Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

Cross Industry Guidance on Operational Resilience

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A. Introduction

In keeping with the Central Bank of Ireland's (the Central Bank's) strategic commitment of *strengthening our ability to maintain the resilience of the financial system*[1], it is important to continue to address existing vulnerabilities and weaknesses, and mitigate risks in the financial system to ensure that it can better withstand future shocks and crises and to limit the impact of such events. The Cross Industry Guidance on Operational Resilience (the Guidance) was consulted on and responses were received from a wide number of industry bodies and regulated entities. The feedback received was considered when finalising the Guidance and responses to the feedback are detailed in the accompanying feedback statement. The objective of this Guidance is to communicate to industry how to prepare for, respond to, recover and learn from an operational disruption that affects the delivery of critical or important business services.

The financial services industry operates in an increasingly complex and interconnected environment, facilitating the provision of services locally and internationally. In many cases, firms rely on international outsourced service providers (OSPs) to support their operations. Internationally, financial services firms have experienced challenges from various disruptive events including technology failures, cyber incidents, the COVID-19 pandemic and natural disasters. Firms will have established risk management processes and governance arrangements underpinned by sectoral legislation, regulatory requirements and guidance. However, recognising that not all potential hazards can be prevented, the Central Bank believes that a flexible, pragmatic and proportionate approach to operational resilience will strengthen the industry's ability to respond to and recover from such events. The Guidance aims to enhance operational resilience and recognise the interconnections and interdependencies, within the financial system, that result from the complex and dynamic environment in which firms operate.

More specifically, the purpose of the Guidance is to:

- Communicate to the boards and senior management of Regulated Financial Service Providers (RFSPs), the Central Bank's expectations with respect to the design and management of operational resilience;
- Emphasise board and senior management responsibilities when considering operational resilience as part of their risk management and investment decisions; and

[1] https://www.centralbank.ie/docs/default-source/publications/corporate-reports/strategic-plan/our-strategy/central-bank-of-ireland-our-strategy.pdf?sfvrsn=4

- Require that the boards and senior management take appropriate action to ensure that their operational resilience frameworks are well designed, are operating effectively, and are sufficiently robust. This should ensure that the risks to the firm's operational continuity do not transmit into the financial markets and that the interests of the customers and market participants are safeguarded during business disruptions.

The Guidance does not purport to address, in detail, every aspect of a firm's legal and regulatory obligations relating to operational resilience and should be read in conjunction with the relevant legislation, regulations, and other guidance or standards issued by the relevant industry bodies, supervisory authorities or the Central Bank. The Guidance does not supersede existing sectoral legislation, regulations, or guidance but is intended to complement and support them. The Central Bank may update or amend the Guidance from time to time, in light of future regulatory requirements

B. Definitions

Term	Definition
Operational Resilience	The ability of a firm, and the financial services sector as a whole, to identify and prepare for, respond and adapt to, recover and learn from an operational disruption.
Business Service	A service that a firm provides to an external end user. Business services deliver a specific outcome or service to an identifiable user and should be distinguished from business lines or functions, which are a collection of services and activities.
Critical or Important Business Service	A service provided by a firm to an external end user or market participant where a disruption to the provision of the service could cause material customer detriment; harm market integrity; compromise policyholder protection; or threaten a firm's viability, safety and soundness, or financial stability.
Outsourced Service Provider	A third-party entity that is undertaking an outsourced process, service or activity, or parts thereof, under an outsourcing arrangement. This refers to both external third party service providers and intra/inter group service providers.
Impact Tolerance	Impact tolerances determine the maximum acceptable level of disruption to a critical or important business service.

Term	Definition
Mapping	Mapping is the process of identifying, documenting and understanding the chain of activities involved in delivering critical or important business services. This incorporates the identification of all interdependencies and interconnections including people, processes, information, technology, facilities, and third parties service providers.
Scenario Testing	Scenario testing is the assessment of a firm's ability to remain within its impact tolerance for each of its critical or important business services in the event of a severe, but plausible disruption of its operations.
Board	It is acknowledged that some smaller, less complex firms may not have a board of directors. In these cases, where the term ‘board’ is used, it is intended to address the relevant management bodies or structures of these regulated firms.

C. Concept of Operational Resilience

The Central Bank considers operational resilience to be the ability of a firm, and the financial services sector as a whole, to identify and prepare for, respond and adapt to, recover and learn from an operational disruption.

An operationally resilient firm is able to recover its critical or important business services from a significant unplanned disruption, while minimising impact and protecting its customers and the integrity of the financial system.

The first step in becoming operationally resilient is accepting that disruptive events will occur, and that these events will need to be managed effectively. A firm needs to have forward-looking plans that can be applied across a range of potential disruptions. A firm should proactively prepare to withstand and adapt to disruptions that will inevitably occur.

The Central Bank sees the management of a firm’s operational risk and resilience as an aligned approach that is integrated into the firm’s governance structures. Operational resilience is an evolution of operational risk and business continuity management and, as such, should be aligned with existing or developing frameworks in these areas.

Operational risk management is focused on minimising risk, through development of controls that reduce the impact and probability of an operational event occurring. Operational resilience goes beyond this and promotes a deeper understanding of a firm's business and all the steps/activities involved in delivering its critical or important business services. It focuses on building capabilities to deal with risk events when they materialise, rather than purely focusing on building defences to prevent risk events from occurring.

