plugin
ORGANIZED BY PM

Managing the new normal

Accelerating model building and decisions at scale

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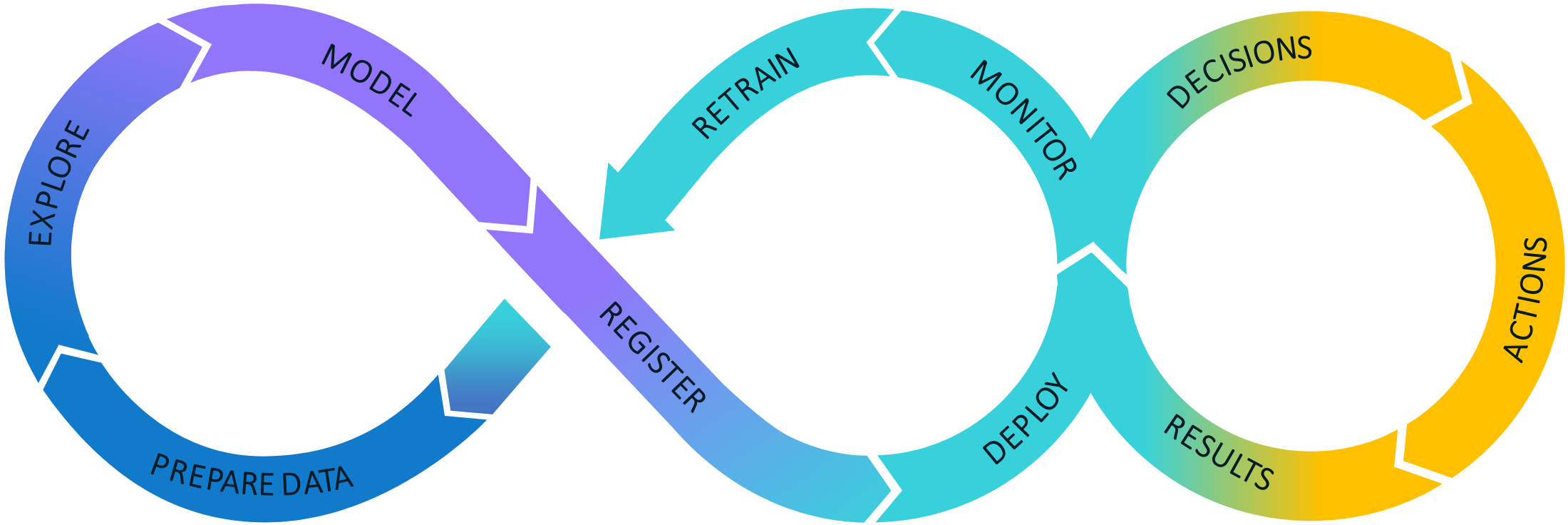
Data doesn’t drive your organization. Decisions do.

…operationalizing analytics with decisions



Data to Decisions Life Cycle

Operationalizing Analytics

Prepare

- **Access** - At-rest, in-motion, in-cloud, etc.
- **Extract** – Merge & Transform
- **Cleanse** – Standardize & Cluster
- **Profile** – Classify, Impute, Identify Target Variables
- **Govern** – Lineage

Build

- **Explore –** Analyze & Finalize data for Model Build
- **Discover –** Data Visualization & Reports
- **Develop** –Identify Model Techniques, Scoring Process, Model Pipeline
- **Validate Model** – Champion v Challenger, Benchmark Metrics, Calibration Techniques, Explain & Interpret

Deploy

- **Register –** Publish champion model to central model repository
- **Score –** Schedule model for scoring (real time / batch)
- **Manage Model** – Automatically Monitor Model Performance (skew, decay, underfit / over-fit), Version Control, Workflows for model re-train / re-build

Consume

- **Operationalize –** Augment model insights with decisions / business rules
- **Consume** – via Batch or Real Time API and integrate with external apps / on-demand systems (web / edge)

KEY STAKEHOLDERS ACROSS THE LIFECYCLE

1	2	3	4	5	6
Data Governance	Data Prep & Model Build	Test and Validate Models	Model Publishing & Monitoring	Decisioning & Model Consumption	Review Decisions
					
