



Transforming a world of data into a world of intelligence

- Analytics for Smart Cities

Stefan Baciuc

Country Manager
SAS Romania

SAS customers are in 149
countries at
83,000 sites



4 DECADES OF EXPERIENCE

Finance and Retail

Government

Fraud & Security

Manufacturing and Energy

Insurance

Health and Life Science

SAS for Smart Cities



Public Safety



Revenue and Economics



Equipment Performance



Health and Human Services



Utilities, Water & Sewer

Value of Analytics

Informed
Decisions



Informed
Action



Service
Delivery



Response
Time



Projection
Accuracy



Maintenance
Costs



Equipment
Breakdowns



Downtime



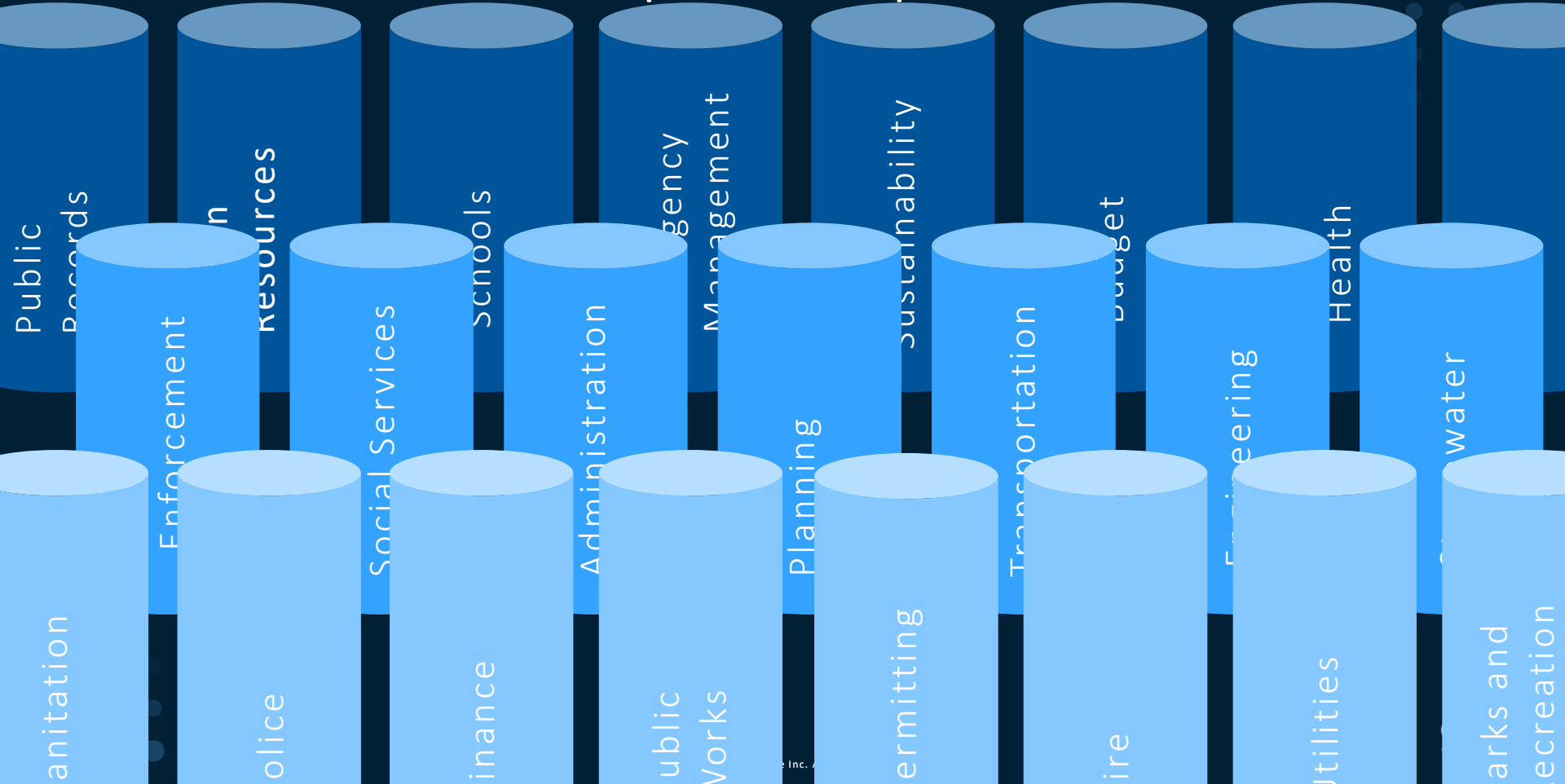
Revenue
