Best practices applied by financial market infrastructures in their business continuity plans during the COVID-19 pandemic

1 Objective and background

The novel coronavirus (COVID-19) pandemic has prompted operators of financial market infrastructures (FMIs) around the world to (re)consider how to best plan for and respond to globally emerging and re-emerging epidemics.[1] Since the outbreak the Eurosystem has been collecting information on the preparedness of payment systems/schemes and their critical service providers for dealing with the pandemic[2] as well as their responses and resilience in terms of withstanding this shock (e.g. delays in payments caused by increases in traffic capacity, reduced availability of critical staff, etc.). Different approaches have been noted, ranging from more standardised step-by-step pandemic-specific business continuity plans to more flexible arrangements entailing ad hoc decision-making. Based on these observations, the Eurosystem has compiled a set of key market practices for pandemic crisis planning.

The collection of actions in this document aims (i) to provide support for the overseers in monitoring overseen entities, thus ensuring that the respective system operators are managing the crisis effectively and (ii) to identify what market practices related to pandemic crisis planning are or could be applied by payment systems/schemes in their business continuity plans in a flexible way, taking into account the specificities of each entity. As these market practices may also be valid for other FMIs, the remainder of the document refers to FMIs. The intention of this document is to serve as a reference guide for overseers and operators and does not represent prescriptive oversight expectations.

2 Managing a pandemic

The main aim during a pandemic is to ensure and maintain the safe and efficient operations of the FMI in its interplay with its participants, its providers, interlinked systems, and other relevant stakeholders. In particular, during a pandemic, the functioning of FMIs is critical to supporting the undisturbed flow of financial assets.

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[1] An epidemic is defined by the World Health Organization as an event in which a disease, either known or novel, experiences a sharp and active increase in the number of cases compared to what would normally be expected in a particular population in a given part of the world. The key nuance distinguishing a pandemic from an epidemic is its *global transmission* and *spread*. A pandemic is, from an epidemiological perspective, an epidemic that has gone global.

[2] This includes business continuity arrangements, performed tests, and identification of critical services.

While a pandemic may lead an operator to refocus its resources on core and critical activities, by no means can security be lowered. The latter is particularly relevant as targeted threats of fraud or cyberattacks may increase during crisis events to exploit vulnerabilities.

2.1 Setting up a Pandemic Management Team

In the event of a crisis like the COVID-19 pandemic, the information collected suggests that FMIs need to mobilise a dedicated team. Such a "Pandemic Management Team"[3] might be led and directed by Senior Executive Management with regular reporting to the Board, and could comprise the following key roles (depending on the specific set-up of the respective FMI):

- **Senior Executive Management**: leads and directs the Pandemic Management Plan.

- **Crisis Manager**: has the authority to instruct all stakeholders on each step during the crisis response and to liaise with ancillary systems and other FMIs.

- **Security Operating Centre representative**, **Chief Information Security Officer or equivalent**: detects and monitors abnormal cyber events.

- **Operations Manager**: ensures implementation of the Pandemic Management Plan and coordinates local operational activities.

- **Local/ business unit Manager**: represents each of the critical business/geographical areas affected by the pandemic and is in charge of prioritisation of business activities.

- **HR Manager**: ensures there are regular checks on the well-being of staff, handles staff shortage problems.

- **Internal Services/Facility Manager**: provides briefings on local impacts including concerns of employees, impact on internal/external stakeholders, travel restrictions and advice of local governments and ensures correct security levels are implemented.

The following functions are also important and could be represented in the Pandemic Management Team:

- **IT Department**: ensures staff can work in any appropriate environment (e.g. remotely).

- **Communications Department**: ensures internal and external communication.

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[3] Or "Crisis Management Team" if the FMI decides to integrate the function of the Pandemic Management Team into their Crisis Management Team.