IT / BIU	BIU	BIU / Business	BIU / IT	BIU / Business / IT	Business

COLLABORATION

…technical debt in machine learning

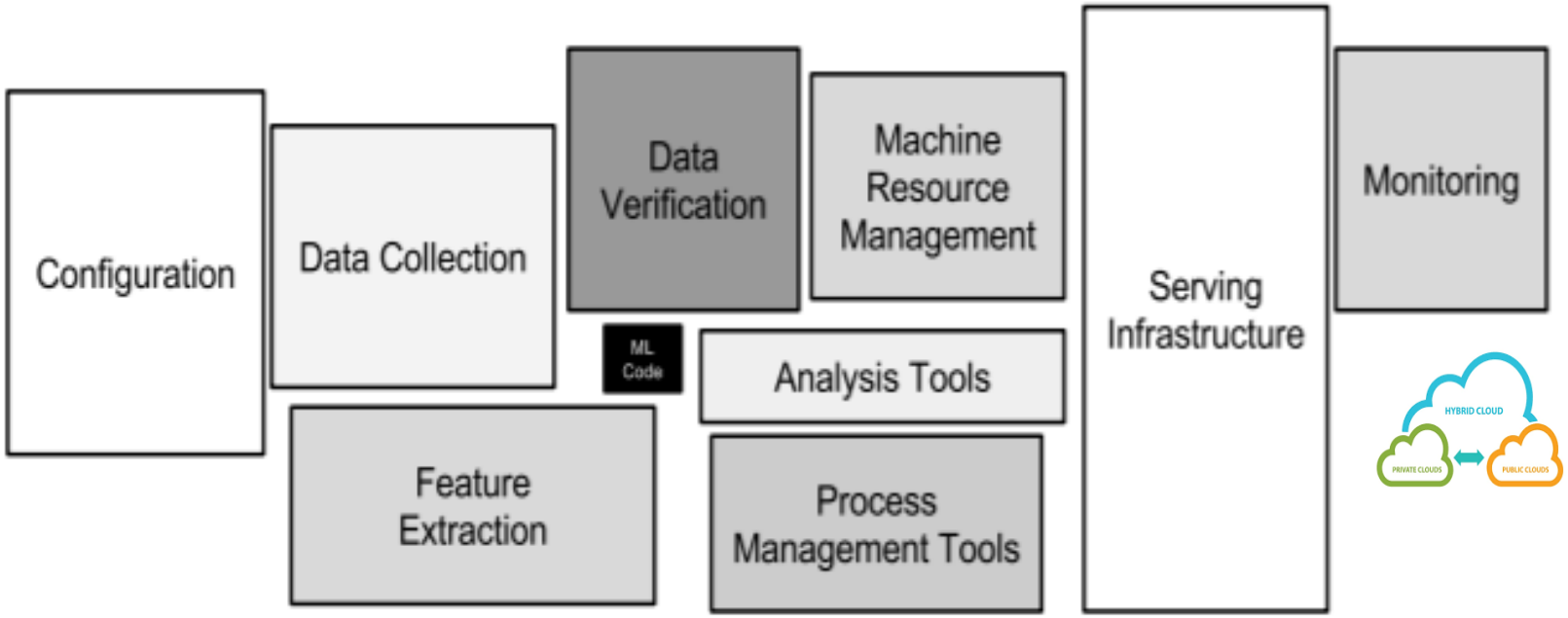


Figure 1: Only a small fraction of real-world ML systems is composed of the ML code, as shown by the small black box in the middle. The required surrounding infrastructure is vast and complex.

Technical debt *is the ongoing cost of expedient decisions made during code implementation. Technical debt tends to compound. Deferring the work to pay it off results in increasing costs, system brittleness, and reduced rates of innovation.*

D. Sculley, Gary Holt, Daniel Golovin, Eugene Davydov, Todd Phillips [Google, Inc.]
Dietmar Ebner, Vinay Chaudhary, Michael Young, Jean-Franc¸ois Crespo, Dan Dennison [Google, Inc.]
https://papers.nips.cc/paper/5656-hidden-technical-debt-in-machine-learning-systems.pdf

