

Be Your Personal Best

Customer Strategy & Planning 2018

23rd – 24th April 2018
The Majestic Hotel
Harrogate



Raising Standards in
Customer Operations



#ForumConf

Be Your Personal Best

Genesys Decisions Automated Forecasting

12:30 Tuesday, 24th April 2018



Raising Standards in
Customer Operations



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Genesys – Automated Forecasting

Before we start

- Introduce yourself on your table
- What would you like to learn from today's session?

- Showcase: Automated Forecasting
- Round table Discussion.
- Opportunity for Questions.



Dale Owen

Lloyds Banking group
Resource Optimisation Manager



Automatic Forecasting

Tommy Templin

Background

- **Time series:** a series of values of a quantity obtained at successive times, often with equal intervals between them.
- **Assumption:** Past patterns *repeats itself* into the future
- **Goal:** Minimizing (*not eliminating*) forecast errors
- **Key challenges:**
 - Ability to predict *long-term high granularity* data
 - Need to account for *outliers*
 - Ability to identify *seasonal and trend patterns*
 - Ability to choose the *best method and parameters*
 - Accounting for *calendar-based anomalies*
 - Continuous *feedback loop and learning* from infusion of new data

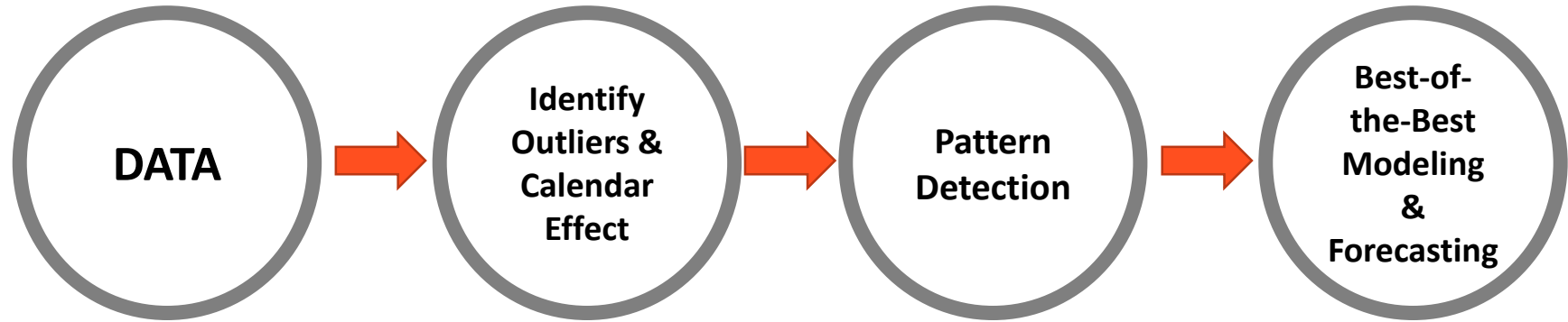
Vision

“Ingest *any* kind of time series data, and
return the *best possible* forecast.”

Value Proposition

- “**Easy-button**” approach that automatically:
 - Performs **feature engineering** transformation and data clean-up
 - Detects and deals with **Outliers**
 - Detects **periodicity** and **trends** pattern
 - Optimizes using **cross-validations**
 - Selects **best-of-the-best method** and optimal set of parameters to use
- Architected as an **independent** service, to be able to easily plug-in in wide variety of applications and products, or to sell as a stand-alone service.
- The Engine is alive. It is growing with continuous infusion of the most **cutting edge algorithms** in the library, inspired from the **latest research** in the field.
- We leverage **best practices** in data science and in the industry.

Summary Capability



We focus heavily on historical data to predict change in values

- Historical Data Clean-up
- Missing Data Imputation
- Temporal Stream Aggregate
- Distribution Transformation
- (future) Causal Time Series
- (future) Correlated Time Series

We evaluate properties of data and auto detect anomalies

- Identify 3 types of outliers: *random pulse, temporal change, level shifts*
- Identify holiday effect
- Identify lead / lag in calendar effect

Detect long-term patterns to ensure tactical accuracy

- Detects seasonality and trends
- Performs decomposition of time series data
- Ensure hierarchical temporal stream consistency via distributions

Perform extensive cross-validation to select best method

- Sophisticated fold strategy and scoring mechanism
- 20+ methodologies, including ARIMA, HW, Decomp
- (future) Multiple regression
- (future) Ensemble methods

Decisions Demo

 GENESYS™



- What was the most significant part of this for you?
- Which ideas may be transferable to your organisation?
- What is your top question?

