Global Consulting

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How AutoML boosts modelling in P&C insurance
Veronica Coronel Vera - Insurance Data Science Conference, 17 June 2021
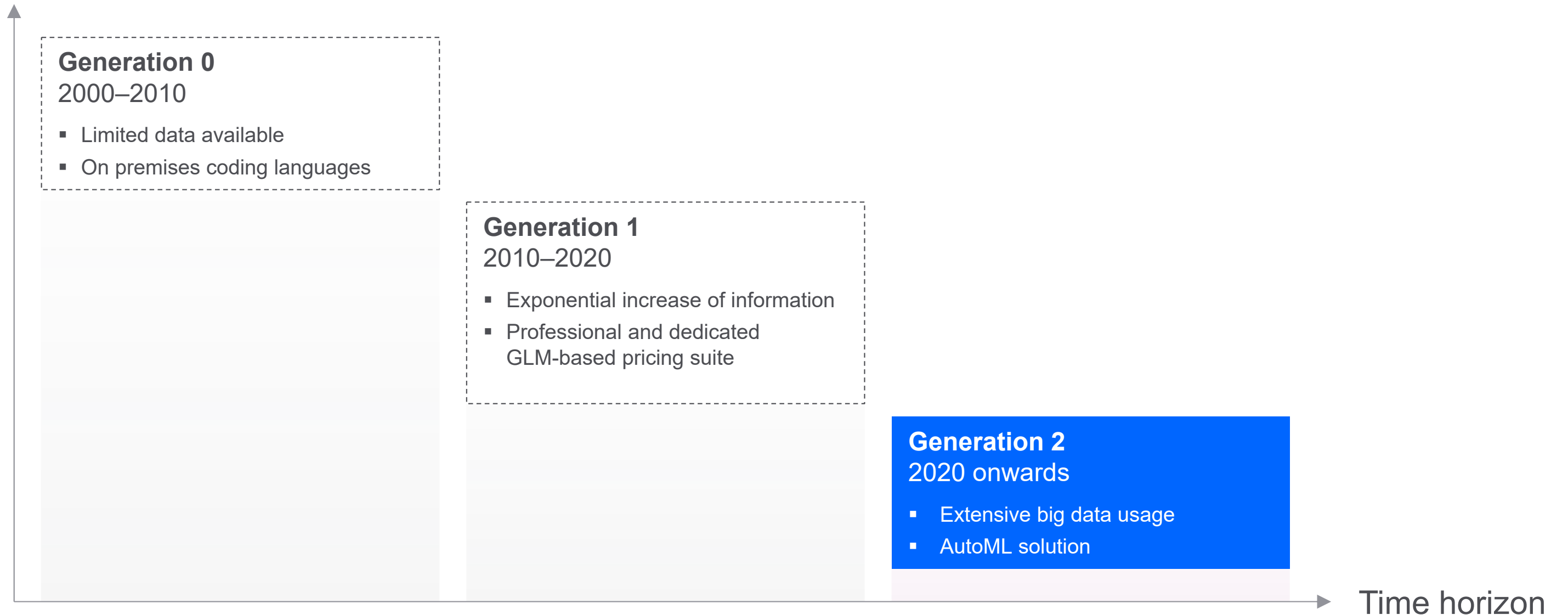
Munich RE