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Other subject-expert teams could be mobilised, if required, during a pandemic and the structure of the team can evolve. The frequency of meetings could be decided on an ad hoc basis, depending on need. However, based on the observed behaviour of most FMIs during the peak of this pandemic, a daily interaction at least between the Crisis Manager and operational units is recommended.

2.2 Developing and implementing a Pandemic Management Plan

As part of the internal business continuity arrangements, the Pandemic Management Team, and other relevant subject matter experts, could be mobilised to implement the Pandemic Management Plan, or the Business Continuity Plan if it covers pandemic scenarios. The Pandemic Management Team might develop a plan, communicate it to their overseers and continuously check its applicability, updating it during the crisis if needed. The Pandemic Management Plan could touch upon strategic, operational and human resources issues and the following actions could be considered:

1. Integrating the Pandemic Management Plan with existing crisis management, emergency response, and continuity plans. Important to note, it is helpful if the actions set out in such plans are planned, prepared and tested regularly before being implemented. Since actions for a full pandemic scenario might not all have been tested, these could be supplemented by ad hoc actions (e.g. they could be complemented with higher bandwidth, additional software and hardware etc.).

2. Mapping the Pandemic Management Plan to the operational and cultural requirements of the organisation. The Eurosystem observed that FMIs need a clear understanding of their critical businesses, interdependencies and risk culture. As risks may evolve during a crisis, continuous risk identification, monitoring and mitigation are necessary.

3. Taking due note of the governmental and regulatory requirements and the unfolding of the pandemic. This includes:

    (a) validating the pandemic preparedness and management plans and procedures throughout the various phases and in line with governmental and regulatory actions;

    (b) working in coordination with governmental bodies and regulators to prepare for extraordinary events;

    (c) defining or integrating plans within an existing overall crisis management structure and process to guide rapid and coordinated decision-making at appropriate levels of the organisation;

    (d) developing the necessary policies and processes to support pandemic response efforts that may need to be made on an ad hoc basis;

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(e)   orchestrating and aligning all related incident response plans, including business continuity, IT adaptations, emergency response, supply chain, communications and human impact. Each of these is of paramount importance for ensuring the continuous functioning of FMIs; and

(f)   training personnel, ideally prior to a crisis but also during the crisis, including through crisis management exercises, to help ensure the effective execution of the plan as circumstances dictate.

2.3   Key elements for consideration in pandemic responses

The following considerations were observed in FMIs' responses to the COVID-19 pandemic and may therefore help in developing future pandemic plans:

- The effects of a pandemic concern a wide geographic area to a common level and do not respect borders.

- No individual or institution is safe from the adverse effect that might arise from it.

- Critical parts in the supply chain carried out by third party providers may not be available as planned – this may also include providers of providers.

- Pandemic events can lead to significant staff shortages or lower performance of staff for various reasons (e.g. taking care of relatives).

- It is important that pandemic plans are sufficiently flexible to address the wide range of possible situations and consequences that are difficult to forecast and may only become clear at short notice.

- National authorities may choose different actions that could impact the FMI, its service providers, participants, operational and data centres, headquarters, or other critical locations in different countries or regions.

- Legislation could be amended in periods of crisis and varying lockdown scenarios may be considered.

- At all stages and regardless of the measures taken to respond to the pandemic, the smooth functioning of FMIs is to be ensured (e.g. security requirements have to be observed, especially in remote working mode).

- Open communication and coordination with third parties is crucial to promote transparency and minimise reputational risks.

- Preparedness for crisis situations is key for ensuring the successful deployment of the response. A testing programme, comprising crisis management exercises in "normal times", is recommended to ensure that the Pandemic Management Plan is up to date and effective and can be triggered at the very start of a crisis.

- The return of the FMI to normal working practices might be gradual and take place over an extended period of time, and it is therefore important that recovery be pragmatic and structured, and an exit plan could be considered in advance.

