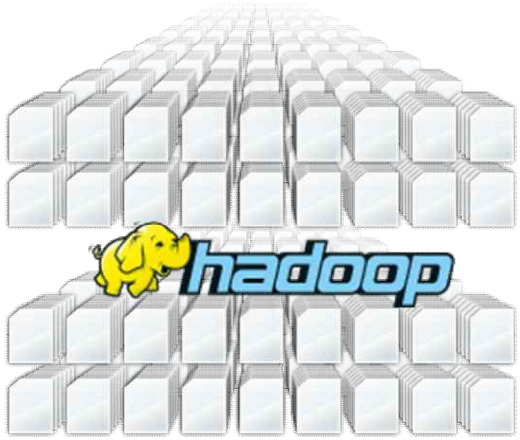
HADOOP 정글 헤쳐나가기

DATA TO VALUE

2015.4.3

WHY HADOOP?



OPEN SOURCE

MASSIVE SCALE

FAST PROCESSING

COMMODITY COMPUTING

DATA REDUNDANCY

DISTRIBUTED

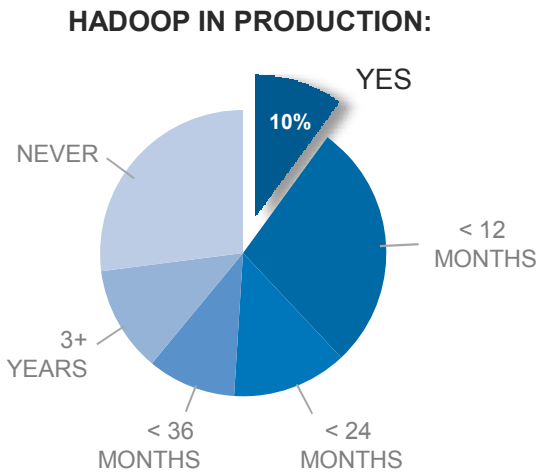
Learn more ›

WHY HADOOP?

- Hadoop will soon become a ~~*replacement*~~ ***complement*** to:
  - Business Intelligence;
  - Data Warehousing;
  - Data Integration;
  - Analytics.

- 하둡 적용의 첫번째 목적 : Analytics (71%)

- 하둡 적용의 장벽 :
  - 내장된 분석 기능을 가지고 있지 않음
  - 비용 : 매우 많은 코딩으로 인한 비용 상승



SOURCE: 10 Myths About **Hadoop** - TDWI Best Practices Report

WHY SAS?