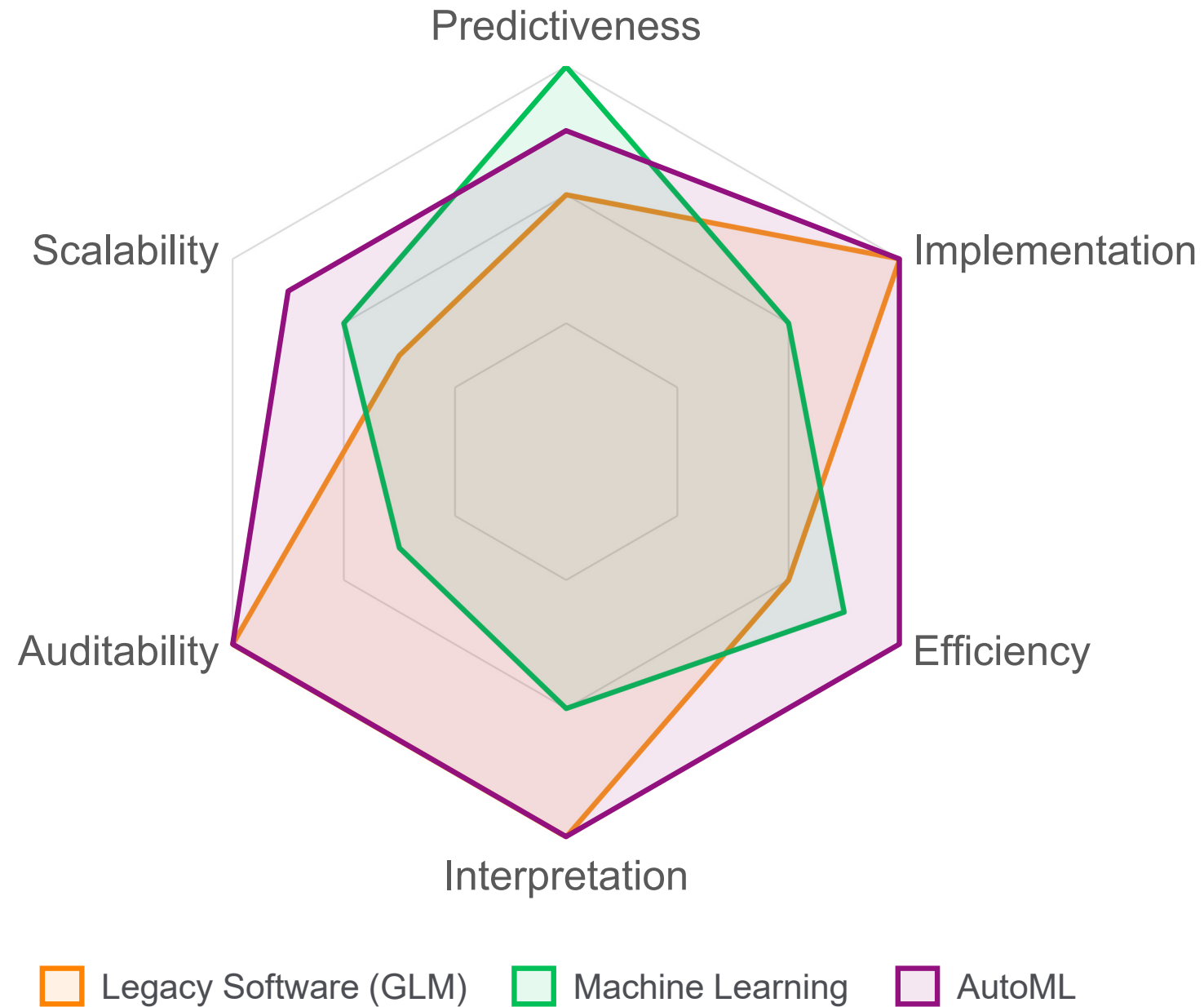# Where does digital evolution have the biggest impact on the Pricing Framework?