3 The Pandemic response process

According to information that is publicly available, the World Health Organization (WHO) divides the advance of a pandemic outbreak into six phases or categories. These relate to how far the disease has spread (e.g. community level, cross-community level, globally) as well as to how it is being transmitted. The table below highlights appropriate recovery measures that were adopted by some of the overseen FMIs at different stages of the COVID-19 crisis. The table merely serves as a guideline; in implementing such measures, FMIs might also consider instructions from the national, state and local government and local health authorities (e.g. Centres for Disease Prevention and Control) as well as considering internal triggers (e.g. rate of absence, employees' productivity and sentiment, transportation availability, logistics, etc.), and availability of screening and treatment. Several of the overseen entities apply these phases (or a more condensed version) in their pandemic planning or implement them as part of their own pandemic phase scale. There is no one-size-fits-all approach, responses will not be uniform across the market and the strategies pursued will vary depending on the individual needs and operating environment.

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Table 1

WHO phase of pandemic alert	Phase 1	Phase 2	Phase 3
Description	"No viruses circulating among animals have been reported to cause infections in humans."	"An animal influenza virus circulating among domesticated or wild animals is known to have caused infection in humans and is therefore considered a potential pandemic threat."	"An animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks."
FMI pandemic response level	**Business as usual**	**Monitoring**	**Preparation**
Objective		Identify potential epidemic/pandemic warning and gather facts around the crisis on a continuous basis (i.e. When? Where? How? Why?).	Establish a Pandemic Management Team and initiate the collection, retention and analysis of evidence (i.e. assessing impacts and determining and executing action items).
Personnel		Establish recurring meetings and educate staff regarding pandemic threats.	Review critical functions list and Pandemic Management Team. Store personal protective equipment (PPE) for critical role employees, who would continue to access offices even during "full activation" phase. Ensure PPE quantity is enough to last for months. Review possible medical prevention actions, such as temperature checks and self-quarantine, and keep sick personnel at home. Test remote working capacity. Coordinate with local authorities to ensure staff needed on-site for operating "essential services" can commute to work even under restriction of movement (e.g. curfew).
Workspace and on-site work requirements			No restrictions. Prepare to increase working from home (e.g. technically ensure sufficient teleworking equipment and bandwidth as well as familiarise people with the usage of tools). Ensure highest security levels for remote working and availability of proper hard and software.
Communication		Ensure links with local communication teams in affected regions to assess the situation.	Place service statement on the website. Centralise all communications related to events with the different actors involved in the pandemic. Coordinate with local health officials and other responders to align on messaging. Prepare drafts for external communication, including press releases and Q&A.
Meetings and visitors			Restrict access for visitors from infected countries.
External meetings, training courses and travel		Travel recommendations may be provided. Private travel from impacted areas has to be reported.	Restrictions possible for highly impacted areas. Ask employees to report private travel from impacted areas. Provide employees with guidance.
Business aspects		Run analysis to identify interdependencies end-to-end and investigate mitigation measures.	Conduct additional stress tests to quantify the impact of potential failure scenarios. Use analysis to identify critical interdependencies end-to-end

			and prepare for mitigation measures. Prepare IT infrastructure for an expected increase in the likelihood of cyberattacks and phishing attacks. Identify non-core projects that could be deprioritised.
Awareness			Educate employees on essential hygiene practices (i.e. wash hands frequently, cover coughs). Put up posters as hand hygiene reminder. Promote usage of protective gear (e.g. masks) and social distancing and health checks.
Oversight response	Overseer shall in general request to see preparations of FMIs for pandemic events including testing of appropriate measures (e.g. remote working) to ensure that they meet security and operational requirements.	Overseers could encourage overseen entities to have a Pandemic Management Plan and pandemic communication strategies in place.	Discuss measures taken and planned by FMI operator (e.g. reprioritisations, cost cuttings), especially in light of possibly increased number of absent employees at all levels. Closely monitor whether the FMI has experienced an increase in fraud or cyberattacks (e.g. phishing, hacking) given possible increased vulnerabilities due to remote working or reduced operations.