ANALYTICS

IN-MEMORY

HIGH-PERFORMANCE

DATA MANAGEMENT

BUSINESS INTELLIGENCE

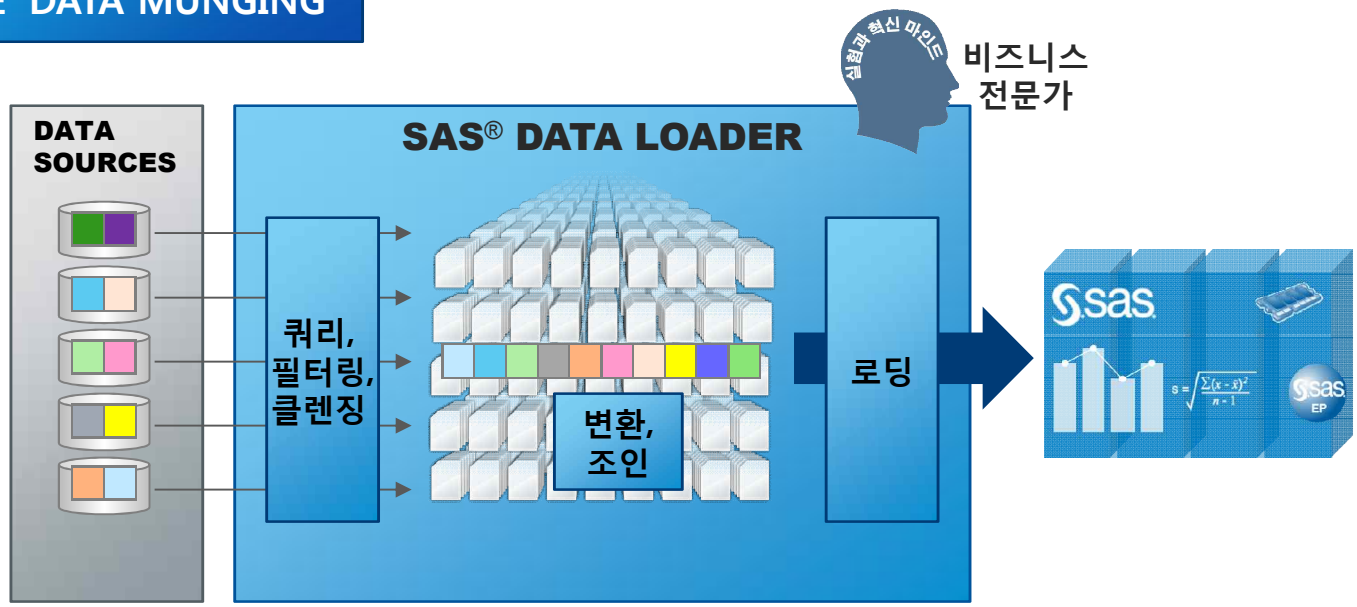
DATA VISUALIZATION

Learn more ›

sas THE POWER TO KNOW.

(1) DATA PREPARATION

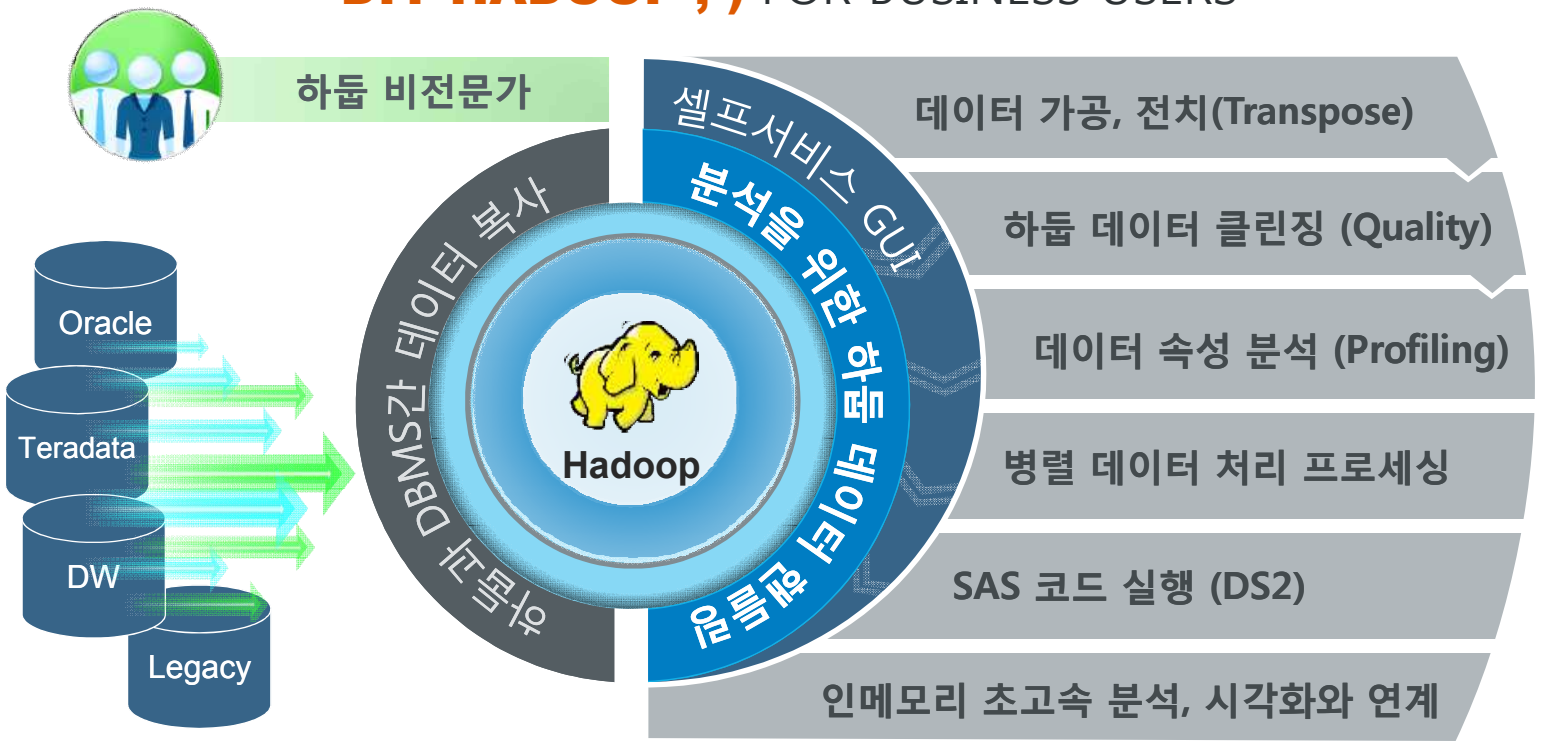
SELF-SERVICE 'DATA MUNGING'