Generation



Quality of Life

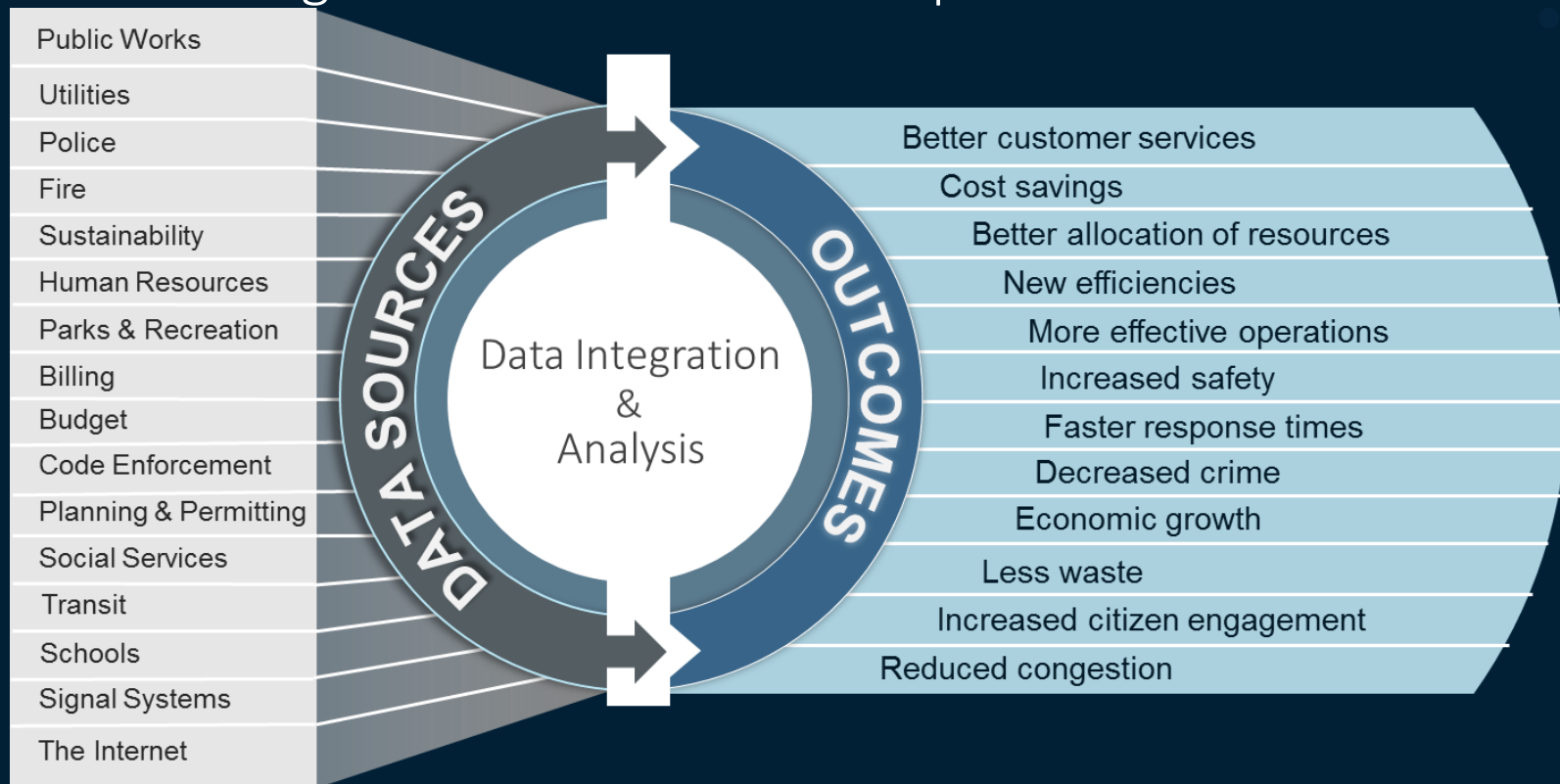


Silos of Department-Specific Data

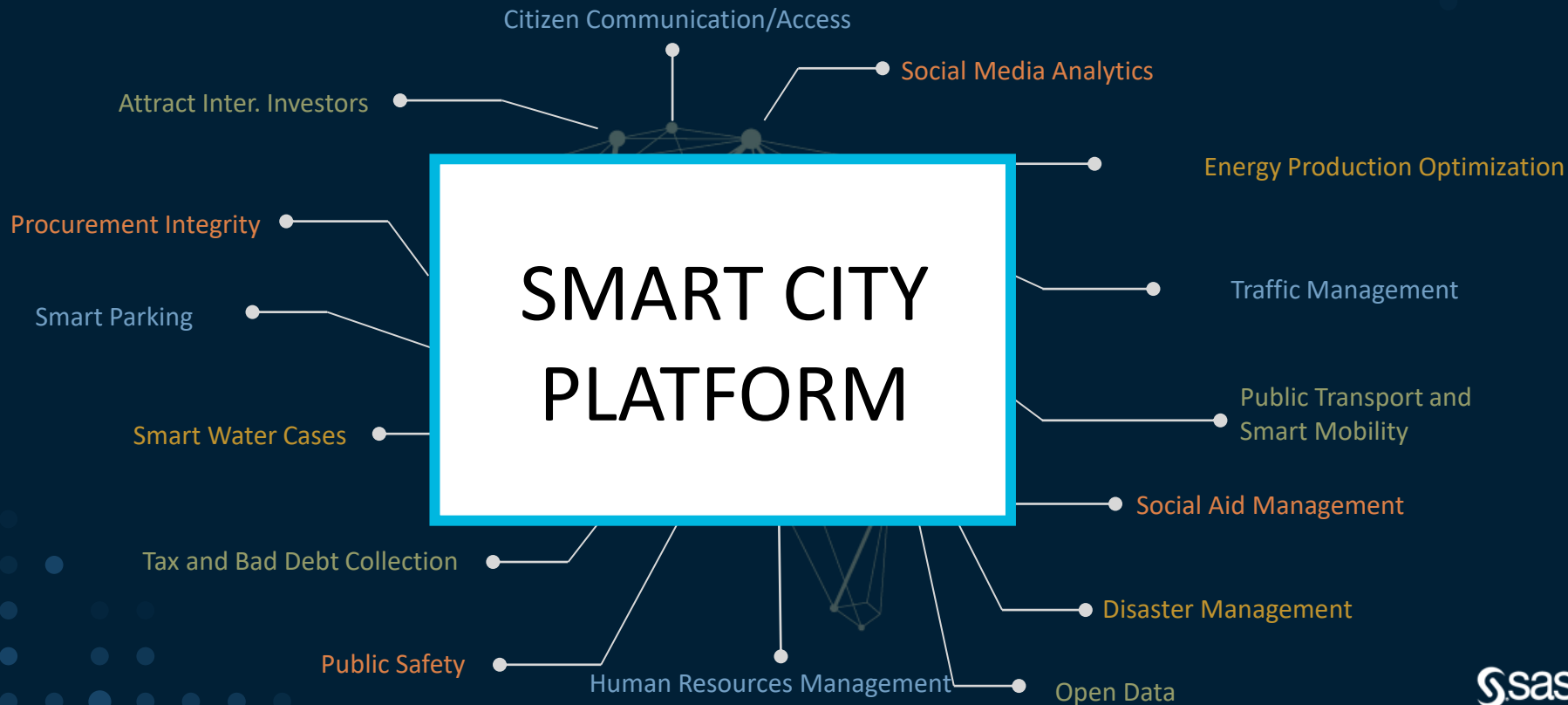


The Analytics Platform

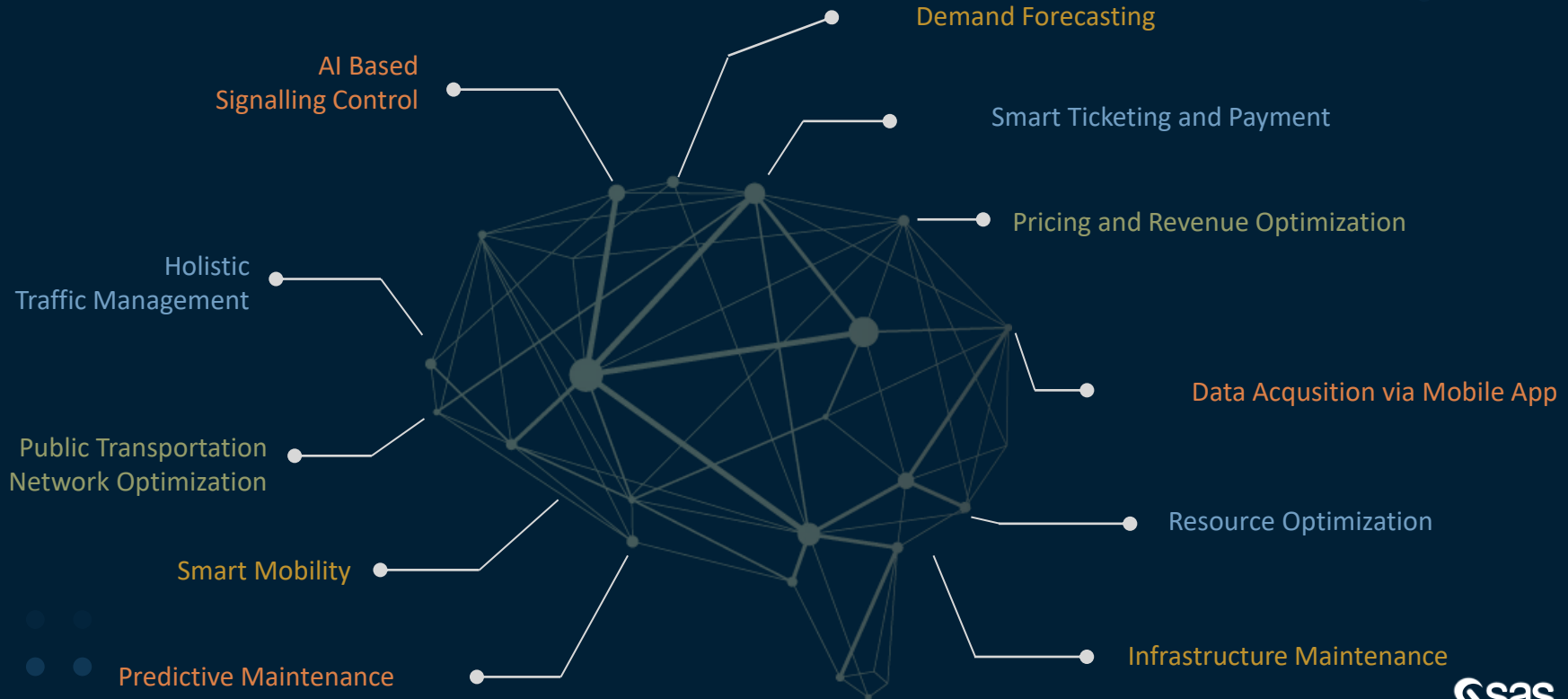
Integrated Use of Data for Improved Outcomes



ANALYTICS FOR A SMART CITY



TRANSPORTATION PROJECTS



Spanish Public Transport Company



Key Challenges

- Determining which operations are profitable—and which are not.
- Lack of a precise costs system for accurately assessing direct and indirect costs of its services—and transferring those costs to individual lines and buses.
- Making better business decisions and improving citizen services.

“We now have detailed knowledge of all costs, direct and indirect, by activity—allowing us to make better business decisions and provide better services to citizens.”

Deputy Director of Finance

How SAS® supported the process



Results

- To strengthen its cost control system, the company launched an activity-based costing project using SAS® Cost and Profitability Management.
- Able to obtain accurate information on costs and profitability of each line and bus.
- Comprehensive cost analysis to make better operational decisions about the number of buses needed on a particular route and improvements to customer services—while optimizing scarce resources.
- Information from SAS Cost and Profitability Management is shared in separate reports to senior management, business managers and operations centers.

Powered by

SAS® Advanced Analytics

Ankara EGO (Electricity, Gas & Bus Operation Organization) Smart City : Digital Transformation

Key Capability:

Smart City Analytics

Ankara Metropolitan Municipality (AMM) will implement a digital infrastructure project for enhancing citizen services and improving government engagement as part of a four-year Ankara Smart City Transformation Program.

The objective of the project is to improve existing bus operations, expand public transportation services, lower operational costs and support sustainable development through greater energy efficiency and reduced environmental footprint.