Continuity of critical or important business services is an essential component of being operationally resilient, although operational resilience is much wider than just continuity and recovery. Operational resilience requires coordination between risk management, business continuity management (BCM), incident management, third party risk management, Information Communication Technology (ICT) and cyber risk, and recovery and resolution planning.

A firm's operational resilience strategy should be cause agnostic and flexible enough to adapt to different types of disruption. Resilience is not about what happens to a firm, but rather, how a firms is able to withstand and respond to an incident when it does occur.

D. Value of Operational Resilience

An operational disruption can threaten the viability of individual firms, impact customers and other market participants, and ultimately affect financial stability. A firm needs to consider all of these risks when assessing the appropriate levels of resilience of the business services it provides. Operational resilience benefits the firm itself by strengthening its ability to remain a viable ongoing concern. At both an individual firm level and a sectoral level, operational resilience is critical to supporting services to customers and supporting the wider economy.

A resilient financial system is one that can absorb shocks rather than contribute to them. The financial system needs an approach to operational risk and resilience that includes preventative measures and the capabilities – in terms of people, processes, technology, and organisational culture – to recover and adapt when disruptions occur.

The increased dependence on technology, coupled with an accelerated pace of change has led to a rise in operational incidents across all sectors in recent years. This has brought to the fore, the discussion around the need for firms to become more operationally resilient. Operational disruptions can result from man-made causes such as Information Technology

(IT) threats (e.g. cyber-attacks, change management issues), terrorist threats, civil disturbances, insider threats (e.g. internal arbitrage, insider trading), third party dependencies or natural causes (e.g. storms, pandemics).

The COVID-19 pandemic has put firms' operational resilience to the test and highlighted the importance of being more operationally resilient. The protracted nature of the pandemic has altered the way firms operate and has increased demands on technology. This has included widespread remote working, with staff undertaking activities not previously considered suitable to be conducted outside of the office environment. Significant demands are being placed on IT infrastructure and capabilities to facilitate this new way of working.

In addition, changing customer behaviour is putting pressure on firms to enhance their digital offerings and has placed a different type of stress on how firms operate.

Operational resilience is an opportunity to improve decision-making and value creation by targeting investment into the services that are critical or important to a firm and the economy, and focus on services that could have the most material impact if unavailable.

E. International Alignment

The operational resilience landscape is evolving with new standards and consultations being proposed and/or published across multiple jurisdictions. In developing the Guidelines, the Central Bank engaged with our international regulatory colleagues and reviewed the more significant and innovative regulatory proposals across the European Union (EU), the UK, Asia, Australia, and the USA.

The more developed principles include:

- the Basel Committee on Banking Supervision's (BCBS) '*Principles for operational resilience*'[2] ;
- the joint Bank of England (BoE), Prudential Regulatory Authority (PRA) and the Financial Conduct Authority (FCA) policy statement on their approach to operational resilience across the financial services sector[3]; and

[2] https://www.bis.org/bcbs/publ/d516.pdf

[3] https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/policy-statement/2021/march/ps621.pdf?la=en&hash=A15AE3F7E18CA731ACD30B34DF3A5EA487A9FC11

- Furthermore, in September 2020, the European Commission published its proposed legislation in digital operational resilience, the *'Digital Operational Resilience Act'* (DORA).[4]

While aspects of the various policy approaches may differ across jurisdictions, global regulators are aligned on the fundamentals and core principles of operational resilience. They remain focused on ensuring that the risks to a firm's operational continuity, due to the firm's operational complexity and interconnectedness with the broader financial ecosystem, are not transmitted across the financial system and that the interests of the customers and market participants are safeguarded during business disruptions.

The US Federal Reserve Board (FRB), the UK's PRA, and the European Central Bank (ECB) have agreed coordinated statements on operational resilience, which have been issued to all Global Systemically Important Banks (GSIBs), and non-GSIBs. In the statement, the authorities commit to actively work together to refine the approaches to operational resilience to ensure that they comprehensively consider risks as they evolve.

Operational resilience for the financial services sector does not, at present, benefit from one clear, detailed international standard. The Central Bank, in developing this Guidance, has sought to develop a holistic approach that aligns with the prominent international thinking and that will allow firms with a presence in more than one jurisdiction the flexibility to develop an operational resilience framework that can be applicable across all operations. The Central Bank will continue to monitor international developments after the issuance of this Guidance and further enhance operational resilience across the financial services sector.

F. Scope of Application

This Guidance applies to all regulated financial service providers, as defined in Section 2 of the Central Bank Act 1942[5]. This recognises the importance of operational resilience for individual firms, customers and the wider economy. The Guidance is intentionally not prescriptive or at a granular level of detail to allow for a pragmatic application. As such, it is designed to be flexible and can be applied by firms in a proportionate manner based on the nature, scale and complexity of their business.

[4] https://ec.europa.eu/transparency/regdoc/rep/1/2020/EN/COM-2020-595-F1-EN-MAIN-PART-1.PDF

[5] https://www.centralbank.ie/docs/default-source/publications/lrc-legislation/ftr-1-5-en_act_1942_0022.pdf?sfvrsn=6

G. Implementation

It is the Central Bank's expectation that the boards and senior management of RFSPs review the Guidance and adopt appropriate measures to strengthen and improve their operational resilience frameworks and their effective management of operational resilience in line with this Guidance. Regulated firms should be able to demonstrate that they have applied the Guidelines within an appropriate timeframe.

