions at other group companies related to the recent system failures from the standpoint of ensuring suitable operations as a group. As BK's managing company, FG also plans to manage and supervise progress at BK in regards to measures to prevent further incidents.
- As entity with jurisdiction of MINORI and which is in charge of development, operation, and management of the system in addition to being a provider of a variety of financial services to customers under FG management, BK aims to strengthen multilayered system failure response capabilities with the goal of ensuring efficacy from the customer perspective in the full range of the above-mentioned prevention measures through rigorous implementation within frontline operations, including at group companies (outsourcing partners) and will promote of cross-organizational knowledge retention through continuous drill exercises and training.

To reliably and rapidly implement the above-mentioned system failure response measures, we intend to establish the System Failure Improvement Promotion Committee headed by FG and BK president and CEOs.

From a management supervision standpoint, FG has already established the System Failure Response Evaluation Committee comprised of only outside

directors. It intends to shift the role and objective of this Committee from “cause discovery and assessing the suitability of measures to prevent further incidents” to “supervising the implementation of measures to prevent further incidents” and continue addressing the recent incidents. Additionally, BK, which is the entity implementing the full range of prevention measures, plans to establish a similar committee comprised of outside and internal directors. Refer to the details below.

FG System Failure Response Evaluation Committee

- (1) Members: Four members appointed from among the outside directors
- (2) Objective
 - i. Confirm FG’s progress monitoring of BK’s measures to prevent further incidents
 - ii. Confirm progress on FG’s measures to prevent further incidents

BK System Failure Response Evaluation Committee

- (1) Members: Members appointed from among the outside and internal directors
- (2) Objective
 - i. Confirm progress on BK’s measures to prevent further incidents

(Attachment)

Executive penalties

We have decided to reduce executive compensation as shown below.

Mizuho Financial Group President & Group CEO	Tatsufumi Sakai	Monthly pay -50% x six months
Mizuho Bank President & CEO	Koji Fujiwara	Monthly pay -50% x four months

IT & Systems Group, Operations Group:

Head of IT & Systems Group and Head of Operations Group	Satoshi Ishii	Monthly pay -40% x four months
Deputy Head of IT & Systems Group	Takeshi Katano	Monthly pay -20% x four months
Executive Officer in Charge of Specific Business of Operations Group	Eishi Shimizu	Monthly pay -10% x four months

Strategic Planning Group:

Head of Strategic Planning Group	Naoshi Inomata	Monthly pay -15% x four months
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Retail & Business Banking Company, Retail & Business Banking Division:

Head of Retail & Business Banking Company	Masahiro Otsuka*	Monthly pay -15% x four months
Head of Retail & Business Banking Division	Yukinobu Maruyama **	Monthly pay -15% x four months
Executive Officer in Charge of Specific Business of Retail & Business Banking Division [†]	Satoshi Suzuki	Monthly pay -10% x four months

[†] Lists Mizuho Bank position

Note: See below for affiliations of executive officers without a company name listed.

No mark: Both Mizuho Financial Group and Mizuho Bank

*: Mizuho Financial Group

** : Mizuho Bank

Reference: Mizuho Research & Technologies

Deputy President	Yasumasa Mukai ¹	Monthly pay -20% x four months
Managing Director	Tatsuhiko Takahashi ²	Monthly pay -10% x four months

¹Previously Mizuho Information & Research Institute President & CEO

²Previously Mizuho Information & Research Institute Deputy President, and Head of Project Design Sector

Measures taken after past IT system failures

- Implemented the following measures in response to IT system failures in 2002 and 2011
 - Developed and migrated to MINORI, the new core banking system
 - Set up rules, frameworks, and contingency plans for system development & operation, risk management, responses in the event of system failure, etc.

Summary of causes identified by the Special Investigative Committee*

- 1. Deficient organizational capability to respond to crisis situations**
- 2. Deficient IT system management** [(1) Issues with the reassignment of IT personnel, (2) Insufficient preparations for stable IT system operation, (3) Points in common with the causes of past IT system failures]
- 3. Deficient focus on the customer's perspective** [(1) Issues related to ATM capturing mechanisms for bankbooks and cards, (2) Lack of consideration of the customer when responding to the system failure, (3) Lack of acknowledgement of customers using ATMs]
- 4. Issues with the corporate culture**

*From the Special Investigative Committee's report

Improving multilayered IT system failure responses:

In addition to enhancing IT systems and response to customers / crisis management, ensure integrated management of these elements to build a multilayer defense mechanism

IT systems

Response to customers / Crisis management

Set up structure suited to the characteristics of MINORI

Ensure we always consider the customer's perspective, in normal times and contingencies

- **Change ATM specifications and improve monitoring system**
- **Comprehensive MINORI-related inspection**
 - Re-examine not-yet-operational services (6%)
 - Force an error leading to a serious failure and check the ripple effects and countermeasures
- **In addition to drills on the system development and operation side, run drills with participation by customer divisions and drills for errors on actual ATMs**
- **Visualize staff portfolios and enhance organizational control**
 - List up staff skills and experience in detail, and assign the appropriate person for each role (including external hires)
 - Enhance the control structure, including setting up a technology and quality management organization and managing vendors

- **Organizational response that accounts for customer opinion**
 - Assign a service quality improvement officer (at all retail branches)
 - Launch a team at Head Office for analyzing social media and other data
- **Establish a framework centered on the impact on customers and settlements**
 - Divide individual BCP formats into larger groups (approx. 30 groups) and integrate with SCP based on a configuration diagram for each IT system
 - Shift from the conventional "check the manual" approach to hands-on drills and training which encourages independent thinking about potential impact on customers
 - Develop service-specific, cross-organizational networks at Head Office. Hold response meetings within an hour of a failure being detected
- **Create an executive position in charge of crisis management**

Continuous enhancement of our people and organization, in step with our customers and society

Further enhance ability to take organizational action, transcending rules and scopes of responsibility

Enhance our people and organization

- In addition to the points on the left, we will enhance our people and organization by methods including utilizing specialists with broad perspectives
 - Develop careers across multiple relevant departments and utilize external hires
 - Personnel performance reviews that prioritize constructive feedback
 - Simplify executive positions (abolish Senior Managing Executive Officer and Managing Executive Officer roles)
- Steadily promote structural reforms while continuing to pay due attention to the necessary allocation of corporate resources (in FY21, expanded personnel/expenses budget in advance)

Transform behavior

- Introduce mechanisms for more active communication, aimed at strengthening our ability to enhance organizational action (also enhance effectiveness of the in-house company system and dual-hat system at each company)
 - Shift from communication centered on documentation to "discussion first" communication
 - Stop negative evaluations for administrative errors and give positive evaluations for proposing measures for improvement
 - Create the positions of "branch communicator" and "Head Office instructor" and develop networks between them

Main measures to prevent further incidents

- Senior management will clarify the aims of these measures to prevent further incidents so as to ensure their effectiveness and continuity, and all members of the organization will implement the measures with a sense of purpose
 - We will **set up an IT system failure response committee** within both the supervision and execution lines, and implement regular follow-ups