

## **Efficient Model Lifecycle Management**

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The key to good model risk governance is establishing an efficient model lifecycle management process. In the banking industry, small and medium sized firms may not have the infrastructure and resources to set up a dedicated model governance group. After the initial validation of a new or significantly updated model, the model becomes active, but model risk management does not end there. Models typically spend the majority of their lifecycle in the active state and need to be monitored on an ongoing basis to determine that they remain fit for use. Ongoing monitoring can be a time-intensive activity and it is crucial to create an efficient workflow, especially given limited resources.

### ***What do we mean by ongoing monitoring?***

Ongoing monitoring refers to more than just monitoring the performance of a model. For example, a risk management team needs to track all stages of the model's lifecycle. Among other aspects of model governance, this includes monitoring the status of model findings, the timing and status periodic assessments and revalidations, and approved model users and uses. In addition, as part of ongoing model governance, model risk management needs to periodically report on the status of both individual models and the status of the entire model inventory to model risk committees at both the division and corporate levels.

### ***The importance of tracking dates***

To facilitate an effective ongoing monitoring process, we need to pay special attention to dates. For example, we should ask the following about the model: When was the last performance report?, When are the findings due? When was the last time the model was assessed? When was the last time the model had a revalidation? All this information must be tracked. For management reporting, you need to know: the number of open findings, whether the findings are overdue, and the status of finding resolutions. A model risk management team needs to track these important dates and to know when actions need to be initiated. Without a workflow built around this information, the monitoring process can become overwhelming, and can lead to violations of model risk policies and procedure. This, in turn, will lead to increased scrutiny and the issuance of findings by auditors and regulators.

### ***The advantage a proper model inventory***

A well-designed model inventory facilitates tracking of the information mentioned above. At a minimum, a model inventory should track the name and risk rating of the model and all approved uses and users of the model. In addition, the status and schedule of performance

reporting, findings, and ongoing assessments and revalidations must be tracked. To assist the model risk management team, the inventory should be designed to allow reports on the status of a model or the aggregate inventory to be generated quickly. For example, at the beginning of a quarter, a model risk manager should be able to generate all upcoming activities that require action by model stakeholders during the quarter. This would allow the model risk management team to prioritize and schedule activities in order to meet all due dates required by model risk policies. Often, small and medium sized firms rely on spreadsheets to implement their model inventories. Depending on the size and complexity of the model inventory, this might not be adequate to facilitate an efficient workflow. Overall, expending resources to design and implement a more sophisticated inventory at the start, could reduce costs and work load down the road.

