# Case Study:

## Predicting Business Opportunities in Heavy Machinery Servicing

### The Business Problem

- Service managers were struggling to predict which of the thousands of their customers' machines might be coming due for service each week.
- Customers were missing service intervals, risking their warranties and/or taking their business elsewhere at the last minute.
- Workshop pipelines were being managed *ad hoc*.

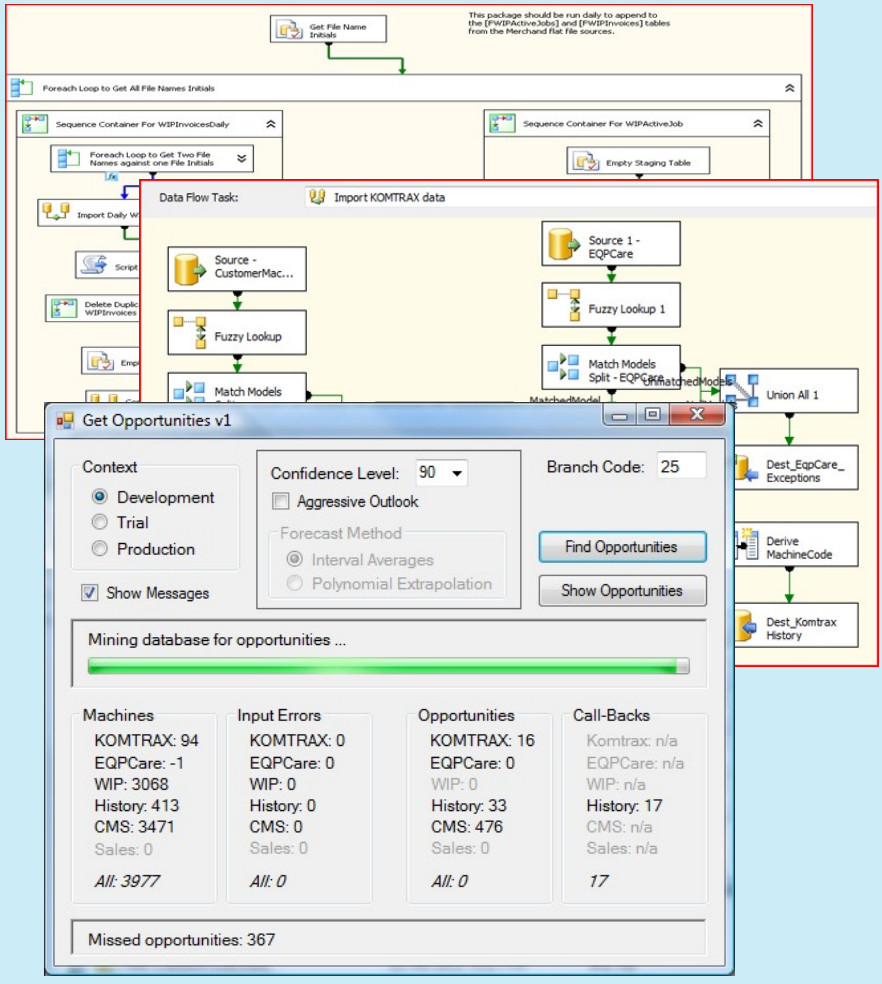
### The Solution

#### Inputs

- Mainframe-generated invoice history and workshop tracking reports
- Sales history (SAP)
- Database of laboratory (engine oil and water) analysis
- Database of telemetry on machine operating conditions

#### Components

- Data warehouse and ETL created with Microsoft SQL Server, SQL Server Integration Services
- Application created in .NET
- Bespoke data cleaning, predictive analytics, and rules engine (C#)




#### Benefits

- Prediction of next service interval at machine and fleet level
- Error-tolerant forecasting engine makes best guess from conflicting inputs or missing data
- Full transparency to user, with adjustable confidence interval and forecast horizon
- Forecasting window allows for timely customer contact and efficient workshop scheduling
- Automatic collation of CRM and fleet data provides full view of customer and asset history
- Tracks missed opportunities as an indicator of potential ROI for optimal usage

↑ ***Workshop business, Customer confidence***

↓ ***Workshop bottlenecks, Warranty lapses***

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