Track 1

Accelerating Model Building

Accelerate Modeling – Telecom Cross Sell Model

Problem Statement

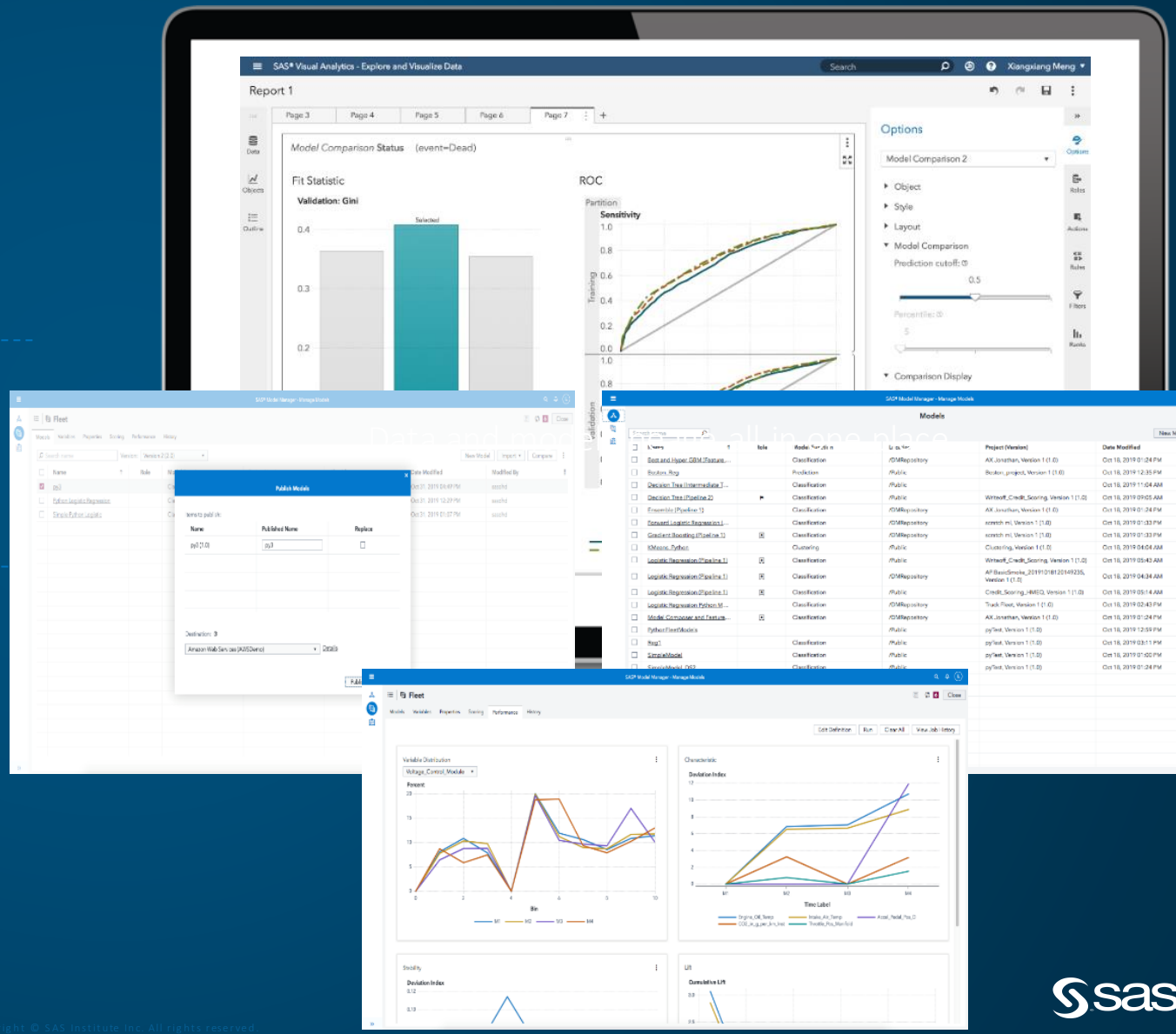
Predict future behavior and value of customer that are likely to purchase a product

Data

Transactional customer phone service data that includes customer attributes and historic upsell/ cross sell behavior

Solution

Use SAS Platform with Python to boost the data scientist productivity by building, governing and monitoring hundreds of models In parallel at a production level efficiency