	Prediction	**Decision making**
Architrave	**Technical price** Using the past to predict the expected claim costs	**Rate calibration** Transforming the technical prediction in a commercial rate
	Behavioral modelling Customer buying behaviour and portfolio elasticity	**Scenario testing** Assessing the impact of any rate change and the effect on the expected volume and profitability
	Competitive market analysis Taking into account market positioning to improve pricing adequacy	**Portfolio steering & pruning** Identifying the loss/profit making segment and the strategy to improve the profitability

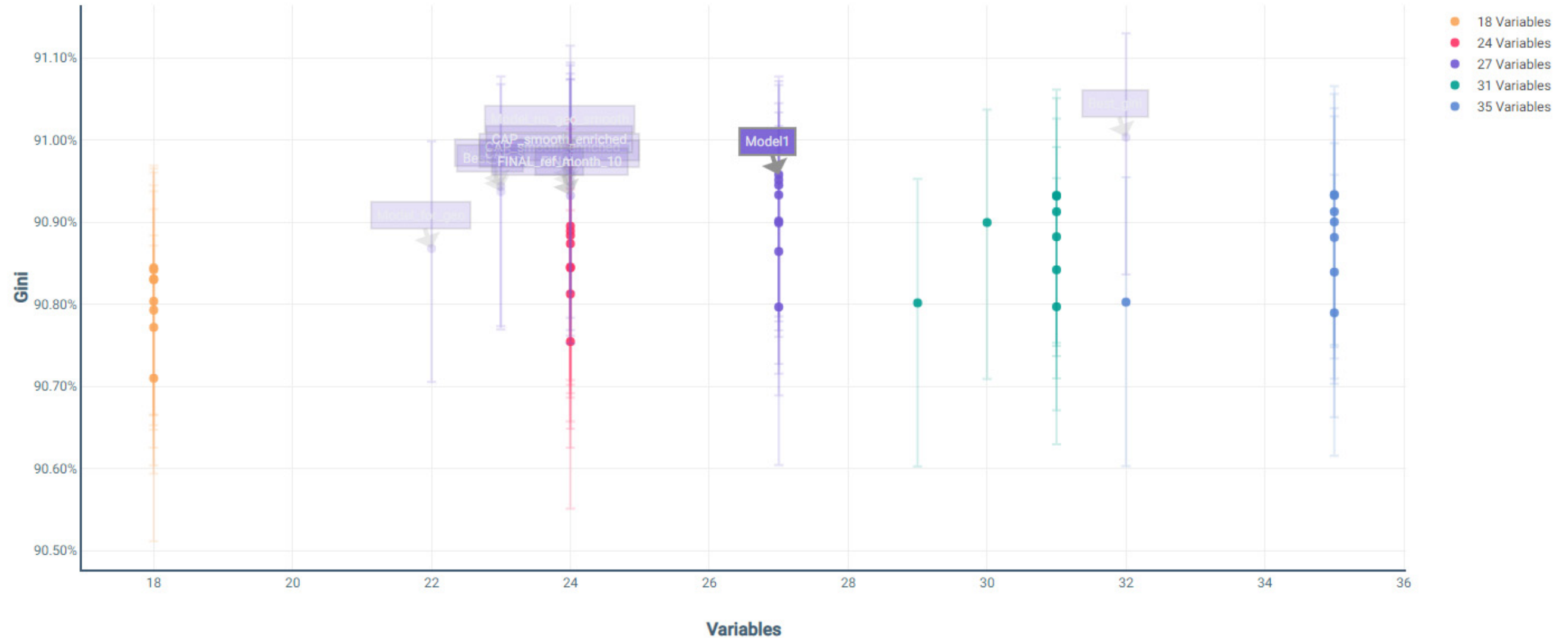| **Pillars**	Data management	Domain knowledge	Deployment
	▪ Data availability ▪ Storage infrastructure	▪ Business impact of analytical actions ▪ Regulatory environment	▪ Fast implementation and execution ▪ Synergy across software solutions

AutoML is at the edge of modelling software solutions

Time spent on prediction

Generation 0
2000–2010

- Limited data available
- On premises coding languages

Generation 1
2010–2020

- Exponential increase of information
- Professional and dedicated GLM-based pricing suite

