



Risk and Regulatory Outlook 2021

**Key developments in Southeast Asia -
digitalising regulatory reporting**

Digitalising regulatory reporting

Overview

Over the years, the typical use of AI for regulatory purposes has been to help organisations keep track of regulatory requirement changes. Within the last two years, we have seen an increase in potential use of AI to perform regulatory reporting for the industry.¹ This is a significant step forward for the industry as regulatory reporting has traditionally held an impression of being more challenging to digitalise, given its subjective and sometimes qualitative nature.

We identified five key trends that are fuelling digitalisation of regulatory reports:

1 Increasingly granular data submissions

Firstly, the Markets in Financial Instruments Directive (MiFID II) in the United Kingdom (UK) and European Union (EU), that expanded the scope of existing transaction and instruments reporting. Second, the MAS 610 in Singapore, which requires banks to report granular details of balance sheet and off-balance sheet information, totalling 340,000 data points across 67 reports. Regulators are collecting more data to perform a more holistic analysis of banks' performance and risks, and subsequently aggregate a view of the systemic risks within the industry.

2 Streamlining of reporting requirements

With an average of 217 regulatory updates made per day globally², regulators are receiving data from banks at a volume that is now becoming difficult to manage and analyse effectively. Hence, regulators such as those in Singapore, Philippines and Thailand are taking a step back to review: (i) which reporting requirements they truly need, (ii) which can be reduced and streamlined and (iii) which can be eliminated altogether, all of which will result in key changes to the regulatory reporting processes.

3 Industry collaboration on definitions and taxonomy

With the entire industry challenged by regulatory compliance needs, there are benefits of solving this non-competitive issue as an industry. This has been successfully demonstrated in Singapore when two Domestic Systemically Important Banks (D-SIBs) in Singapore and seven international banks, including four Global Systemically Important Banks (G-SIBs), joined an MAS 610 Open Taxonomy consortium to distil the 340,000 required data points into 1,000 reusable business concepts that banks can leverage to fulfill the revised MAS 610 requirements within a 24-month implementation timeline.³

4 Regulators are encouraging technological advancements that go beyond the institutions

Regulatory reporting technology has traditionally been targeted at an institution-level. However, the bigger question posed to the regulatory and supervision technology (RegTech/ SupTech) community is whether technology innovations and advancements can go beyond the institution and to the wider industry. In April 2020, there was a G20 TechSprint launched as a joint initiative by the BIS Innovation Hub (BISIH) and the Saudi G20 Presidency, designed to showcase the potential of such new innovative technologies.⁴ Multiple regulators are assessing the feasibility of machine-readable and machine-executable regulation to help automate a significant portion of the regulatory reporting process and reduce the burden of reporting on banks.

5 Cross border collaboration and 'regulator-bank convergence'

In Southeast Asia (SEA), regulators and banks occasionally come together in formal forums such as ASEAN, UK-ASEAN Business Council, ASEAN Financial Innovation Network, and ASEAN Bankers Association. The idea is to drive cross-border discussions, best practice sharing, innovations, collaborations and standardisations. This has encouraged a 'regulator-bank convergence' with the trend of more 'considerate' regulations and reporting requirements that enable and not inhibit innovation for banks.⁵

¹ Hong Kong Monetary Authority, "Howard Lee on Digital Transformation of the HKMA," 2020.

² Thomson Reuters, "Cost of Compliance Report 2020 and Covid-19 Update," 2020.

³ Regulation Asia, "How a Consortium Created an Open Taxonomy for MAS 610," August 13, 2019.

⁴ Bank for International Settlements, "G20 TechSprint," 2020.

⁵ Aw Cheng Wei, "Regulations for new technologies such as AI work best when public, private sectors collaborate: Panel," The Straits Times, September 16, 2020.

Regional regulatory developments

Currently there are no explicit regulatory demands for digitising regulatory reporting. Some regulators like the MAS are moving towards fully machine-readable report submissions, but machine-executable regulations are still in exploratory stages. We elaborate more on observations of the various initiatives by regional regulators below.



Regional industry observations



Singapore - Monetary Authority of Singapore (MAS)

In March 2018, the MAS unveiled a roadmap to transform its data collection approach from financial institutions (FIs)⁶, which will progressively reduce duplication and automate data submission by the FIs. It will also be made more efficient for the MAS to process and analyse the data collected. From 1 October 2020, all new regulatory returns from FIs to the MAS will have to be submitted in the machine-readable templates provided by the MAS.⁷

In November 2020, the MAS announced a \$35 million “Productivity Solutions Grant” (PSG) to help small FIs adopt digital solutions for data reporting.⁸ The PSG provides funding support for smaller financial institutions to adopt regulatory reporting solutions from pre-approved managed service providers. These technologies will facilitate more efficient processes for the preparation and submission of data, in line with regulatory requirements. The PSG will co-fund up to 30% of qualifying expenses for the adoption of digital solutions from the pre-approved managed service solution providers, capped at \$250,000 per project for banks.