More Models

More Features

Streamline Data Preparation

More Complex Data

Auto-Tune

Collaborate Across Skill Levels

More Granular Segments

Fast In-Memory Multi-threaded Technology

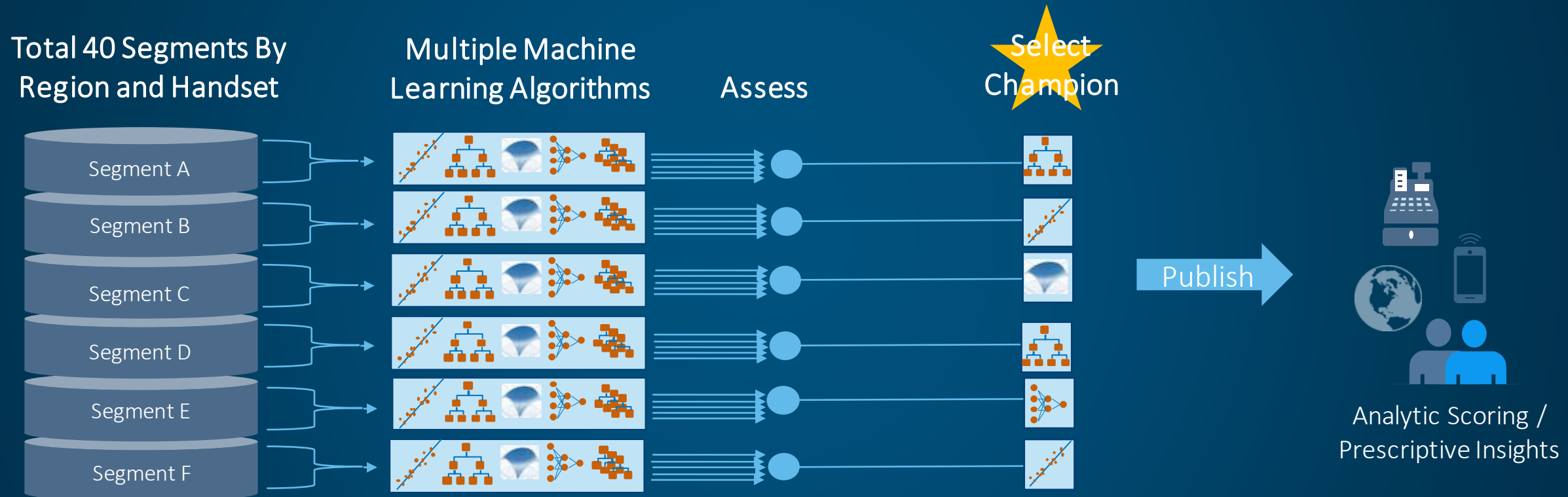
Compare Machine Learning Algorithms

Monitor & Refresh