Generation 2
2020 onwards

- Extensive big data usage
- AutoML solution

Time horizon

AutoML provides strong answers to modelling challenges

Legend: Legacy Software (GLM), Machine Learning, AutoML

Axes: Predictiveness, Implementation, Efficiency, Interpretation, Auditability, Scalability

Grid Search Overview

Spotting Interactions

#PreviousModel has **#27** variables which give **#351** possible interactions.
351 possible interactions will be automatically suggested. You can add custom interactions.
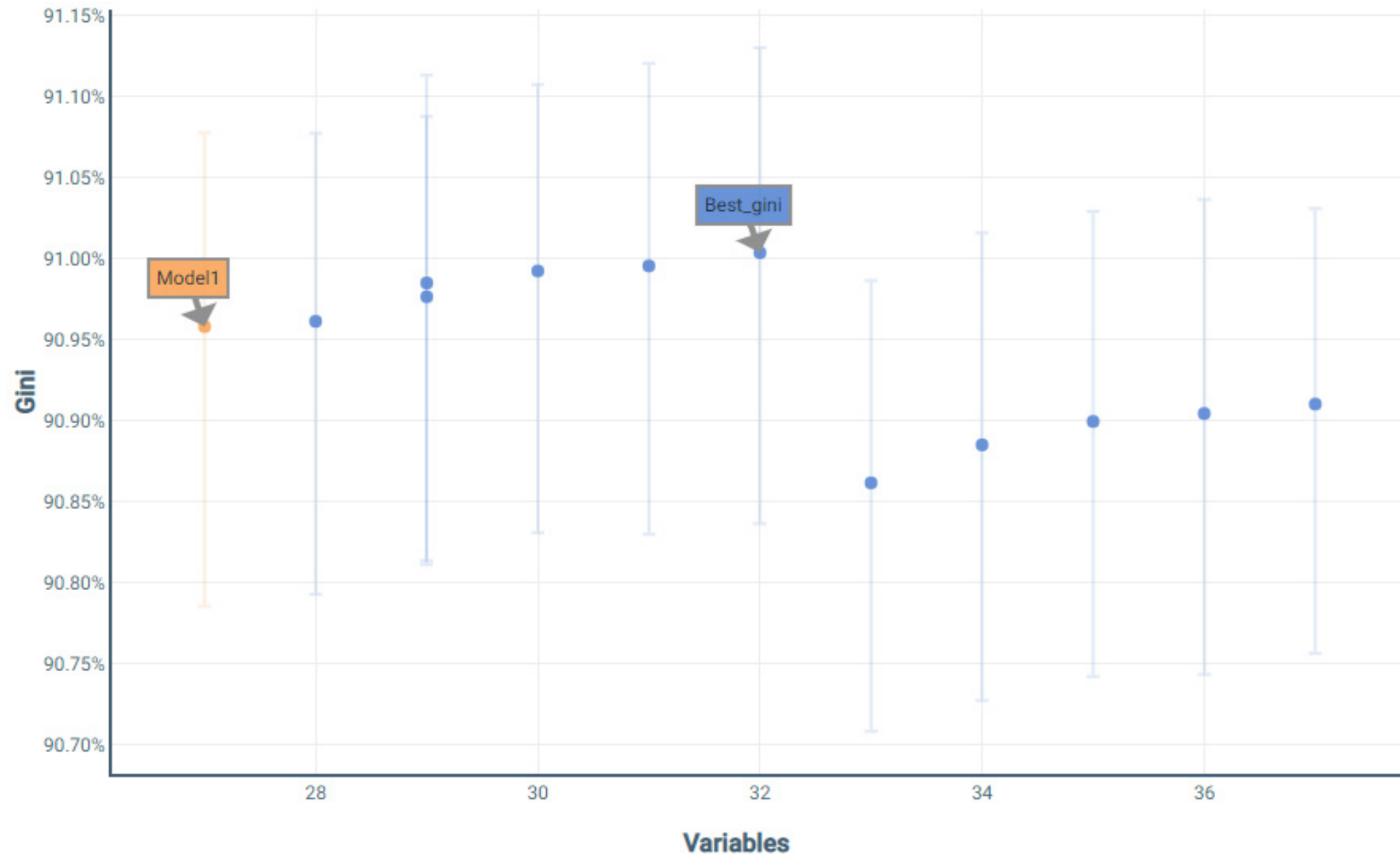
Optimizing resources allocation throughout technical sophistication journey