The Central Bank considers that an 'appropriate timeframe' will depend on a range of factors including nature, scale and complexity of a firm's business and the firm's overall impact on customers and the wider economy. We expect firms to be actively and promptly addressing operational resilience vulnerabilities and be in a position to evidence actions/plans to apply the Guidance at the latest within two years of its being issued.

H. Supervisory Approach

The Central Bank's mission is to serve the public interest by safeguarding monetary and financial stability and by working to ensure that the financial system operates in the best interests of consumers and the wider economy. Our supervisory objectives are to protect consumers and financial stability by seeking to ensure that RFSPs:

- Act in the best interests of consumers;
- Are financially sound and safely managed with sufficient financial resources;
- Are governed and controlled appropriately, with clear and embedded risk appetites, which drive an effective culture; and
- Have frameworks in place to ensure failed or failing providers go through orderly resolution.

The Guidance outlined in Schedule 1 seeks to enhance the Central Bank's regulatory framework by focusing firms' attention on their most critical or important business services, which, if disrupted, could cause prudential or consumer harm or have an impact on overall financial stability.

The Central Bank expects boards and senior management of RFSPs to review the Guidance and adopt appropriate measures to strengthen and improve their governance and risk frameworks and their effective management of operational resilience. A RFSP should be able to demonstrate that it has considered the supervisory expectations set out in this Guidance and developed a plan to meet the Guidance.

The Central Bank will utilise risk-based supervisory engagement to assess the core principles of operational resilience in firms and drive to enhance and mature operational resilience across the financial system. This will include an assessment of:

- Board ownership and accountability for the firm's operational resilience strategy and framework and the firm's ability to demonstrate a keen understanding of its critical or important business services. The Central Bank will look for evidence that the board is seeking the required information to enable it to understand the risk and resilience profile of the firm and make targeted investment decisions to support on-going resilience efforts;
- The firm's understanding of the delivery of its own critical or important business services, the people, the activities, information, technology, and third parties that support that delivery, and the criticality of those services to the wider financial system;
- A firm's ability to determine appropriate impact tolerances for its critical or important business services and that they test their ability to remain within those impact tolerances under severe but plausible scenarios; and
- The firm's consideration of third parties in its response and recovery processes and that they are aligned and tested for effectiveness.

As part of the risk-based supervisory approach, the Central Bank will increase its engagement with firms on their levels of operational resilience. The Central Bank issued an Operational Resilience Maturity Assessment to a large cohort of firms across the financial system in advance of the consultation on this Guidance. The objective of the assessment was to develop an understanding of the common issues faced by firms and to provide an insight into firms' resilience capabilities. The responses to the assessment were considered when developing this Guidance.

The Central Bank will keep its regulatory framework and supervisory approach to operational resilience under review, based on our regulatory and supervisory experience and international developments. We are conscious that the regulatory framework within the EU is developing further with the proposed introduction of DORA. We believe that the proposed Guidance is in line with international best practice and compatible with/complementary to DORA and the *'Directive on Security of Network and Information Systems'* (NIS2). Our aim is to align and update the intended outcomes of our supervisory approach with the operational resilience policy developments as they evolve.

Schedule 1

Operational Resilience Guidelines

Introduction

The overarching principle of operational resilience is the acceptance that disruptions will occur and that firms need to be prepared to respond accordingly and have measures in place to limit the impacts. A firm needs to ensure that they have prepared effectively, and have the flexibility to withstand, absorb, respond, adapt, recover and learn from disruptions with minimal impact on their critical or important business services.

Approaching operational resilience through a business service lens encourages a firm to prioritise what is critical or important to their firm and the financial system, and understand the interconnections and interdependencies involved in delivering those services. Ultimately, this will allow firms to determine the wider impact a disruption will have on the services that it provides.

A firm should take ownership of its own operational resilience and prioritise based on the potential impacts to itself, its customers and financial stability.

The core principles of any operational resilience framework are:

