

## Policy on Technical Glitches

**Guidelines for prevention of Business Disruption due to technical glitches & Standard Operating Procedures (SOP) to be adopted upon incident of Technical Glitches. (whatever directives applicable to our organization)**

### Objective

The objective of this guideline is to outline the technology infrastructure and system requirements that a member should put in place to prevent any incident of business disruption resulting from technical glitches. These guidelines also prescribe the Standard Operating Procedures (SOP) for reporting of technical glitches by Members, handling business disruption, management of such business disruption, including declaration of disaster and framing of provisions for disciplinary action in case of non-compliance in reporting/inadequate management of business disruption.

### Definition

**Technical Glitch:** Technical glitch shall mean any malfunction in the systems of stock broker including malfunction in its hardware, software, networks, processes or any products or services provided by the stock broker in the electronic form. The malfunction can be on account of inadequate infrastructure/systems, cyberattacks/incidents, procedural errors and omissions, or process failures or otherwise, in their own systems or the one outsourced from any third parties, which may lead to either stoppage, slowing down or variance in the normal functions/operations / services of systems of the stock broker for a contiguous period of five minutes or more.

### Reporting Requirements

The Company shall be required to report to the Exchange any technical glitches, resulting in Business Disruption. Reporting shall be done as under:

- a) The Company shall inform about the technical glitch to the stock exchange immediately but not later than one hour from the time of occurrence of the glitch.
- b) Preliminary Incident Report be submitted to the Exchange within T+1 day of the incident (T being the date of the incident). The report shall include the date and time of the incident, the details of the incident, effect of the incident and the immediate action taken to rectify the problem.
- c) Root Cause Analysis (RCA) Report shall be submitted to stock exchange, within fourteen days from the date of the incident. The RCA report shall, inter-alia, include time of incident, cause of the technical glitch (including root cause from vendor(s), if applicable), duration, chronology of events, impact analysis and details of corrective/ preventive measures taken (or to be taken), restoration of operations etc.
- d) For the purpose of the aforementioned reporting, the company shall submit information at a common dedicated email id i.e. [infotechglitch@nse.co.in](mailto:infotechglitch@nse.co.in), across all stock exchanges.

### Capacity Planning

The increase in the number of investors may burden the stock broker's electronic trading system. Therefore, the stock broker must undertake adequate capacity planning for continuity in the service. The stock broker shall plan for the entire trading infrastructure, including server capabilities, network availability & the serving capacity of the trading applications. The stock

brokers shall, in addition to undertaking capacity planning, also adhere to the following requirements:

- a) Stock brokers shall monitor peak load in their trading applications, servers and network architecture. The Peak load shall be determined on the basis of highest peak load observed by the stock broker during a calendar quarter. The installed capacity shall be at least one and half times (1.5x) of the observed peak load.
- b) Stock brokers must deploy adequate monitoring mechanisms within their networks and systems to get timely alerts on current utilization of capacity going beyond permissible limit of seventy percent of its installed capacity.
- c) To ensure the continuity of services at the primary data center, the stock brokers shall aim to achieve full redundancy in their IT system relating to the trading applications to ensure service continuity at the primary data centre.

**Software testing and change**

Stock Brokers must ensure that all software changes that are taking place in their applications are rigorously tested before they are used in production systems. Software changes could impact the functioning of the software if adequate testing is not carried out. In view of this, stock brokers shall adopt the following framework for carrying out software related changes/testing in their systems:

- a) Stock brokers must create test driven environments for all types of software developed by them or their vendors.
- b) Specified stock brokers shall do their software testing in automated environments.
- c) Stock Brokers shall prepare a traceability matrix between functionalities and unit tests, while developing any software that is used in trading activities.
- d) Stock brokers shall implement a change management process to avoid any risk arising due to unplanned and unauthorized changes for all its information security assets.
- e) Stock brokers shall periodically update all their assets including Servers, OS, databases, middleware, network devices, firewalls, IDS /IPS desktops etc. with latest applicable versions and patches.

**Business Continuity Planning (BCP) and Disaster Recovery Site (DRS):**

- a) Stock brokers with a minimum client base across the exchanges, shall mandatorily establish business continuity/DR setup. A comprehensive BCP-DR policy is required to be put in place, which shall outline the standing operating procedure to be followed in the event of any disaster. A suitable framework shall be established to monitor the critical systems' health and performance during the normal course of business. The policy shall be reviewed periodically to determine the incident that may affect business continuity.
- b) DRS shall be established in different seismic zones, however, in case of operational constraints, the chances of geographical separation are not possible. Therefore, the Primary Data Centre (PDS) and DRS shall be separately located from each other by a distance of at least 250 Km. to ensure that both centres are not affected by the natural Disaster. Moreover, the DRS site shall be made accessible to the Primary Data centre for syncing the data across two sites.
- c) The stock brokers shall conduct DR drills or live trading from the DR site. The drills/live tradings shall include conducting all operations from the DRS for at least one full trading day. Further, the frequency of such drills shall be decided by the stock exchanges in consultation with the stock brokers.

- d) Stock brokers, shall constitute responsible teams for taking decisions about shifting of operations from primary site to DR site, putting adequate resources at DR site, and setting up mechanism to make DR site operational from primary data center etc.
- e) Adequate resources shall be made available at all times by the stock brokers to handle operations at PDC or DRS. Hardware, system software, network and security devices and associated application environments of DRS and PDC shall have one-to-one correspondence between them.
- f) Stock exchanges in consultation with stock brokers shall decide upon Recovery Time Objective (RTO) i.e. the maximum time taken to restore operations from DRS after declaration of Disaster and, Recovery Point Objective (RPO) i.e. the maximum tolerable period for which data might be lost due to a major incident.
- g) Replication architecture, bandwidth & load consideration between DRS and PDC shall be within the RTO and the whole system shall ensure high availability, right sizing, & no single point failure. Also, any PDS update shall be reflected immediately at DRS.
- h) Specified stock brokers shall obtain ISO certification as may be specified by stock exchanges from time to time in the area of IT and IT enabled infrastructure/processes of the stock brokers.
- i) The System Auditor, while covering the BCP – DR as a part of mandated annual System Audit, shall check the preparedness of the stock broker to shift its operations from PDC to DRS and also comment on documented results and observations on DR drills conducted by the stock broker.

**Financial Disincentives**

Stock exchanges shall put in place a structure of financial disincentives applicable to stock brokers for technical glitches occurring in their trading systems and non-compliance of the provisions made in this regard.

**Dissemination of Information**

The instances of Technical glitches occurred in the trading system of stock brokers along with Root Cause Analysis (RCA) on such glitches shall be disseminated by the stock exchanges on their websites.