Integrate data from multiple source systems to analyze bus operations & minimize costs



Effectively plan public transportation services using network analytics



Optimize transportation routes using advanced algorithms



Achieve sustainable development with reduction in fuel cost

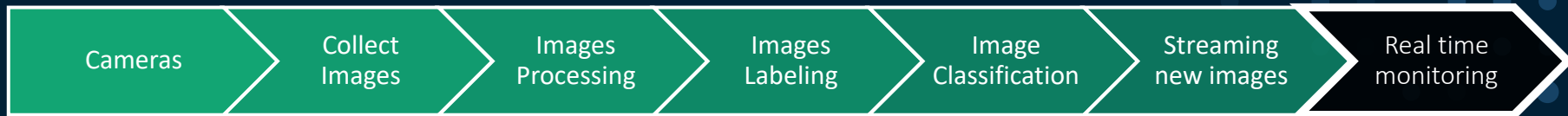


Monitor and manage* transportation assets to minimize maintenance costs

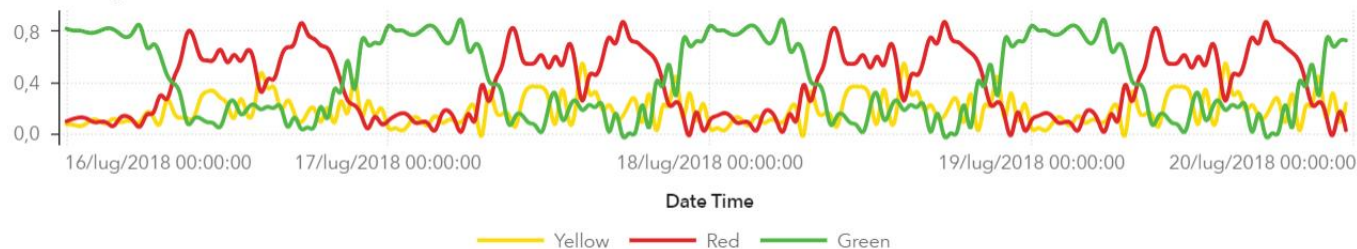
* In Future

ROME - TRAFFIC MONITORING





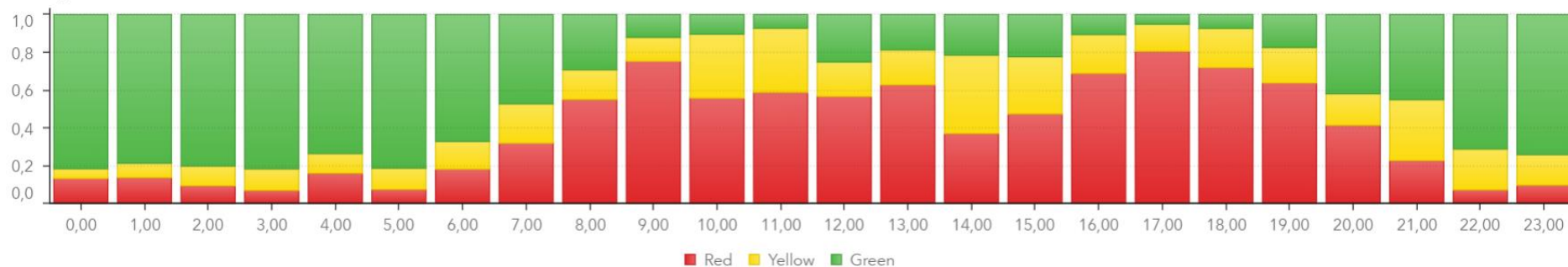
Probability Time Series



Actual Status



Hourly distribution



SAS for Smart Parking

A solution that enables near real-time identification of parking space occupancy based on the detection and categorization of objects in the video stream from parking monitoring cameras.