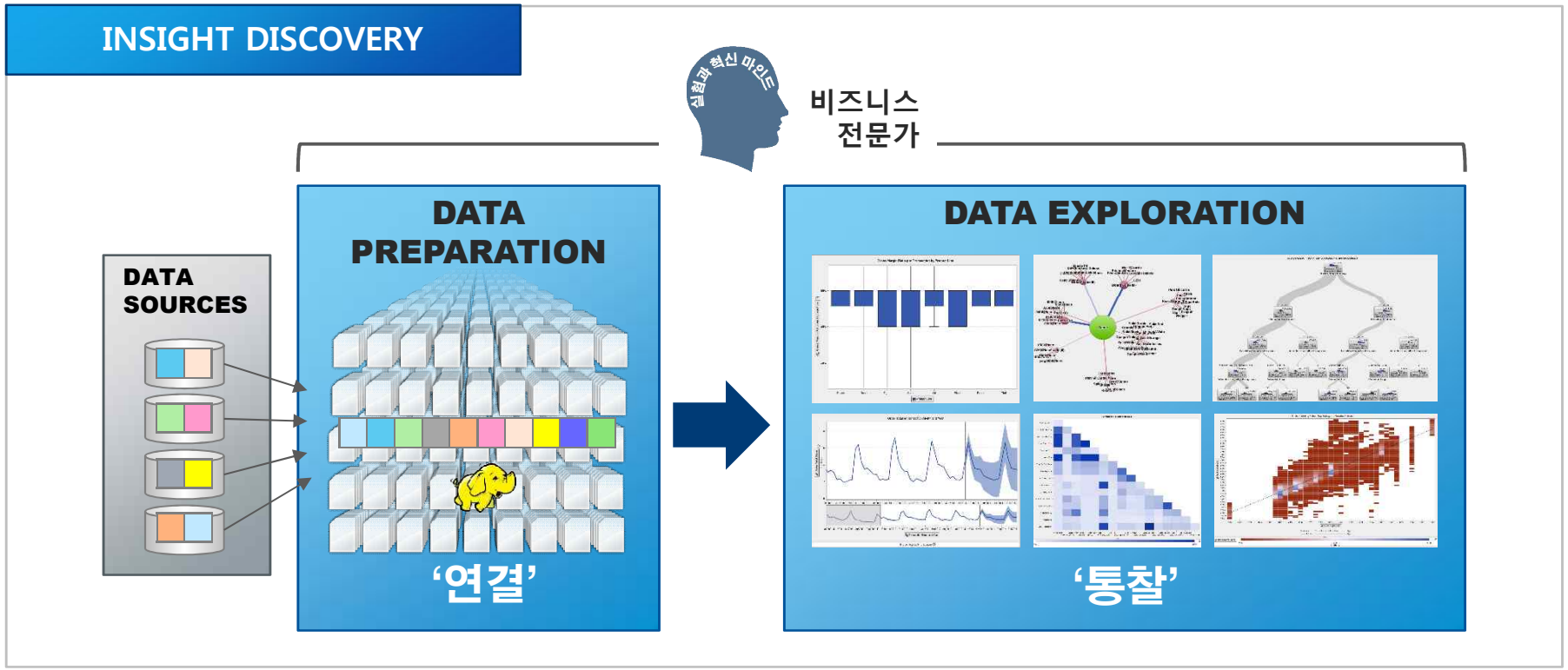
Hadoop 사용의 기술적 장벽 낮춤 ➔ IT의 부담 감소 ➔ Big Data의 활용 가치 증대