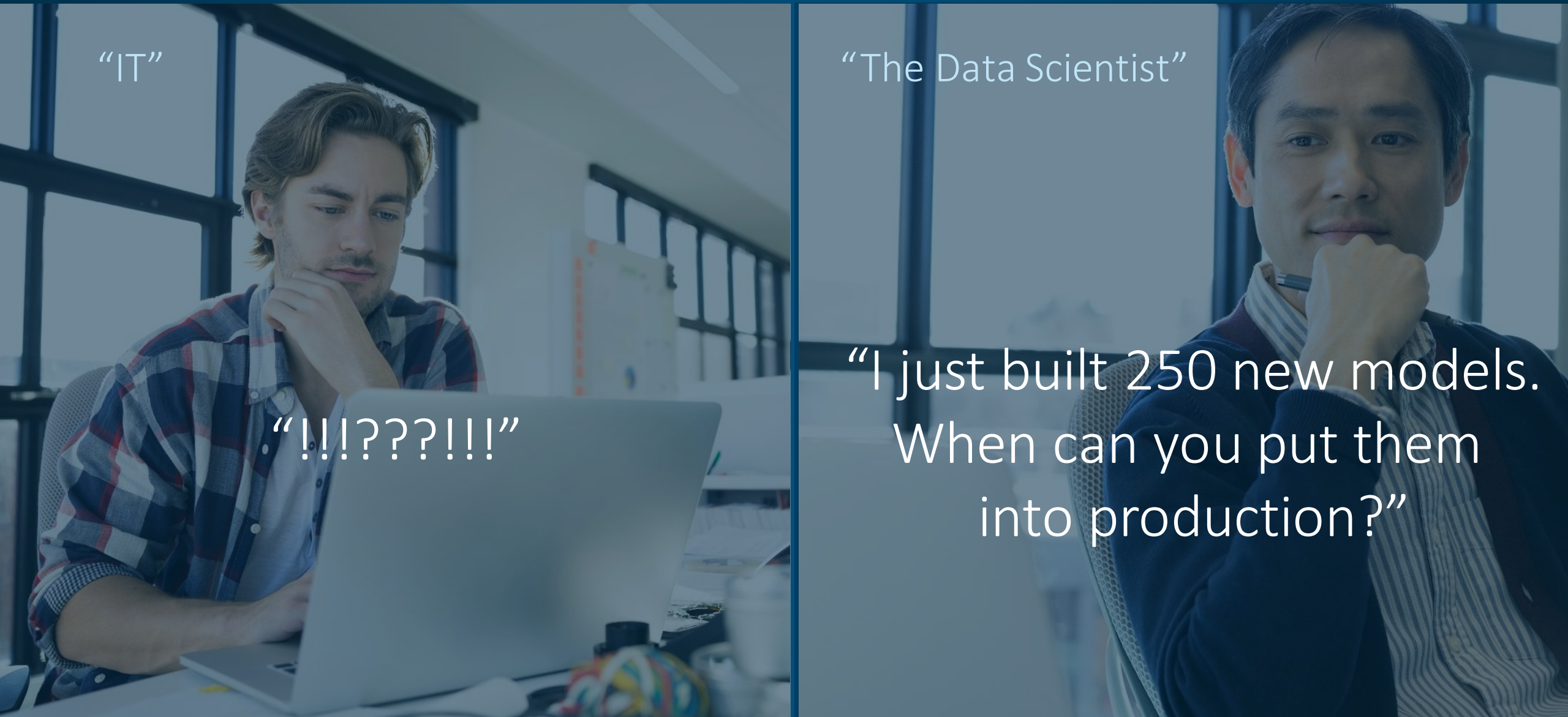
Iterate Faster

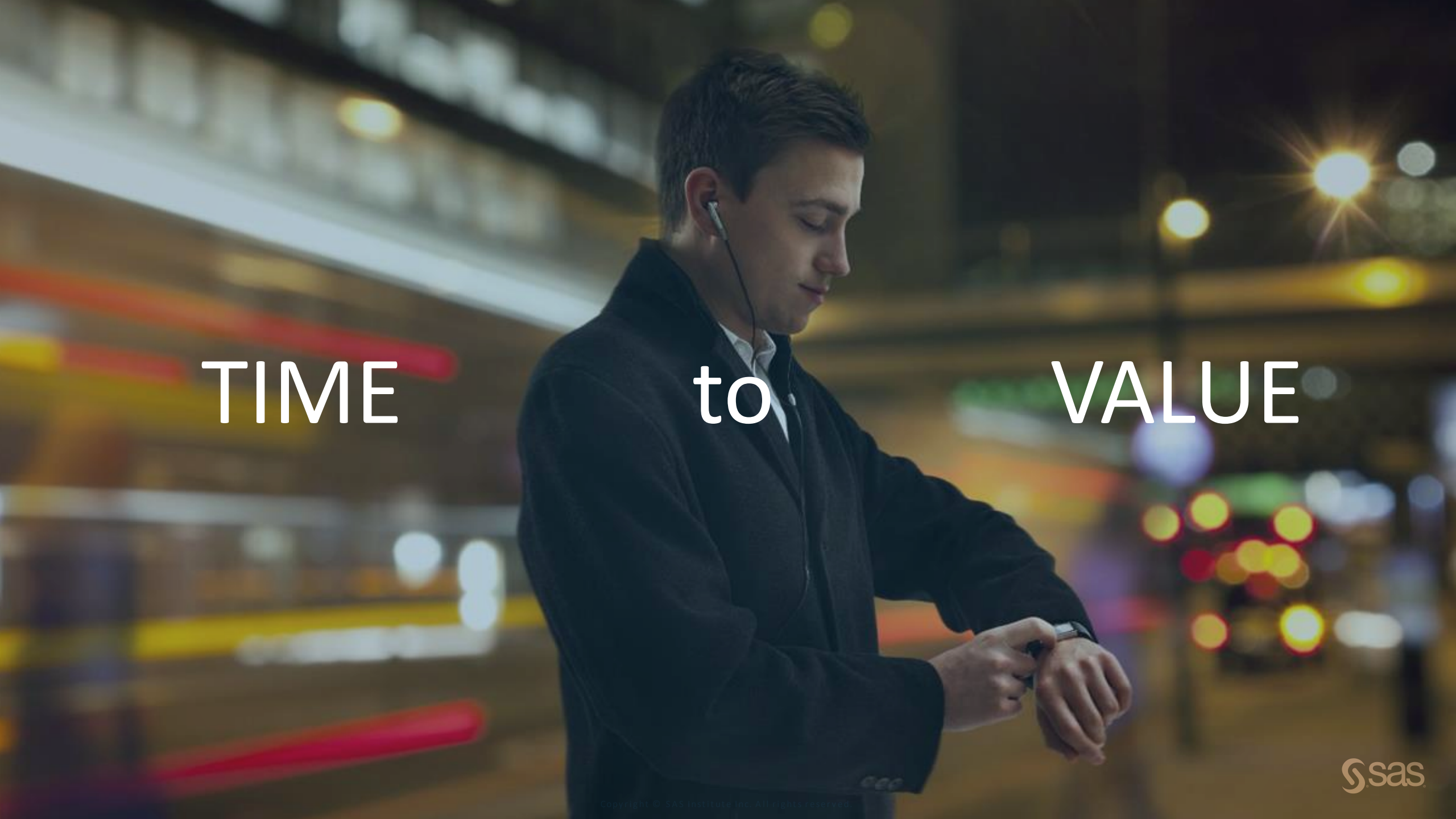
sas

Boost Model Performance & Data Scientist Productivity



Now you have lots of models…what now?




TIME
to
VALUE

Track 2

Accelerating Decisions in real-time

We simply Uber'ized them

WHAT DOES IT MEAN