Table 2

WHO phase of pandemic alert	Phase 4	Phase 5	Phase 6
Description	"Human-to-human transmission of an animal or human-animal influenza reassortant virus able to cause community-level outbreaks."	"Human-to-human spread of the virus into at least two countries in one WHO region."	"The pandemic phase is characterized by community level outbreaks in at least one other country in a different WHO region in addition to the criteria defined in Phase 5. Designation of this phase will indicate that a global pandemic is under way"
FMI pandemic response level	**Basic activation**	**Full activation**	**Full activation**
Objective	Identify and protect through monitoring and preventive measures. Activate first measures to support slow-down, reduce development of pandemic. Prepare for possible full activation. Develop and implement internal and external communication strategies and ensure an aligned response to stakeholders.	Activation of containment and remediation measures to prevent further damage and impact on business, employees, technology and property.	
Personnel	Implement medical prevention actions, such as temperature checks. Advise infected personnel to self-quarantine as per local authorities' advice. Activate the business continuity and recovery plans as appropriate.	Enforce stringent social distancing and implement a separation of floors for staff that have to come to the office. Reduce present staff to bare minimum. Handle expatriates' queries (e.g. relocation). Infected personnel shall quarantine as per local authorities' advice. Activate the business continuity and recovery plans, as appropriate. Train staff to serve as back-up on critical operational tasks; consider relocation of operational staff and other measures to ensure operational readiness. Encourage staff to rest and provide them with compensation time if they have worked overtime.	
Workspace and on-site work requirements	Apply more stringent office cleaning rules and clean more frequently. Promote working from home or split teams. Where split team work arrangements are not possible, consider block wise segregation of staff that has to work on-site in order to ensure the operation of critical functions.	Working from home shall be strongly advised or requested for all except groups that need office access. Consider closing offices not needed to support critical functions.	

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	Enhance work-from-home technology (e.g. provide software and hardware). Consider alternative transportation.	
Communication	Place service statement on the website and prepare a statement for the press office. Prepare communication for employees about working from home and send regular guidance and updates. Prepare a transparent communication protocol to inform all stakeholders on the Return to Office plans. Regular conversations with/reports to the overseer to update on current situation.	Publish office closure statement and announce possibly longer waiting time for calls in customer support. Activate media and public hotlines with key information. Consider a holding statement and/or formal news release. Provide regular monitoring summaries to key internal stakeholders. Send regular guidance and updates to all staff. Determine special communications requirements such as communications to end-customers, shareholders, etc. Regular conversations with/reports to the overseer to update on current situation.
Meetings and visitors	Limit face-to-face meetings (i.e. consider phone/web meetings where possible). Activate tracing of recently visited countries.	No face-to-face meetings and no external visitors are to be allowed on-site. Ensure security of alternative communication means and locations.
External meetings, training courses and travel	Suspend business travel for highly impacted areas. Managers have to approve travel requests to highly impacted areas.	Full travel restrictions (except for those traveling back to their home country). Replace events and training with online events or webinars.
Business aspects	Evaluate the current operational impact of the outbreak. If critical service providers are adversely affected by the crisis, take measures to mitigate risks. Obtain authorities' exemptions from working remotely for staff critical for operations. Closely monitor and analyse changes in values/volumes/turnover that result from the high market volatility. Build in extra capacity where needed. Ensure the ability to accommodate possible increases or substantial decreases in transaction traffic. Monitor viability of participants and services of providers, consider back-ups for the latter. In case of anomalies such as incidents, inform participants as early as possible, and as soon as permitted by applicable law, to avoid rumours in the financial market. Consider the possibility of different crisis events coinciding and prepare for those. Increase remote access monitoring and fraud monitoring for anomalies. Inform the overseer of any anomalies early on.	
Awareness	Increase cyber awareness during this phase. Ensure awareness of implications of the pandemic for staff. Social distancing is required by authorities. Employees returning from highly impacted regions are required to self-isolate. Ensure that workstations of employees reported ill are cleaned thoroughly.	
Oversight response	Regular discussions with the overseen entities shall take place (at least on a weekly basis) to update on market developments, operational risks, financial and liquidity risks, supply chain risks (risks related to critical service providers/suppliers), issues related to clients/participants and employee absence, issues related to service provision and risks for end users. Adjust focus items according to crisis developments. Overseers could request more granular data on developments in values and volumes, as well as returns/chargebacks and fraud on a regular basis (i.e. weekly) to understand market developments. Gather information on on-site/remote work requirements (e.g. split teams, employees having to be on-site, back-up locations). Check whether the FMI has conducted additional stress tests to assess the impact of a possible failure scenario. Assess systemic risks for safety and efficiency of the payment system, including the implications for end users. Encourage dialogue and information sharing.	

