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Practice Guide No. 005 - The Predictive Model Reliance Review

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Purpose

A structured review for finance, accounting, leadership, and model teams deciding whether a predictive model's improvement is sufficiently useful, timely, explainable, and controlled to support a consequential decision.

How to use this guide

Use the guide during model selection, validation challenge, forecast-process design, approval, monitoring, or material change review. For each statement, mark Evidenced, Partial, Not evidenced, or Not applicable and identify the supporting evidence or accountable owner. Do not total the checkmarks into a mechanical score. One material weakness can outweigh several completed items.

Status key E = Evidenced P = Partial N = Not evidenced N/A = Not applicable
Possible outcomes Proceed Proceed with conditions Pause and remediate Do not proceed

Review identification

Initiative or model	
Financial decision	
Forecast horizon and cutoff	
Finance owner	
Model owner	
Decision authority and review date	

1 Financial Decision and Value

Define the financial decision first, then determine whether the model's incremental improvement is material enough to justify its cost and control burden.

Review statements

Review statement	Status
The prediction target, time horizon, primary user, and decision are stated precisely.	☐ E ☐ P ☐ N ☐ N/A
A named finance or business owner is accountable for how the output will be used.	☐ E ☐ P ☐ N ☐ N/A
The model is compared with a meaningful simpler baseline on unseen data.	☐ E ☐ P ☐ N ☐ N/A
The expected improvement is translated into cash, liquidity, risk, or another measurable business consequence.	☐ E ☐ P ☐ N ☐ N/A
The costs of false positives, false negatives, forecast error, and delayed action are understood.	☐ E ☐ P ☐ N ☐ N/A
The expected benefit is large enough to justify implementation, validation, documentation, monitoring, and explanation.	☐ E ☐ P ☐ N ☐ N/A

Evidence and conclusions

Decision and authorized action	
Baseline and measured improvement	
Financial consequence of error	
Conclusion and required conditions	

2 Input Timing and Traceability

Confirm that every material predictor was available by the decision cutoff and can be traced to a defined, supportable source.

Review statements

Review statement	Status
The forecast cutoff and the information available by that date are documented.	☐ E ☐ P ☐ N ☐ N/A
Training and testing use the version of each input that would have existed at the applicable prediction date.	☐ E ☐ P ☐ N ☐ N/A
Unavailable or delayed inputs are excluded, estimated, or substituted under an approved method.	☐ E ☐ P ☐ N ☐ N/A
Sources, definitions, joins, transformations, exclusions, and as-of dates are traceable.	☐ E ☐ P ☐ N ☐ N/A
Material model inputs can be reconciled to the underlying operational or financial records where appropriate.	☐ E ☐ P ☐ N ☐ N/A
The evaluation does not use future information to overstate what the organization could have known.	☐ E ☐ P ☐ N ☐ N/A

Evidence and conclusions

Forecast cutoff	
Authoritative sources and as-of dates	
Delayed inputs and approved substitutions	
Reconciliation and lineage evidence	

3 Population Performance and Explanation

Evaluate whether the historical population supports the intended use, whether performance generalizes, and whether the result can be explained at the level the decision requires.

Review statements

Review statement	Status
The training population resembles the customers, transactions, properties, or periods the model will evaluate.	☐ E ☐ P ☐ N ☐ N/A
Selection effects created by prior approvals, rejections, exclusions, or business rules are visible and assessed.	☐ E ☐ P ☐ N ☐ N/A
Training, validation, and final testing observations are separated appropriately for the use case.	☐ E ☐ P ☐ N ☐ N/A
The selected performance metric is explained in plain language and matches the business question.	☐ E ☐ P ☐ N ☐ N/A
The model's advantage over a simpler alternative remains meaningful under realistic operating constraints.	☐ E ☐ P ☐ N ☐ N/A
Users can identify the important drivers and investigate a prediction without treating association as causation.	☐ E ☐ P ☐ N ☐ N/A

Evidence and conclusions

Population included and excluded	
Validation and test design	
Metric and business interpretation	
Explanation required for use	

4 Accountability and Monitoring

Allocate responsibility for the evidence, financial interpretation, authorization, workflow, and continuing performance of the model-supported decision.

Review statements

Review statement	Status
Model builders document the data, tuning, testing, assumptions, limitations, and known failure conditions.	☐ E ☐ P ☐ N ☐ N/A
The analysis can be reproduced from retained data, model settings, Python or Jupyter code, and saved outputs.	☐ E ☐ P ☐ N ☐ N/A
Finance challenges the evidence and translates prediction error into financial and operating consequences.	☐ E ☐ P ☐ N ☐ N/A
Leadership or the designated decision owner approves acceptable error, authorized use, and accountability for the action.	☐ E ☐ P ☐ N ☐ N/A
Operational owners participate when the model affects processes outside finance.	☐ E ☐ P ☐ N ☐ N/A
Overrides, exceptions, actual-versus-forecast results, and user behavior are recorded and reviewed.	☐ E ☐ P ☐ N ☐ N/A
Thresholds define when to investigate, restrict, recalibrate, suspend, or retire the model.	☐ E ☐ P ☐ N ☐ N/A

Evidence and conclusions

Model and data owners	
Reproducible Python or Jupyter evidence	
Finance and decision owners	
Monitoring and stop conditions	

Decision summary

Use the evidence and consequence of each gap. Do not treat this review as a point total.

Outcome	
Decision rationale	
Conditions or remediation	
Accountable owners	
Approval and next review dates	
Residual risks accepted	
Immediate next actions	

Critical red flags

☐ The decision, authorized action, or accountable owner is unclear.
☐ The reported gain depends on reused observations or lacks a meaningful simpler baseline.
☐ A material predictor would not have been available by the forecast cutoff.
☐ The historical population reflects prior business decisions that have not been assessed.
☐ The metric is being interpreted more broadly than it supports.
☐ The result cannot be challenged or explained at the level the decision requires.
☐ No approval, override, monitoring, escalation, or stop condition exists.
☐ Implementation and control costs are absent from the value case.

Learning note

This guide reflects Valentina DuPont's personal learning and professional interpretation of advanced predictive analytics concepts. It is an original educational resource and does not reproduce course slides, code, datasets, transcripts, prompts, or proprietary instructional language. It is not accounting, investment, lending, legal, statistical, or model-risk advice and does not represent the views of any educational institution, employer, regulator, or professional association.

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