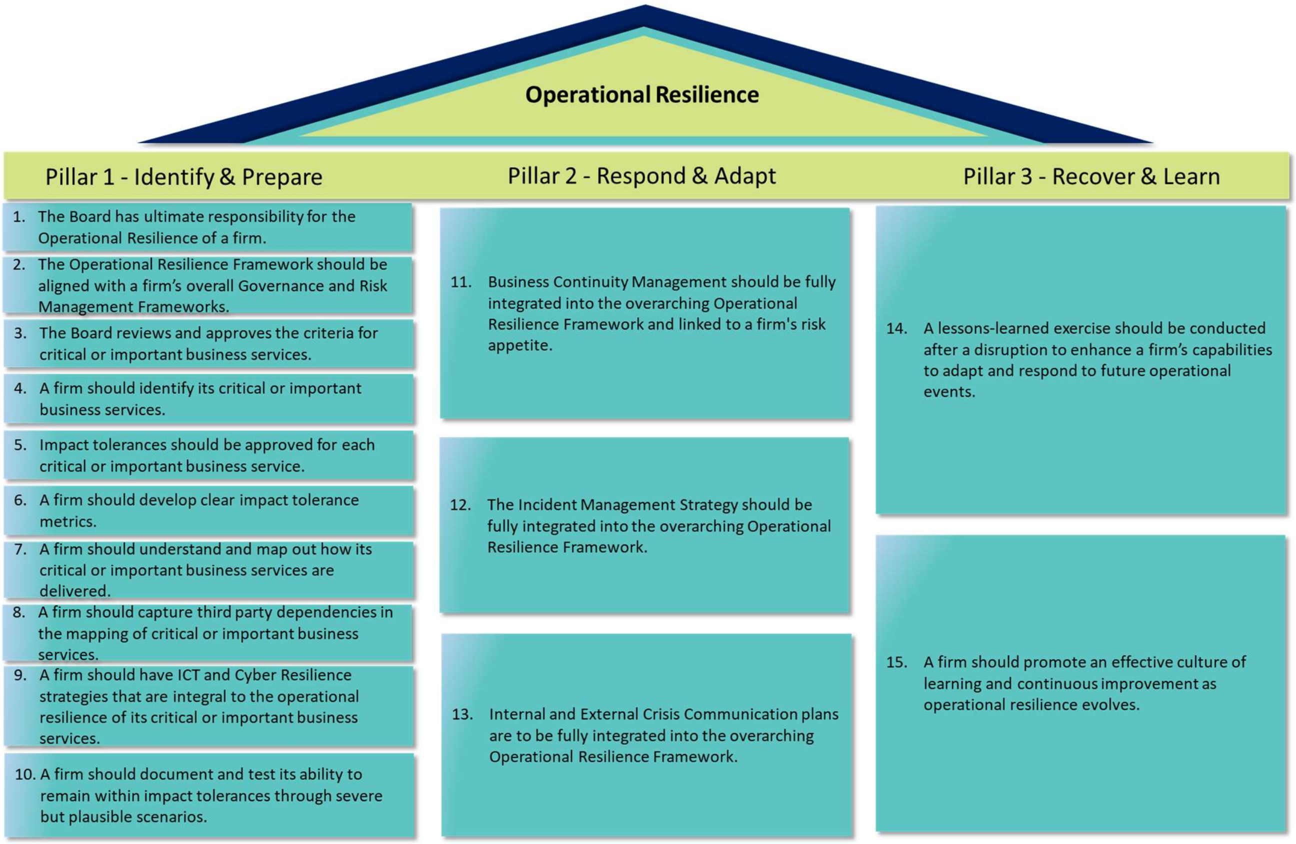
- Board and senior management ownership of the Operational Resilience Framework;
- The identification of critical or important business services and all activities, people, processes, information, technologies and third parties involved in the delivery of these services;
- The setting of impact tolerances for each of these identified services, and the testing of the firm's ability to stay within those impact tolerances during a severe but plausible operational disruption scenario; and
- The continuous review of how a firm responded and adapted to disruptive or potentially disruptive events so that lessons learned can be incorporated into operational improvements to continually enhance the operational resilience of the firm.

As such, the Central Bank Guidance is built around three pillars of Operational Resilience:

- Identify and Prepare;
- Respond and Adapt;
- Recover and Learn.

These three pillars support a holistic approach to the management of operational resilience and related risks and create a feedback loop that fosters the perpetual embedding of lessons learned into a firm's preparation for operational disruptions.

Three Pillars of Operational Resilience



Operational Resilience

Pillar 1 - Identify & Prepare

1. The Board has ultimate responsibility for the Operational Resilience of a firm.
2. The Operational Resilience Framework should be aligned with a firm's overall Governance and Risk Management Frameworks.
3. The Board reviews and approves the criteria for critical or important business services.
4. A firm should identify its critical or important business services.
5. Impact tolerances should be approved for each critical or important business service.
6. A firm should develop clear impact tolerance metrics.
7. A firm should understand and map out how its critical or important business services are delivered.
8. A firm should capture third party dependencies in the mapping of critical or important business services.
9. A firm should have ICT and Cyber Resilience strategies that are integral to the operational resilience of its critical or important business services.
10. A firm should document and test its ability to remain within impact tolerances through severe but plausible scenarios.

Pillar 2 - Respond & Adapt

11. Business Continuity Management should be fully integrated into the overarching Operational Resilience Framework and linked to a firm's risk appetite.
12. The Incident Management Strategy should be fully integrated into the overarching Operational Resilience Framework.
13. Internal and External Crisis Communication plans are to be fully integrated into the overarching Operational Resilience Framework.

Pillar 3 - Recover & Learn

14. A lessons-learned exercise should be conducted after a disruption to enhance a firm's capabilities to adapt and respond to future operational events.
15. A firm should promote an effective culture of learning and continuous improvement as operational resilience evolves.

Pillar 1: Identify and Prepare

1 Governance

Guideline 1: The Board has ultimate responsibility for the Operational Resilience of a firm.

A firm's board has the ultimate responsibility for the approval and oversight of the firm's Operational Resilience Framework. Leadership from the top down should ensure that resilience is intrinsically built into a firm's strategic decisions and allow boards to prioritise activities and target investment towards making critical or important business services more resilient. A top-down approach to operational resilience creates a uniform process flow and enhances clarity on the responsibilities throughout the organisation to conduct business within approved impact tolerances.

All board members should have sufficient understanding to provide effective oversight and challenge of the firm's operational resilience. Senior management should be given the financial, technical and other resources needed in order to support the firm's overall operational resilience efforts under the oversight of the board.