Philippines - Bangko Sentral ng Pilipinas (BSP)

As part of BSP’s continuing effort to strengthen its supervisory capacity in a rapidly evolving financial services landscape, they launched an API-based Prudential Reporting System⁹. It allows machine-to-machine reporting by banks to the BSP, thereby fully eliminating manual intervention in the reporting process. It utilises the more current and advanced Extensible Markup Language (XML) reporting format in lieu of the existing reporting formats (Excel and Comma Separated Values or CSV) which aligns the BSP with international practices in reporting standards.

The use of the XML format also makes possible the streamlining of several reports into a single rationalised structure. Report validation is also kept to a minimum as inclusion of unnecessary data wherein generated totals or duplicate entries are minimised. This in turn allows for a much faster generation of statistics that are used in various financial surveillance tools.

In September 2019, BSP won the Data Management Initiative Award¹⁰ in the Central Banking Fintech and Regtech Global awards for this.



Thailand - Bank of Thailand (BoT)

In September 2020, BoT announced plans for a regulatory data transformation¹¹ with two key objectives. First is to look at common international standards for data reporting formats, to help improve the reporting process efficiency for banks. As a start, BoT will look at the credit dataset, and gradually expand to other areas. Second, BoT is looking to reduce/discontinue duplicate report submissions, and minimise hardcopy or ad-hoc reports. To support this initiative, BoT has set up a joint working group which started from 1 October 2020 to brainstorm on ideas.¹²

⁶ Monetary Authority of Singapore, “MAS Moves Towards Zero Duplication of Data Requests to Financial Institutions,” 2018.

⁷ Monetary Authority of Singapore, “MAS introduces revised reporting standards for banks to reduce duplicate data submissions,” 2018.

⁸ Monetary Authority of Singapore, “\$35 Million Grant to Help Small Financial Institutions Adopt Digital Solutions for Data Reporting,” 2020.

⁹ Bangko Sentral ng Pilipinas, “2019 Annual Report: Bringing BSP people closer to the Filipino people,” 2019.

¹⁰ Rachael King, “Data Management Initiative: Central Bank of the Philippines,” Central Banking, 2019.

¹¹ Bank of Thailand, “Press and Speeches 65/2020,” 2020.

¹² Ibid.,

Regional industry observations

Special mentions



UK Financial Conduct Authority (FCA) - Digital regulatory reporting

In 2018, the UK FCA embarked on a Digital Regulatory Reporting (DRR) initiative in collaboration with several banks. The purpose of DRR is to reduce the regulatory reporting burden on firms by making the process more efficient, while improving the quality of the 500,000 scheduled regulatory reports the FCA alone receives every year.

The first and second phases of DRR, spanning from 2018 to 2019, explored how the regulatory reporting process could be automated by writing regulations in a Machine Executable Regulation (MER) format, developed options for the Target Operating Model (TOM) required to support digital regulatory reporting, analysed on how Domain Specific Languages (DSLs) could generate MER, and assessed the viability of DRR by modelling the cost-benefit business case for multiple implementation scenarios.

The ongoing third phase of DRR builds upon the work of the first and second phases in order to deliver the data value of this digital regulatory reporting solution, align on standards and definitions and further improve the regulatory interpretation capability of the AI.¹³



Hong Kong – Hong Kong Monetary Authority (HKMA)

Similar to the UK FCA, the HKMA embarked on their digitalisation journey for regulatory reporting in 2018 and through its Banking Made Easy initiative, identified their four key focus areas including, (a) Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) surveillance technologies; (b) Regtech for prudential risk management and compliance; (c) Study on machine-readable regulations; and (d) HKMA's exploration of SupTech.¹⁴

In November 2020 the HKMA released a White Paper¹⁵ entitled "Transforming Risk Management and Compliance: Harnessing the Power of Regtech", which included a two-year roadmap to promote RegTech in the Hong Kong banking sector. The whitepaper also mentioned HKMA conducted a study on machine-readable regulations¹⁶ suggesting that the relevant technical standards (e.g. use of AI and machine learning techniques to interpret regulations) are still at an experimental stage, while the coding of regulations into computer programmes has only been tested on a very limited scale.



¹³ Financial Conduct Authority, "Digital regulatory reporting," 2017.

¹⁴ Hong Kong Monetary Authority, "Regtech in the Smart Banking Era – A Supervisor's Perspective," 2018.

¹⁵ Hong Kong Monetary Authority, "The HKMA developed a two-year roadmap to promote Regtech adoption," 2020.

¹⁶ Ibid.,

Outlook for 2021 and recommendations



Outlook #1: Digital regulatory reporting will see increased industry standardisation

According to the Global RegTech Industry Benchmark Report¹⁷, regulators are willing to consider investments (both financial and reputational) where they could leverage the most public value and have a transformative impact on regulated industries. Public goods mentioned by interviewees of this report included:

1. shared ontologies, or at least shared glossaries and data taxonomies;
2. shared, standardised data formats and legal gateways for sharing data between firms;
3. shared norms, such as the MAS' FEAT (Fairness, Ethics, Accountability and Transparency) Principles for the use of AI and data analytics; and
4. shared utilities and data lakes (e.g. Singapore's MyInfo).