Probability of
successful parking

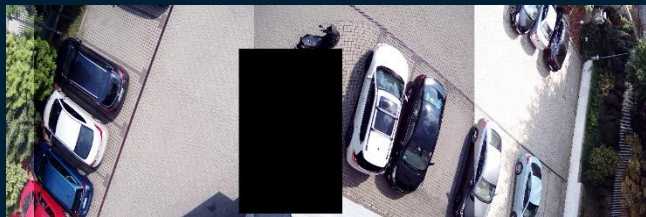
Place occupancy %

Parking demand
forecasting

Available parking
spaces

Transport type
recommendation

Accuracy: 93,7%
Training objects: over
1800



Analytics for SMART WATER

Infrastructure Optimization

- ✓ End-to-End Monitoring of the Water System
- ✓ Energy Consumption and Management of Pumps
- ✓ Automated Inventory Management and Preventive Maintenance
- ✓ Identifying Loss and Leakage
- ✓ Planning and Optimization of Investments

Water Analytics

- ✓ Management of Water Supply and Resources
- ✓ Forecasting the Demand
- ✓ Wastewater Estimation
- ✓ Water Quality Control and Estimation

Reputation management

- ✓ Social Media Analytics
- ✓ Real-Time News Stream Tracking
- ✓ Control of Purchasing Processes
- ✓ Fraud Detection

Other Examples

- ✓ Creating a Common Data Model and Architecture
- ✓ Managing inaccurate or corrupted data
- ✓ Income Assurance

Analytics for WASTE MANAGEMENT

Digital Transformation in Waste Management

Waste Collection
Process

Maintenance Excellence

Operations Excellence

Analytics Focus Areas

Waste Demand Forecasting

Pick up Scheduling & Route
Optimization

AI in Waste Segregation

Fleet Tracking & Predictive
Maintenance

Turbine Performance Maximization

Spares Forecasting &
Inventory Optimization

Induction Fan Condition Monitoring and
Predictive Maint.

