



# Integrated Machine Learning with Earnix

Embedded Machine Learning  
for smarter product, pricing,  
and customer relationship results

# Accelerate Your Analytical Maturity with Earnix

In a world of continually changing consumer expectations among banking and insurance companies, it's important to partner with a solution provider that stays up to date with the latest analytical technologies. Earnix is helping our customers do this by providing a world-class integrated pricing and business decision-making software suite designed for the Financial Services industry. By applying advanced analytics to pricing, personalization and product decisions, Earnix helps companies maximize business key performance indicators (KPIs).

Earnix's Integrated Machine Learning capabilities vastly improve the precision of advanced predictive analytics, while automating and speeding time-to-market decision making. Earnix Integrated Machine

Learning makes it possible to monetize and operationalize vast quantities of new data sources - such as telematics, IOT, and other emerging forms of data. Earnix allows organizations to take machine learning models from the data science laboratory and place them into production in a very short time period.

Deploying machine learning models in a demanding, high performance enterprise production environment is critical in today's fast paced business environment. Live online environments require models to run in real-time, and Earnix provides the robustness and performance that enterprises demand from a business-critical enterprise solution.

## Earnix Integrated Machine Learning has been designed for companies at all levels of analytical maturity.



### Beginner

Earnix enables you to create machine learning models and enables you to embed them in your business processes.



### Intermediate

Earnix allows for the Import of existing models and model objects created in H2O or other machine learning platforms - in order to refine and use in pricing and product decisions.



### Advanced

Create advanced machine learning models directly in the solution - natively - or import existing machine learning model objects and libraries. Automate your model training process using the Earnix automation module.

# Integrated Machine Learning

Earnix supports partially to fully embedded integration with external machine learning environments libraries as well as analytical open source environments.

Machine learning models currently supported for import include generalized linear modeling (GLM), Random Forest (RF), Python, Gradient Boosted Modeling (GBM) and XGBoost (GBM framework).

Organizations that have developed machine learning models can easily

import them, and for those without machine learning models – they now can be fully created in the Earnix environment. Data can be uploaded, one of the above supported model types (e.g. XGBoost) can be chosen as the type of model that needs to be created, and then a model and/or model object can be generated.

This allows organizations to complete the entire machine learning model lifecycle within Earnix – in an enterprise grade fashion and at a mass level of production.

**Earnix Integrated Machine Learning supports importing or natively creating a variety of machine learning models and technologies.**

## Supporting Features

### Discrete Solver

The level of sophistication in analytical optimization projects continues to increase with the introduction and full productization of the discrete optimization solver.

The discrete solver optimization algorithm allows organizations to optimize rating tables that include multiple variables where the relationship between the variables is critical (e.g. monotonic), while maintaining rates at the desired levels of granularity.

This algorithm facilitates solving optimization problems with discontinuities, or gaps in the demand function that might lead to local maximums – which often can be a problem for standard optimization software.

The result of these new algorithms is that more complex discrete

optimization scenarios are now possible, more dimensions with regard to monotonicity problems are accounted for, and better performance results against more complex data sets are being achieved.

### Business Process Automation

New in Earnix is the ability to automate manual processes via the introduction of a Python based console.

This console allows organizations to create programs via a series of code snippets in a wizard driven fashion – to automate tasks, programs, or processes that may be executed on a frequent basis. With a library of provided JavaScript methods delivered out of the box tasks such as updating pricing projects, refitting models, or creating project hierarchies and structures. These processes can then be saved and reused – allowing for continual refinement.



Earnix enables insurers and banks to provide prices and personalized products that are faster, smarter, and safer. With Earnix, insurers and banks offer personalized value to every customer, every time, and in full alignment with the corporate business strategy, goals, and objectives. Our solutions offer systemized, enterprise-wide value with ultra-fast ROI. With numerous customers spanning the five continents, Earnix consistently innovates for Banks and Insurers around the globe since 2001. We have offices in the Americas, Europe, Asia Pacific, and Israel.