Advanced

- Risk and behavioral models
- Competitive market analysis
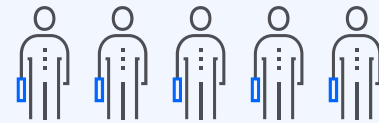- Fully-fledged portfolio optimization

Intermediate

- Good granularity of covers modelled
- Risk and behavioral models
- Regular models refresh

Basic

- Limited number of covers modelled
- Risk models only
- Yearly models refresh

Legacy software

AutoML
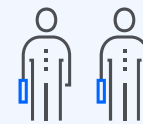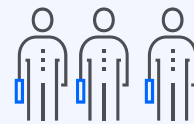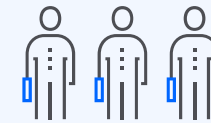
Non-scalable operations

Scalability possible

AutoML is a business enabler allowing to accelerate your technical sophistication journey
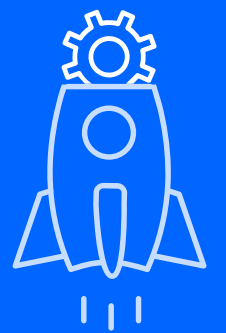
Where to divert the effort

Decision Making

▶ ▪ Focus on the why and no longer on the how

Business Intel

▶ ▪ Devoting time monitoring sales and loss ratio metrics will help the analyst identify profitable segments
▪ Marketing budget and channel optimization

Pricing Engine
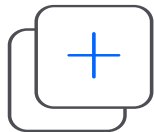
▶ ▪ Regain control of pricing model testing and price version deployments

Return Control to the Actuaries

▶ ▪ Actuaries responsible for price strategy and responding to competitor price changes
▪ Overall control of rates and deployment is returned to actuaries away from IT

Where to divert the effort

Payoff

New Datasets
Test new external datasets and engineered features

Identify Segments
Identify profitable segments underpriced by the market
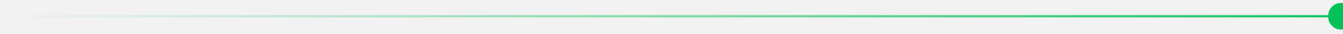
Ancillary Products
Transfer pricing sophistication to ancillary products e.g. breakdown cover

Tiered/Multi Product
Transfer the pricing sophistication to multiproduct which have more perceived value
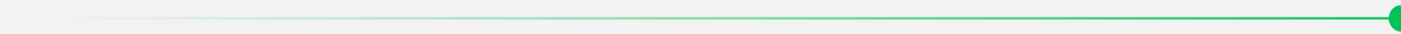
New Initiatives
Marketing campaigns, day one pricing for new products, group schemes