SAS DATA LOADER FOR HADOOP

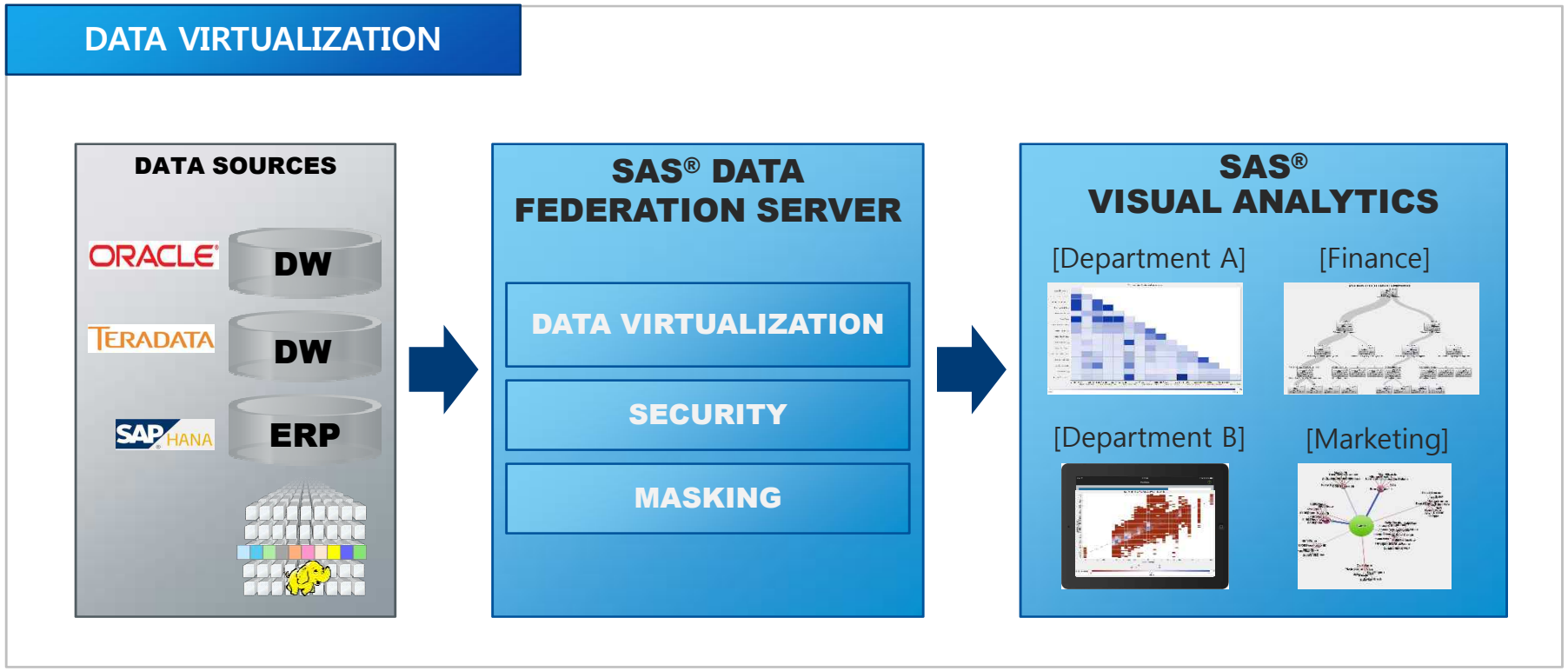
- **DIY HADOOP ;-)** FOR BUSINESS USERS



(2) DATA EXPLORATION

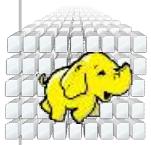


(2) DATA EXPLORATION



(3) MODEL DEVELOPMENT

MODELING ALGORITHMS ON HADOOP



SAS® ANALYTICS

Data Manipulation
- Aggregate
- Compute
- Update
- Append
- Set
- Schema
- DeleteRows
- DropTables
- PurgeTempTables