ZAPLY

- Insurance on the Go
- Pay for services as you need them.
  Be unbound! Be free!

- Insure your articles for days or even hours, not for the whole year. You decide!

Demo Storyboard

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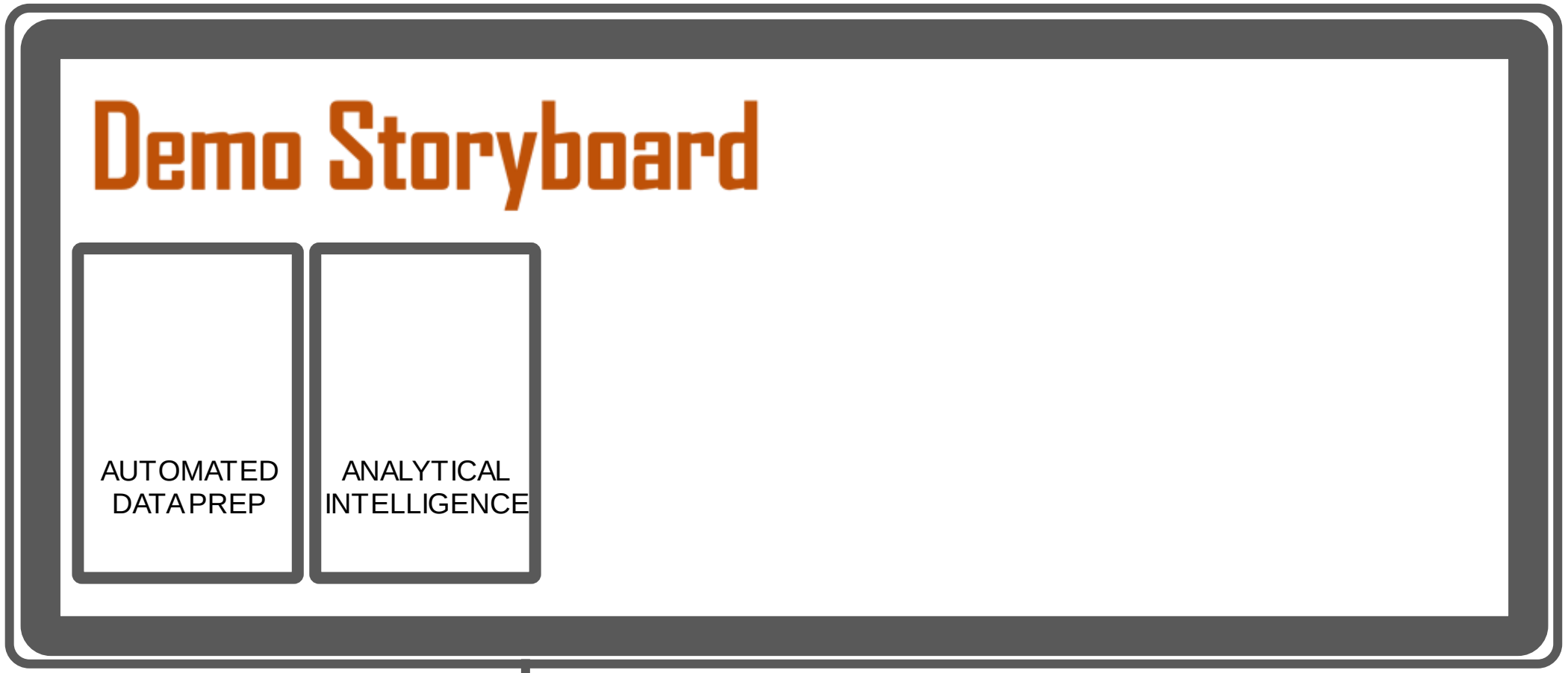