The board and senior management should have accurate and adequate oversight of resilience activity, trends and remediation measures, which allows them to make the business decisions regarding investments and risk exposure. A firm should provide formal operational resilience management information (MI) to its board on a regular basis and in the event of a disruption. The operational resilience MI should be embedded into the existing reporting structure making it adequate, meaningful and timely. Escalation routes should be established for when vulnerabilities are identified or when an unexpected disruption occurs.

The board has responsibility for the approval of the operational resilience framework and approval of the critical or important business services, impact tolerances, business service maps, scenario testing to ascertain the firm's ability to remain within impact tolerances, and communications plans. The board should review the components of the Operational Resilience Framework at least annually to confirm that there are no undetected developing weaknesses.

The board should oversee senior management assessments of the components of the Operational Resilience Framework. The board is responsible for review, challenge and approval of the assessments of its critical or important business services, impact tolerances, business service maps and scenario analysis annually and/or as part of the lessons learned exercise after a disruption has occurred.

The actions a firm takes to improve operational resilience, including through its investment decisions, should be prioritised based on factors such as the potential impact of disruptions, time criticality and progress required to be able to remain within impact tolerances.

Guideline 2: The Operational Resilience Framework should be aligned with a firm's overall Governance and Risk Management Frameworks.

A firm should utilise its existing governance and risk management structures when implementing an effective Operational Resilience Framework. A firm will need to ensure that its existing governance frameworks and committee structures include responsibilities with respect to operational resilience.

The Central Bank views the management of a firm's operational risk and resilience as a unified objective, enacted through aligned frameworks or one holistic framework. Operational resilience is an evolution of operational risk and provides a holistic firm-wide approach to managing disruptions to critical or important business services. A firm should develop a documented Operational Resilience Framework aligned with the Operational Risk and Business Continuity Frameworks, or include these risk areas in one holistic framework.

Operational resilience should be strategically implemented across the business by senior management throughout the Operations, Risk and Finance pillars. As operational resilience draws from elements of business continuity, third party risk management, ICT & cyber risk management, incident management, and wider aspects of operational risk management, a holistic approach is essential if a firm is to enhance the resilience of its business services, regardless of the type of disruption. The three pillar approach to operational resilience aligns all of these elements into an effective Operational Resilience Framework.

2 Identification of Critical or Important Business Service

<u>Guideline 3:</u> The Board reviews and approves the criteria for critical or important business services.

The starting point for any firm in enhancing its operational resilience is to set the criteria for defining its critical or important business services. It is the responsibility of the board to approve clearly defined and documented criteria to determine how business services are classified as critical or important.

The criteria should enable a firm to identify its critical or important business services and prioritise them in the event of a disruption. This should be achieved by considering the risk a disruption poses to customers, to the firm's viability, safety and soundness, and to overall financial stability.

The criteria for the identification of critical or important business services should be reviewed and approved by the board annually or at the time of implementing material changes to the business that would involve additional critical or important business services.

<u>Guideline 4:</u> A firm should identify its critical or important business services.

Once a firm has set its criteria, the firm should identify its critical or important business services. Traditionally, firms have focused on protecting individual systems, processes and functions rather than looking at the complete end-to-end set of activities required to deliver a particular business service. Operational resilience challenges a firm to rethink how it views its operations and put in place measures to protect its most critical business services and ensure the continued delivery of those services to external end users or market participants throughout a disruption.

A firm should leverage its existing business functions' knowledge when identifying and prioritising their critical or important business services. As critical or important business services will differ between individual firms and sectors, firms should take an outcomes based approach to identification of these services. Ultimately, it will be the responsibility of the board to review and approve all business services classified as 'critical' or 'important' on at least an annual basis.

Critical or important business services should be identified to enable a firm to clearly determine impact tolerances based on maximum acceptable levels of disruption, perform mapping of the end-to-end delivery of the business service, including any dependence on third parties, and test based on severe but plausible scenarios.

Furthermore, a firm should consider whether the number of critical or important business services is proportionate to the nature, scale and complexity of its business.

3 Impact Tolerances

Guideline 5: Impact tolerances should be approved for each critical or important business service.

A firm should develop impact tolerances for each of its critical or important business services on the assumption that disruptive events will happen. The purpose of an impact tolerance is to determine the maximum acceptable level of disruption to a critical or important business service.

Impact tolerances should be set at the point at which disruption to the firm's business service would pose, or have the potential to pose, a risk to the firm's viability, safety and soundness, to financial stability or could cause material detriment to customers.

Impact tolerances should be used as a planning tool for a firm rather than as a tool to measure regulatory compliance. Impact tolerances will enable a firm to understand its level of operational resilience in the event of an unplanned disruption. Impact tolerances are designed to determine the schedule by which a firm should be able to restore the delivery of critical or important business service after a disruption has occurred.

Impact tolerances need to be tested against severe but plausible scenarios to determine their appropriateness – i.e. to determine whether the firm is able to stay within the defined impact tolerances during a disruption.

A board should review and approve impact tolerances at least annually or when a disruption occurs to determine if the original approved impact tolerances are still fit for purpose.

While impact tolerances should be aligned to a firm's risk appetite, impact tolerances are a separate and distinct tolerance measurement. Risk appetite focuses on the impact and probability of a risk event occurring and is typically set with reference to a firm's strategic goals. Risk appetite is *'the aggregate level and types of risk an organisation is willing to assume within its risk capacity to achieve its strategic objectives and business plan'*.[6]

Impact tolerances assume that the risk event has already crystallised and, therefore, the probability element of risk appetite is removed. When a disruption has impacted a critical or important business service the risk appetite will have already been breached.