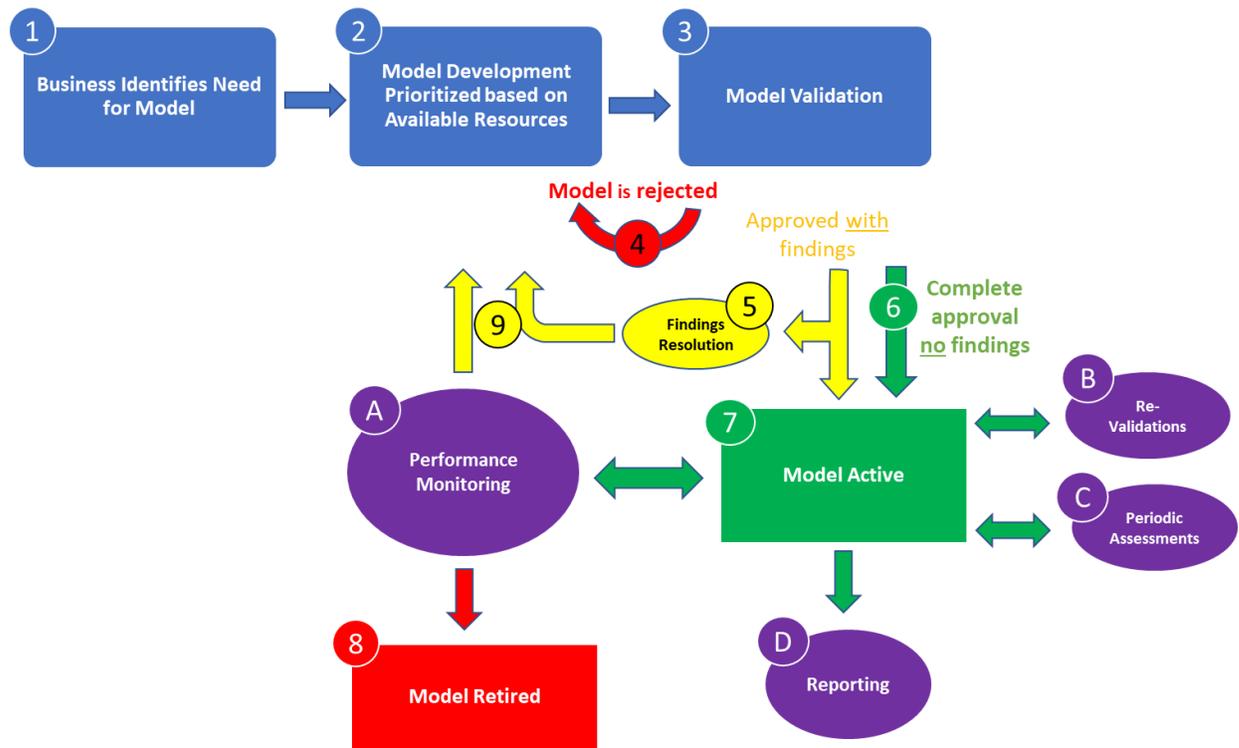
### ***Model lifecycle – active model***

Most approved models spend 90% of their lifetime in the active state, undergoing ongoing monitoring. Once the model is developed and initially validated (see 1 -3 in Figure 1), it can be rejected (see 4 red arrow in Figure 1) in which case the model goes back to its development stage (see 2 in Figure 1) or approved in two ways: without findings (see 6 green arrow in Figure 1) or with findings (see 5 yellow arrow in Figure 1 ) that will need to be addressed. In the meantime, while the findings resolution is going on you have an Active Model (see 7 green box in Figure 1).

The model risk management team will spend a significant amount of their available time monitoring the model in its active phase (see A in Figure 1). A model typically has periodic revalidations (see B in Figure 1 ) at least annually depending on the risk of the model, as well as periodic assessments (see C in Figure 1 ), and reporting (see D in Figure 1). Reporting on model must be provided to the Model Risk Committee at a minimum, and depending on the risk of the model, the reporting might also be provided to the Board. If model performance deteriorates, the model inventory should facilitate efficient reporting to all model stakeholders. The reporting should include findings resolution status, model performance, and the outcomes of revalidations of the model. In this phase of the model lifecycle (see 7 green box), where the model is active, there is lots of information that the risk management team needs to know: specifically, what to do and when.

The active model is a very important part of the model lifecycle which needs to be tracked. The end of the model lifecycle will eventually arrive when you retire or redevelop the model completely depending on its performance (see 9 yellow arrows in Figure 1).

Figure 1: Model lifecycle



Source: KDOA

### ***How KDOA's services help you setting up an efficient model lifecycle management***

The key to well-designed risk management and governance is establishing an efficient workflow process and understanding the importance of managing the ongoing workflow and not just the initial validation. Therefore, small and medium sized banks with limited model governance resources, need to consider whether a spreadsheet-based inventory is adequate for their needs.

KDOA performs many initial validations and re-validations of models for firms with limited resources, and KDOA can assist in setting up and managing the ongoing monitoring and reporting for these models once they are active. Firms need to create a process to be able to monitor the models on an ongoing basis.

KDOA can help these small and medium sized firms set up an efficient model lifecycle management process, and recommend approaches to create an appropriate model inventory. At KDOA, we think about empowering every organisation, and about how companies can take advantage of their resources and infrastructure in a way they were not before.