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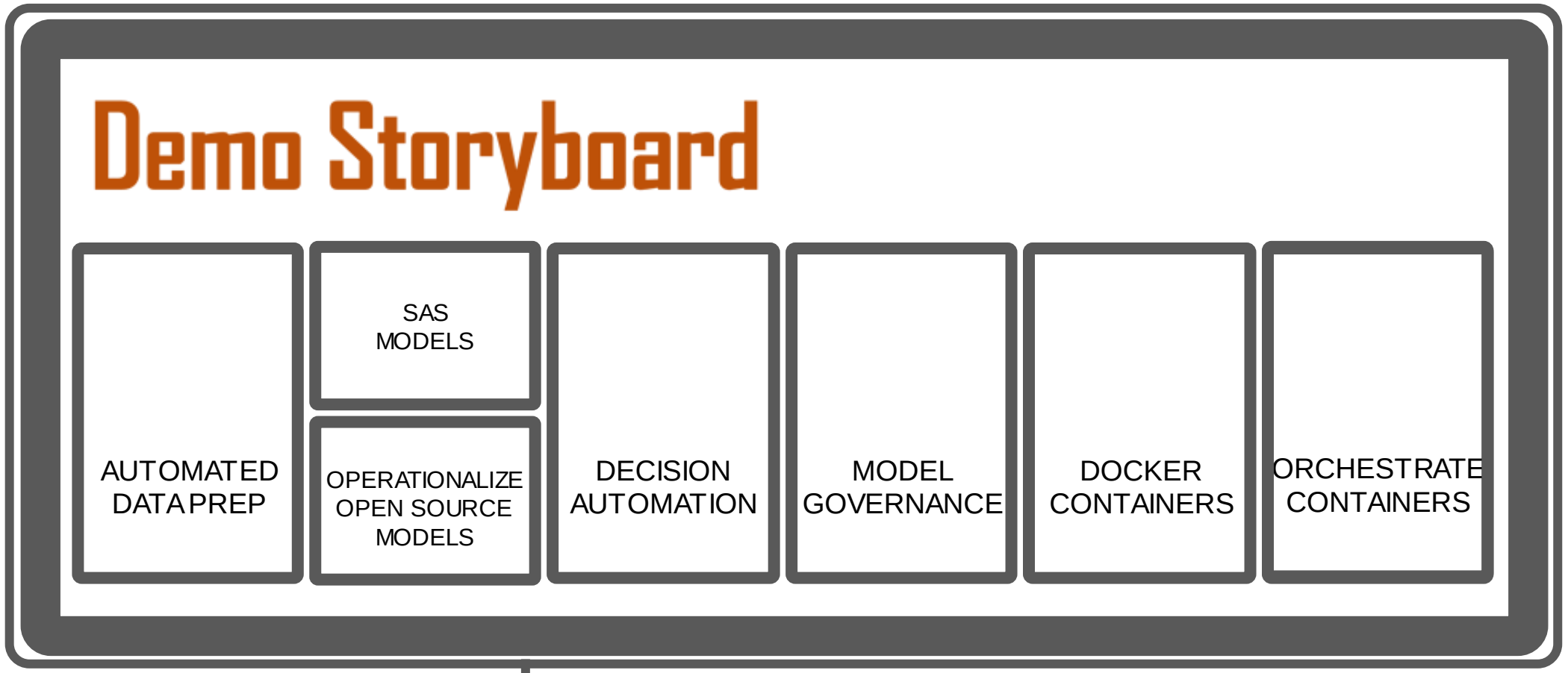