Impact tolerances are a standard that a firm should be able to remain within and which the board and senior management should use to drive improvements to their operational resilience. Firms have the flexibility to determine impact tolerances for their critical or important business services, including leveraging any appropriate pre-determined and approved criteria as part of other practices. For example, this may include processes used for Business Impact Analysis (BIA), Recovery Time Objectives (RTOs), Recovery Point Objectives (RPOs) and Maximum Tolerable Outage (MTO) where these metrics that measure disruption of single points of failure feed into the delivery of a critical business service.

Guideline 6: A firm should develop clear impact tolerance metrics.

A firm should set at least one impact tolerance metric for each of its critical or important business services. Impact tolerance metrics need to be clear and measurable, and can be both qualitative and quantitative. To achieve this, they should reference specific outcomes and measurements. A firm should be able to determine the outcome if the impact tolerances are exceeded.

At a minimum, there should be a time-based metric indicating the maximum acceptable duration a critical or important business service can withstand a disruption. A time-based metric ensures that a firm focuses its response to a disruption on the continuity of its critical or important business service.

To be prepared to withstand more than one type of disruption a firm should consider having additional impact tolerance metrics, which for example, could be based upon:

- the maximum tolerable number of customers effected by a disruption;
- the maximum number of transactions affected by a disruption; or
- the maximum value of transactions impacted.

[6] https://www.fsb.org/wp-content/uploads/r_130717.pdf

This is not an exhaustive list, and firms should set and approve impact tolerance metrics based on their specific critical or important business services taking into account the nature, scale and complexity of the firm.

4 Mapping of Interconnections and Interdependencies

Guideline 7: A firm should understand and map out how its critical or important business services are delivered.

To ensure that a critical or important business service can remain within its impact tolerance(s), a firm needs to understand how the services are delivered and how each service can be disrupted. A firm will need to understand the chain of activities that contribute to the delivery of each of its critical or important business services, in order to be able to identify any critical or single points of failure, dependencies, or key vulnerabilities.

A firm should identify, document and map the necessary people, processes, information, technology, facilities, and third parties service providers required to deliver each of its critical or important business services. This exercise should be undertaken collaboratively across the business to ensure comprehensive mapping.

Mapping should be conducted at a level of detail that enables the identification of the resources that contribute to the delivery of each stage of the service, and their importance. A firm should understand how these resources blend and work in combination to deliver the critical or important business service. A firm should identify which business units own each resource and from where it is provided.

The approach and level of granularity of mapping should be sufficient for a firm to identify vulnerabilities and key dependencies, and to support testing of its ability to stay within the assigned impact tolerances for each critical or important business service.

Comprehensive mapping of a service will enable a firm to pinpoint vulnerabilities in how critical or important business services are being delivered and determine where recovery and resolution plans can be leveraged. Examples of such vulnerabilities could include concentration risk, single points of failure, key man risk, and inadequate substitutability of resources.

Guideline 8: A firm should capture third party dependencies in the mapping of critical or important business services.

The increasing complexity of firms' operating models and the increased reliance on third parties for the delivery of key elements of their critical or important business services can often result in a firm being dependent on a multitude of resources, across many different third party providers, including other RFSPs, for the delivery of critical or important business services.

A complex network of external interconnections and interdependencies increases the risks related to the use of third parties. If a disruptive event occurs anywhere within this network of interconnected activities, the firm can be impacted, even if the event did not occur within its own systems. A complicated network of outsourced activities reduces visibility over potential vulnerabilities in the delivery of critical or important business services. This can hamper a firm in preparing for an operational disruption and therefore, capturing these dependencies as part of the mapping process will be a key tool in managing operational disruptions.

Boards and senior management should be cognisant of the fact that when entering into outsourcing arrangements they are creating a dependency on a third party for the resilience of their firm. A firm should manage its dependencies on relationships, including those of third parties, involved in the delivery of critical or important business services. Dependencies should be clearly identified and detailed in the mapping of critical or important business services. A firm's critical or important business services should be able to remain within impact tolerances, including when they rely on OSPs. A firm should undertake due diligence in respect of its OSPs prior to entering into an outsourcing arrangement, to ensure that third party arrangements have appropriate operational resilience conditions that enable the firm to remain within its impact tolerances.

A firm should ensure that legally binding written agreements are in place with third parties that detail how the critical or important services will be maintained during a disruption and an exit strategy if/when the service cannot be maintained. A firm should also take into account the geographical location of the third party, which may impact on the provision of service depending on the nature or location of the event.

A firm should also be aware of any chain outsourcing that exists and should manage and monitor accordingly. Chain outsourcing can complicate the effective management of the critical or important business service and a firm should have clear written agreements in place regarding any chain outsourcing that may impact the provision of a critical or important business service.

This Guideline should be read in conjunction with the Central Bank's *"Cross Industry Guidance on Outsourcing"*[7] and the forthcoming DORA in relation to ICT OSPs.

5 ICT and Cyber Resilience

Guideline 9: A firm should have ICT and Cyber Resilience strategies that are integral to the operational resilience of its critical or important business services.

Technology and information are key drivers and enablers of most firms' business models and, as such, the resilience of the technology infrastructure and the protection of the information assets should be integral to any operational resilience framework.