Evaluation, Deployment
- Assess Misclassification matrix Lift, ROC, Concordance
- Score
- Training / Validation

Data Exploration
- Boxplot
- Corr
- Crosstab
- Distinct
- Fetch
- Frequency
- Histogram
- KDE
- MDSummary
- Top K

Descriptive Modeling
- Association
- Path Analysis
- Clustering (k-means)
- Clustering (DBSCAN)

Predictive Modeling
- Decision Tree
- Forecast
- Gen Linear Model
- Linear Regression
- Logistic Regression
- Random Forests
- Neural Networks

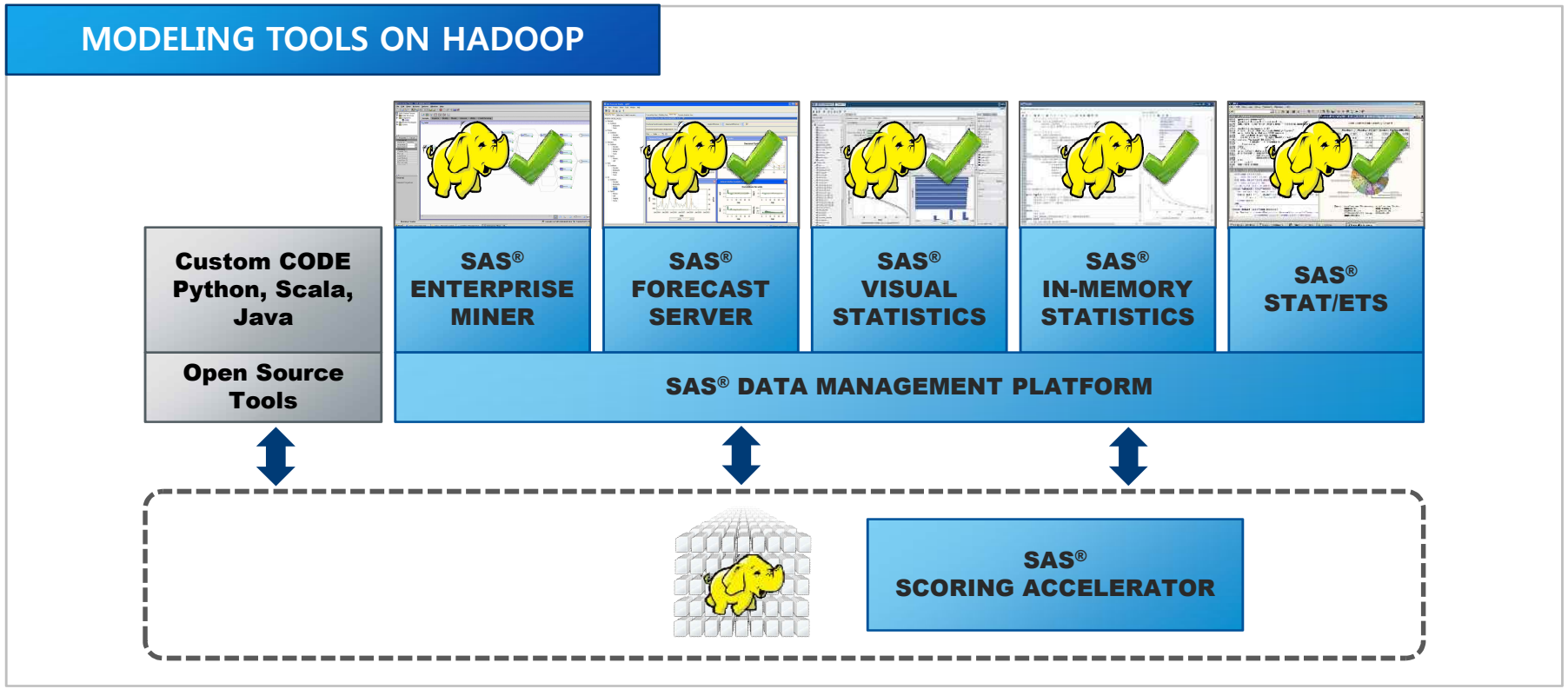
Utilities
- Where
- GroupBy
- TableInfo, ColumnInfo, ServerInfo
- Partition, Balance
- Store, Replay, Free
- Table, Promote

