

PROTIVITI'S MODEL SERVICES AT A GLANCE

New model systems, based on Artificial Intelligence and Machine Learning, as well as market regulations, make Model Risk Management even more challenging for companies. Protiviti offers full support in all relevant fields of Model Services.

Our Data Analytics Services

The use of models is never without risk for financial institutions. Models can be based on incomplete or false information, and results can be interpreted incorrectly. Ultimately, this can lead to the wrong business decisions being made.

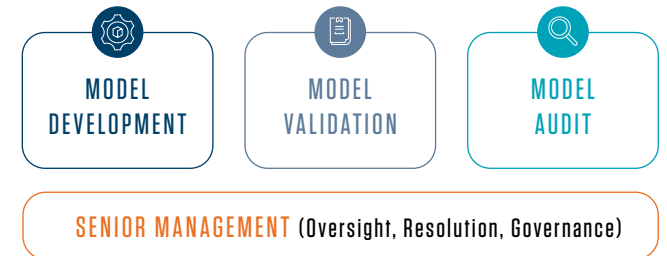
There are three lines that institutions should create in order to improve their overall decision-making and risk management when using models. Protiviti offers services and support across all three of these lines: for model developers, for independent validators, and for auditors. Our past model projects include models of all risk types, and also pricing models, detective and predictive modelling, as well as anomaly detection.

MODEL DEVELOPMENT: We develop models tailored to our clients' needs, and address model risks. We also support model development departments when extending or recalibrating existing models.

MODEL VALIDATION: An independent party should effectively challenge the models being used. We support our clients in all validation steps, including the review of data collection and processing, challenging assumptions, methodologies, and model results, as well as compliance with applicable regulatory requirements.

MODEL AUDIT: Due to the increasing complexity of models, internal audit departments require specific know-how. We provide our quantitative and regulatory knowledge,

Lines against Model Risk



including expertise on relevant regulations such as ECB Guide to internal models or SR 11-7.

Our Model Risk Services

There are multiple aspects that need to be considered for effective Model Risk Management:

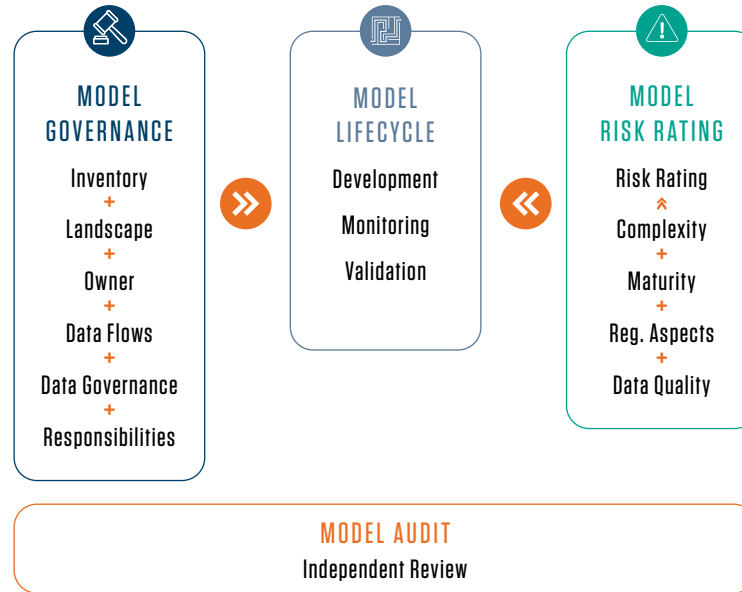
MODEL GOVERNANCE: For the effective mitigation of model risk, policies on model processes, roles and responsibilities should be in place. We have developed model policies on multiple projects.

MODEL LIFECYCLE: This starts with the stated need of a model and ends with its retirement. We have conducted model projects starting from initiation, and know how to operate models efficiently.

MODEL RISK RATING: A model risk rating should be introduced as a key risk indicator. We help our clients to define the rating process.

Model Risk management: BEST PRACTICES

Based on our experience in audit and consulting projects at insurance companies, banks and asset management companies, we have developed an overarching framework for model governance and managing model risk.



Protiviti supports all three lines in Model Risk Management

Trusted expertise is needed to effectively mitigate model risk. Our FRM or CFA certified experts in the Model Services Team have acquired their extensive knowledge through their work on countless projects, both nationally and internationally. Our team members have extensive mathematical and regulatory knowledge, as well as programming skills.

Furthermore, we provide external training sessions on effective model risk management, including regulatory requirements. By participating in these training sessions, customers can expand their own skillset.

Protiviti works closely cut “together” with its parent company Robert Half when it comes to finding the right personnel for a specific project. Through this, we can offer our clients a large network of highly specialized experts.

CHECKLIST OUR SERVICES

FOR MODEL DEVELOPERS

Model Development,
e. g. for ICAAP or
pricing models

Evaluation and improvement
of existing models

FOR INDEPENDENT VALIDATORS

Model validation that takes
all relevant aspects
of the model into account,
including model process,
model data, model
analytics and model results

FOR INTERNAL AUDIT

Evaluation of effectiveness
of model-risk management
practices and governance
in general

Auditing model development
processes and the model
validation processes
in line with applicable
regulations

Contact us!



PETER GRASEGGER

Managing Director

+49 173 653 8922

peter.grasegger@protiviti.de



DENIS LIPPOLT

Director

+49 172 698 30 48

denis.lippolt@protiviti.de

+49 69 963 768 100
contact@protiviti.de
www.protiviti.de



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