A firm should ensure that its information and communication technology is robust and resilient and is subject to protection, detection, response and recovery programmes in line with industry best practice. As part of the mapping process, a firm should identify where technology is part of the delivery of a critical or important business service. A firm needs to take the necessary steps outlined in Guideline 7 and Guideline 8 where IT systems or technology resources are provided by a third party.

The identified systems should be regularly tested as part of IT security, cyber-security and resilience testing, using severe but plausible scenarios, to ensure continuity of critical or important business services during severe disruptions.

On-going threat intelligence and situational awareness programmes should feed into the operational resilience programme and align with the firm's IT risk management, IT security management, IT incident management and IT continuity/disaster recovery programmes.

[7] https://www.centralbank.ie/docs/default-source/publications/consultation-papers/cp138/draft-cross-industry-guidance-on-outsourcing.pdf

This guideline should be read in conjunction with the Central Bank's '*Cross Industry Guidance in respect of Technology and Cybersecurity Risks'*[8], any relevant European Supervisory Authority Guidance, including the EBA Guidelines for ICT and Security Risk Management[9], the EIOPA Guidelines for ICT Security and Governance[10], and the forthcoming DORA and NIS2.

6 Scenario Testing

Guideline 10: A firm should document and test its ability to remain within impact tolerances through severe but plausible scenarios.

A firm should test its ability to remain within its impact tolerances, for every critical or important business service, through severe but plausible scenarios. Testing can only be effective once clear and detailed maps have been developed for critical or important business services.

In carrying out the scenario testing a firm should identify an appropriate range of adverse circumstances of varying nature, severity and duration relevant to its business and risk profile and consider the risks to delivery of the firm's critical or important business services in those circumstances. Mapping facilitates the identification of an individual firm's idiosyncratic risks and allows for the development of appropriate testing.

The nature and frequency of testing should be proportionate to firm size and complexity. A flexible approach allows a firm to carry out scenario testing at an appropriate level to identify vulnerabilities within the chain of activities of their critical or important business services. A firm that implements change more regularly should undertake more frequent testing. This should at least be completed annually for all firms. A firm should consider various testing methods such as paper based or simulation testing on a number of critical or important business services.

A scenario test will identify any vulnerabilities or reliance on third parties. The results of which should focus investment in the resolvability of a vulnerable element, determine alternative channels of delivery or identify the elements that can be substituted if disrupted. Additionally, the results can identify areas where an increase in capacity is required, a reduction in manual

[8] https://www.centralbank.ie/docs/default-source/news-and-media/speeches/cross-industry-guidance-information-technology-cybersecurity-risks.pdf

[9] https://www.eba.europa.eu/regulation-and-policy/internal-governance/guidelines-on-ict-and-security-risk-management

[10] https://www.eiopa.europa.eu/sites/default/files/publications/eiopa_guidelines/eiopa-bos-20-600-guidelines-ict-security-and-governance.pdf

intervention, where staff need appropriate training and what outsourcing arrangements need to be reviewed.

A firm should design a test plan and document the scope of the exercise, the steps taken or considered during the exercise, and should capture and act upon the lessons learned from the exercise. This will provide greater assurance that a firm has adequate contingency plans in place, to identify and prepare for, respond and adapt to, recover and learn from an operational disruption.

A firm's board should review the results of all scenario testing carried out on critical or important business services. If scenario testing identifies a situation where impact tolerances may be breached then it would be the responsibility of the board and senior management to take action to improve the resilience of the business service and focus investment where needed. The design and implementation of remediation plans are the responsibility of senior management and the results of the remediation plans should be reviewed and approved by the board thereafter.

Pillar 2: Respond and Adapt

7 Business Continuity Management

Guideline 11: Business Continuity Management should be fully integrated into the overarching Operational Resilience Framework and linked to a firm's risk appetite.

Continuity of business services is an essential, forward-looking, component of being operationally resilient. While operational resilience is much broader than traditional business continuity management (BCM) and recovery, approved business continuity plans should be utilised as part of the holistic response to a disruption.

Where traditional BCM focuses on single points of failure, such as individual systems, people or processes, operational resilience goes a step further by determining how these single points of failure have the potential to affect the end-to-end delivery of critical or important business services.

When a disruption occurs to a firm's critical or important business services, the Business Continuity Plan (BCP) should be enacted as part of the response process. For BCM to be aligned with the Operational Resilience Framework, the BCPs should be tested through severe but plausible scenarios and include any third party interdependencies or interconnections. To respond effectively to a disruption, an integrated BCP should incorporate invocation processes, impact analyses, recovery strategies, training programmes and crisis management programmes to guide the management of a disruption and limit the impact.

A firm should adopt a holistic approach to BCM by mapping critical or important business services (discussed in section 4) and develop a recovery plan in line with approved impact tolerances.

Key personnel should be identified and have completed the necessary training. Training and awareness programmes should be customised based on specific roles to ensure that staff can effectively execute contingency plans when responding to a disruption.

Where interdependencies on third parties for the delivery of critical or important business services have been identified, it should be verified that these arrangements have appropriate operational resilience conditions to ensure the firm can remain within its impact tolerances. The arrangements should be reviewed and tested at least annually. The firm should consider identifying the dependencies that can be substituted in the event of an unexpected disruption.

8 Incident Management

Guideline 12: The Incident Management Strategy should be fully integrated into the overarching Operational Resilience Framework.