For digital regulatory reporting to materialise, the industry will need to have a common understanding and usage of data¹⁸. There might be an initial resistance across the industry to band together since (a) every bank is unique and standardisation might be almost impossible to achieve without compromise, and (b) there is no regulatory push to have standardisation at the current moment. However, it is key that the industry starts pivoting back from the current mentality to one that takes into account the broader benefits of standardisation, such as: (a) minimised subjectivity in interpretation and expectation, (b) common reference point when discussing and/or reporting certain data terms and (c) overall transparency over counterparty and systemic risks.

Recommendation: Banks may consider adopting industry standards such as the MAS 610 Open Taxonomy in Singapore or Banks' Integrated Reporting Dictionary (BIRD) in Europe, for consistent interpretation of terms and report preparation. This can potentially also reduce the time and effort for multiple iterations of clarifications during implementation. A key prerequisite for adopting harmonised data models and industry standards would be for banks to have the right data sourced to populate the model.



Outlook #2: Regulators will continue to encourage innovation and actively drive the imperative to embrace change

As demonstrated by the FCA and the HKMA, regulators are taking a first step towards addressing common non-competitive industry problems as part of their own agenda to ensure industry transformation across all aspects, not just from a revenue generating angle. We've seen regulators promote innovation through organising hackathons or providing funding for Proof-of-Concepts or digital implementation. Other regulators are conducting studies on the maturity of RegTech. SEA regulators are in exploratory phases to consider taking a more active role in helping the market reach its digitalisation potential sooner than later. A holistic industry solution is a massive exercise and will require the cooperation across regulators, banks and vendors.

Recommendation: Banks should aim to participate in Proof-of-Concepts and/or industry initiatives where possible, as these are opportunities to explore new technology advancements in safe environments such as regulatory sandboxes. It will also give banks an idea of the roadmap that the regulator has in mind for the industry.



¹⁷ University of Cambridge, "The Global RegTech Industry Benchmark Report," 2019.

¹⁸ Rachael King, "Artificial intelligence: The future of regulation?," Central Banking, 2018.

Outlook for 2021 and recommendations (cont'd)



Outlook #3: Increasing regulatory reporting demands will drive technology adoption

Regulatory reporting submission requirements will likely increase in volume, granularity of data and quality of submissions. The Covid-19 pandemic was a catalyst for increased ad-hoc reporting as regulators and banks scrambled to re-assess their risk exposures and understand the fast-moving trends. Banks that rely on manual processes will be pressured to adopt technology solutions to address these demands in a sustainable and effective manner. These challenges are further compounded for banks operating in multiple jurisdictions, having to cater to multiple compliance requirements.

Regulators recognise that and therefore some like the MAS have announced incentives such as grant schemes to help small FIs adopt digital solutions for data reporting¹⁹. Other regulators like the China Banking and Insurance Regulatory Commission (CBIRC) have imposed financial penalties on banks for poor quality data submissions.

Recommendation: Banks with significantly manual reporting processes should look to adopt technology solutions, leveraging the grant schemes from regulators to offset costs. Banks should also focus on good data quality of the granular data through the data flow from source to reporting systems. Coupled with a regulatory reporting solution, banks can address multiple regulatory reporting requirements within a significantly shorter time as compared to a manual process.



Outlook #4: Expectations around the responsible use of AI will increase

Historically, governance functions have only had to deal with static processes. But AI processes are iterative —and AI governance must be as well. As Banks expand their adoption of AI, they will also face increasing expectations around explainability, bias, governance, accountability and data protection across the AI lifecycle. This will be even more stringent for AI solutions used in the preparation of regulatory reporting.

At an international level, the OECD Principles on AI²⁰ has been adopted by many of its member countries. There are variants of these principles for responsible use of AI globally, developed by governments, regulators, industry associations and even technology firms. There are multiple similarities where each framework builds upon the others and differs in terms of focus and depth. It is important that principles must be contextualised for industry and local nuances. MAS published the Fairness, Ethics, Accountability and Transparency (“FEAT”) Principles for the Financial Sector²¹, and in Australia, the AI Ethics Framework²² guides the design, development and implementation of AI.

Recommendations: Right from the design stage, it is important that banks adhere to the AI frameworks and principles relevant to their countries of major operations, and enforce a standardised adoption across their bank. Assumptions have to be made about accepted norms in different scenarios and cater to cultural differences across countries. The outcomes from the developed solutions need to be explainable, transparent, auditable and provide adequate disclosures. As it is still an emerging regulation in most countries, it is more important than ever to monitor the emerging regulatory environment surrounding AI in the RegTech space to ensure that existing (and in-flight) solutions for the banks’ Digital Reporting solutions remain compliant with the new standards being developed.

¹⁹ Monetary Authority of Singapore, “\$35 Million Grant to Help Small Financial Institutions Adopt Digital Solutions for Data Reporting”. 2020.

²⁰ OECD Principles on Artificial Intelligence. 2019.

²¹ Monetary Authority of Singapore, “Principles to Promote Fairness, Ethics, Accountability and Transparency (FEAT) in the Use of Artificial Intelligence and Data Analytics in Singapore’s Financial Sector” (12 November 2018). ”.

²² Australian Government AI Ethics Framework

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