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Table 3

WHO phase of pandemic alert	Post peak period	Post pandemic period
Description	"Pandemic disease levels in most countries with adequate surveillance will have dropped below peak observed levels. The post-peak period signifies that pandemic activity appears to be decreasing; however, it is uncertain if additional waves will occur and countries will need to be prepared for a second wave."	"Influenza disease activity will have returned to levels normally seen for seasonal influenza. It is expected that the pandemic virus will behave as a seasonal influenza A virus."
FMI pandemic response level	**Recovery**	**Closure & lessons learned**
Objective	Depending on decreasing level of the pandemic some measures taken in previous phase may be slowly loosened (but with caution). At the same time, the possibility of subsequent waves is to be considered and prepared for.	Maintain surveillance and update pandemic preparedness and response plans accordingly. Identify lessons learned and what can be improved in the future. Explore new ways of working (e.g. increase teleworking, leverage technology, reduce physical meetings).
Personnel	Social distancing is still to be advised and infected personnel are to be put into quarantine as per local authorities' advice.	A return to business as usual is possible but it must first be ensured that the pandemic no longer poses a risk to employees, property and technology. Lessons learned are discussed with the aim of ensuring that future incidents are managed more effectively.
Workspace and on-site work requirements	Working from home is still advised but depending on recovery level of the pandemic, staff may be able to return to the office, possibly in split teams. If necessary, implement social distancing measures in the workplace (e.g. in elevators, entry areas, gathering points; have fewer people in offices, regulate common areas, work shifts). Measures for disinfection and cleaning, protective gear (e.g. masks, gloves, physical barriers, hygiene stations). Preventive and screening measures (e.g. employee self-attestations, health assessments, temperature scans). Verify that the new measures put in place meet the needs of all employees including those of people with special needs.	
Communication	Regular conversations with/reports to the overseer to update on current situation. Prepare staff through adequate communication.	Review the communications strategy. What can be done to ensure communication flows more promptly in the future? Review pre-prepared communication materials and update accordingly. Are there any additional letters etc. that can be drafted?
Meetings and visitors	Consider restricting face-to-face meetings and external visitors on-site. Consider slowly lifting.	
External meetings, training courses and travel	Full travel restrictions (except for those traveling back to their home country) lifted gradually. Replace events and training with online events or webinars.	
Business aspects	Assess and evaluate impact of pandemic on firm and its stakeholders. Possibly consider measures to make up potential P&L impacts.	Assess and invest in further technology to improve reactions and reaction time (e.g. AI).
Awareness	Keep alert level high to avoid creation of vulnerabilities. Social distancing is required. Employees returning from highly impacted regions are required to self-isolate. Ensure that workstations of employees reported ill are cleaned thoroughly.	Ensure regular awareness programmes. Ensure compensation for staff for extraordinary pressure and burden.
Oversight response	Overseers to discuss with FMIs return to normal in phases and in times of uncertainty and possible return to phases 4 to 6 at a time in the future. Collection of and addressing of lessons learned.	Review and update oversight policies, standards and procedures based on the new scenario.

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