Domain knowledge wins over algorithms

Algorithms

Domain
knowledge

2

1
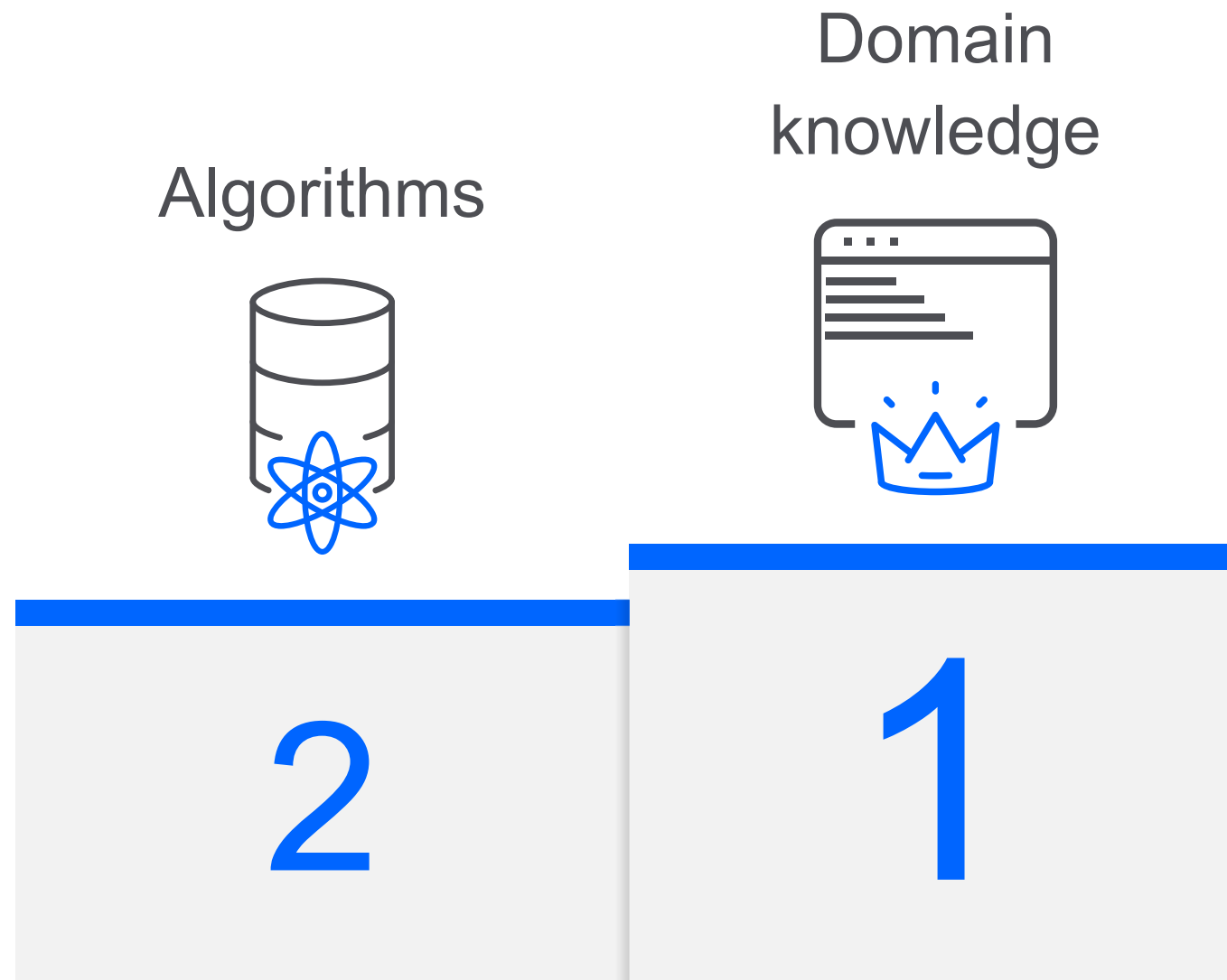
Check our website to stay up to date

Thank you for your attention!

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Video: William Patin / allroundMEDIA

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Professional experience

- Pricing consultant
- Pricing analyst for innovative mobility topics in Allianz Group
- Pricing analyst of P&C portfolio in Groupama Italy

Non project related experience

- Market Responsibility for Iberia and Latin America
- Reserving expertise on P&C portfolio

Clients/projects

- Technical and commercial rate making on motor portfolio
- Pricing committee member
- Competitive market analysis and Day-one pricing
- Demand modelling
- Pricing solution for new mobility topics (carsharing, micro-mobility)
- Telematics pricing and driving score
- Micro-zoning
- Discount analysis and clustering of motor agent network

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