Turbine Degredation RDA

Boiler Process Anomaly Detection

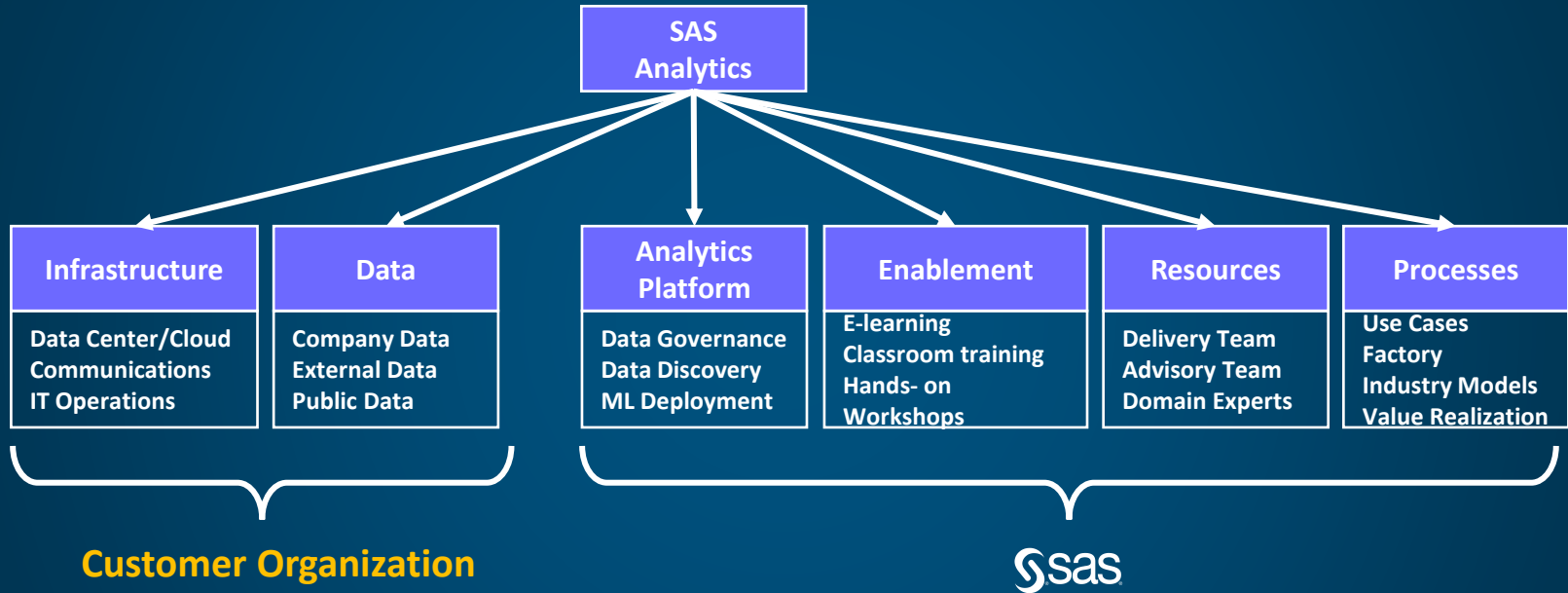
Flue Gas Process Optimization

Predictive Control of Electrostatic
Precipitator

ACC Fan Sequence Optimization

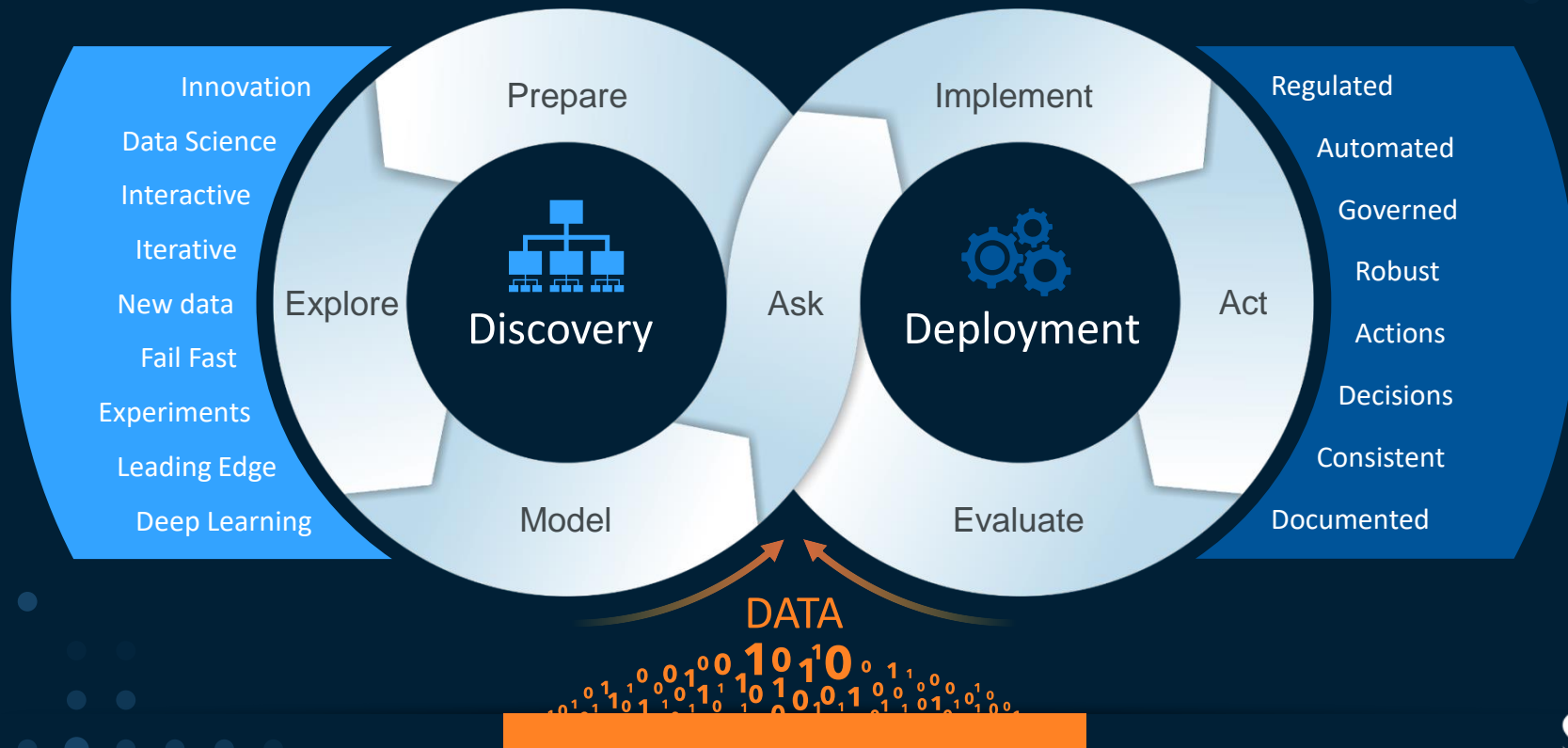
Waste Management Infrastructure Planning & Optimization

Analytics Center of Excellence



Scalable Analytics Platform

Covers Entire Analytics Lifecycle



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Thank you

Questions?

stefan.baciu@sas.com

sas.com