Incident management is an essential component of being operationally resilient. Operational resilience requires a firm to have an approach to incidents that covers the full life cycle of an event, from the classification of incidents that trigger approved response procedures, to testing the incident management procedures and reflecting on lessons learned from the occurrence of incidents.

For incident management to be aligned with the Operational Resilience Framework, a firm should develop and implement response and recovery plans and procedures to manage incidents that have the potential to disrupt the delivery of critical or important business services. When responding to an incident, the incident management plans should be developed to consider how a disruption can affect a firm's risk appetite and impact tolerance metrics.

A firm should maintain an inventory to support the firm's response and recovery capabilities that includes the incident response and recovery steps followed during a disruption, internal and third party resources potentially impacted, and communication plans followed.

Incident response and recovery procedures should be reviewed, tested and updated at least annually. Root causes should be identified and managed to prevent the serial recurrence of incidents. Lessons learned from previous incidents, including incidents experienced by others, should be reflected when updating the incident management program and learnings from incidents should be considered as part of scenario testing. A firm's incident management program should manage all incidents impacting or potentially impacting the firm.

9 Communication Plans

Guideline 13: Internal and External Crisis Communication plans should be fully integrated into the overarching Operational Resilience Framework.

A crisis communication plan should be developed either as part of a firm's Operational Resilience Framework or contained in the BCM/recovery plans to communicate effectively during a disruption.

A key part of an effective crisis communications plan is the identification and preparation of key resources and experts that can be leveraged when a disruption occurs. By doing so, this will mitigate the harm caused during a disruption.

The firm should develop internal and external communication plans and stakeholder maps that can be implemented during a disruption. The internal communication plan should contain escalation routes on how to communicate with key-decision makers, operational staff and third parties if necessary. The external communication plan should outline how the firm will communicate with their customers, stakeholders and regulators during a disruption.

Pillar 3: Recover and Learn

10 Lessons Learned Exercise and Continuous Improvement

Guideline 14: A lessons learned exercise should be conducted after a disruption to a critical or important business service to enhance a firm's capabilities to adapt and respond to future operational events.

A firm should conduct a lessons learned exercise after any disruption to a critical or important business service. This includes any potential material disruption to a third party provider that feeds into the delivery of a critical or important business service.

The lessons learned exercise should utilise the information gathered as part of the incident management or disaster recovery process. The decisions and recovery processes determined to be appropriate throughout the incident management process should form the basis of the lessons learned exercise.

A lessons learned exercise allows a firm to reflect on the three-pillar approach to operational resilience and allows for a feedback loop into the first two pillars that encourages improvement in how a firm prepares for and recovers from disruptions.

A firm should have predetermined criteria or questions that form the basis of the lessons learned exercise. These questions should identify deficiencies that caused a failure in the continuity of service and, these deficiencies should be addressed as a matter of priority. Specifically, at a minimum, the following should be considered:

- How and why the incident occurred;
- The identified vulnerabilities;
- The impact on the delivery of critical or important business services;
- Whether the risk controls, decisions and recovery processes and communications were appropriate; and
- The speed of recovery and whether the impact tolerances are adequate.

The lessons learned exercises should define effective remediation measures to redress deficiencies and failure in the continuity of service. Doing so will allow a firm to agree remedial actions and adjust any impact tolerances if determined. This should all be contained within a self-assessment document and presented to the board, as outlined in the next Guideline.

Guideline 15: A firm should promote an effective culture of learning and continuous improvement as operational resilience evolves.

Continuous improvements to operational resilience requires a firm to learn from its experiences as changes to its operational approaches, or technology infrastructure mature over time. This should not only occur after a disruption has occurred but should form part of ongoing operational resilience governance discussions.

A firm should promote an effective culture of learning and continuous improvement as operational resilience evolves. Operational resilience needs to be a fundamental element of any strategic decision taken by a firm. Any changes to strategy or the business model should be considered through a business service lens. A firm should determine the impact of strategic changes on the delivery of critical or important business services or any of the chain of activities that have been documented as part of the mapping exercise.

A firm should document and update written self-assessments highlighting how the firm meets current operational resilience policy requirements on at least an annual basis. These reviews should cover all aspects of the three pillars of operational resilience, from the identification of critical or important business services through to lessons learned exercises and ensure that no emerging vulnerabilities are overlooked.

The self-assessment should detail the rationale for determining all criteria from the Identify and Prepare pillar. For example, a firm should evaluate the current list of critical or important business services and state why each has been identified, with reference to regulatory expectations. A similar process, detailing the firms’ approach to impact tolerances, mapping and scenario testing should be applied to determine whether current practice meets regulatory guidelines.

Schedule 2

Glossary

BCBS	Basel Committee for Banking Supervision
BCM	Business Continuity Management
BCP	Business Continuity Plan
BoE	Bank of England
DORA	Digital Operational Resilience Act
ECB	European Central Bank
EU	European Union
FCA	Financial Conduct Authority
FRB	Federal Reserve Board
GSIB	Global Systemically Important Bank
ICT	Information and Communications Technology
IT	Information Technology
MI	Management Information
NIS2	Directive on Security of Network and Information Systems
OSP	Outsourced Service Provider
PRA	Prudential Regulatory Authority
RFSP	Regulated Financial Service Provider
UK	United Kingdom
US	United States

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Eurosystem