Demo Storyboard

SHOWCASE SCALING & ELASTICITY

ORCHESTRATE CONTAINERS

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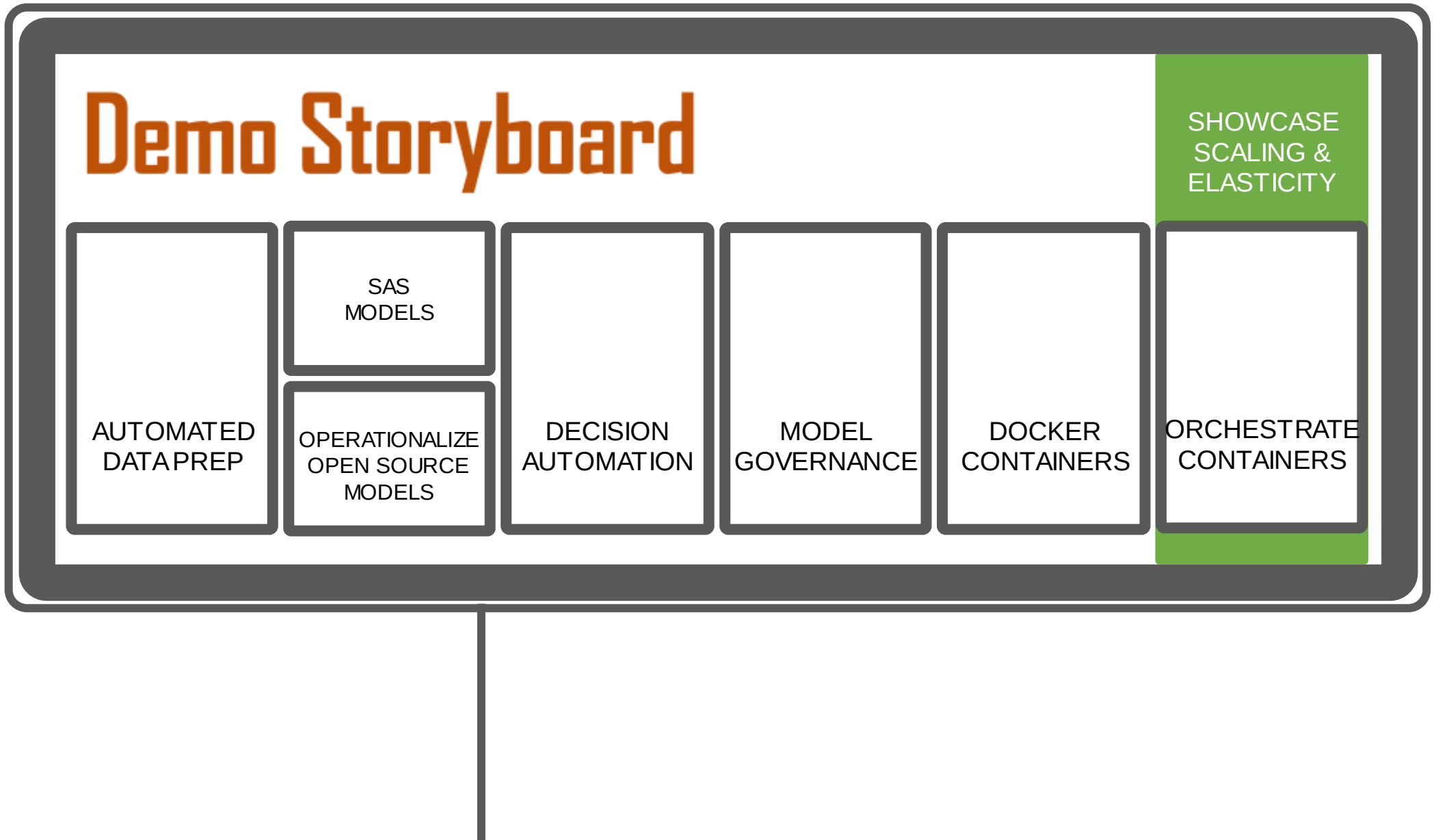
Demo Storyboard
SHOWCASE SCALING & ELASTICITY
AUTOMATED DATA PREP
SAS MODELS
OPERATIONALIZE OPEN SOURCE MODELS
DECISION AUTOMATION
MODEL GOVERNANCE
DOCKER CONTAINERS
ORCHESTRATE CONTAINERS

KEEP
CALM
IT IS
DEMO
TIME