Text Analytics
- Parsing
- SVD
- Topic generation
- Document projection

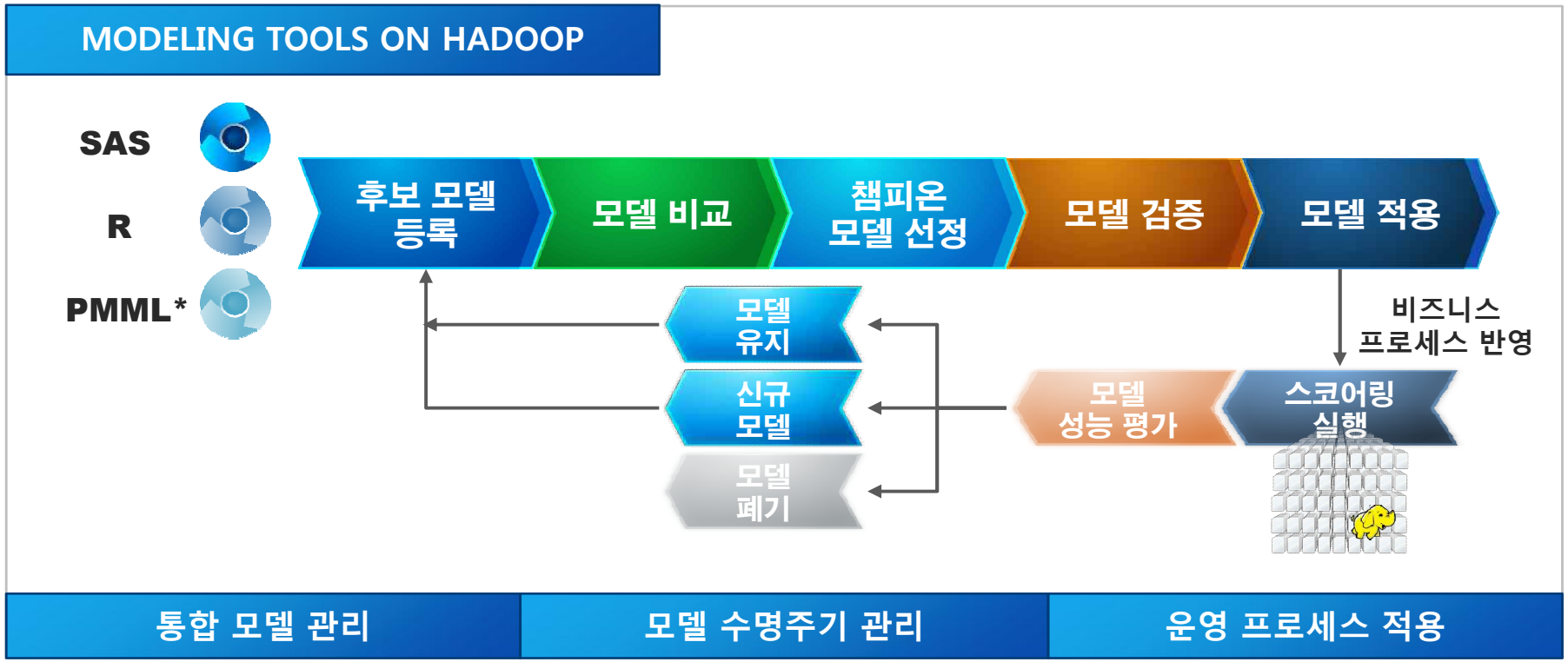
Recommendation Systems
- Association
- Clustering
- kNN
- SVD
- Ensemble

High Performance Modeling
- Statistics
- Data Mining / Text Mining
- Forecasting
- Optimization

(3) MODEL DEVELOPMENT



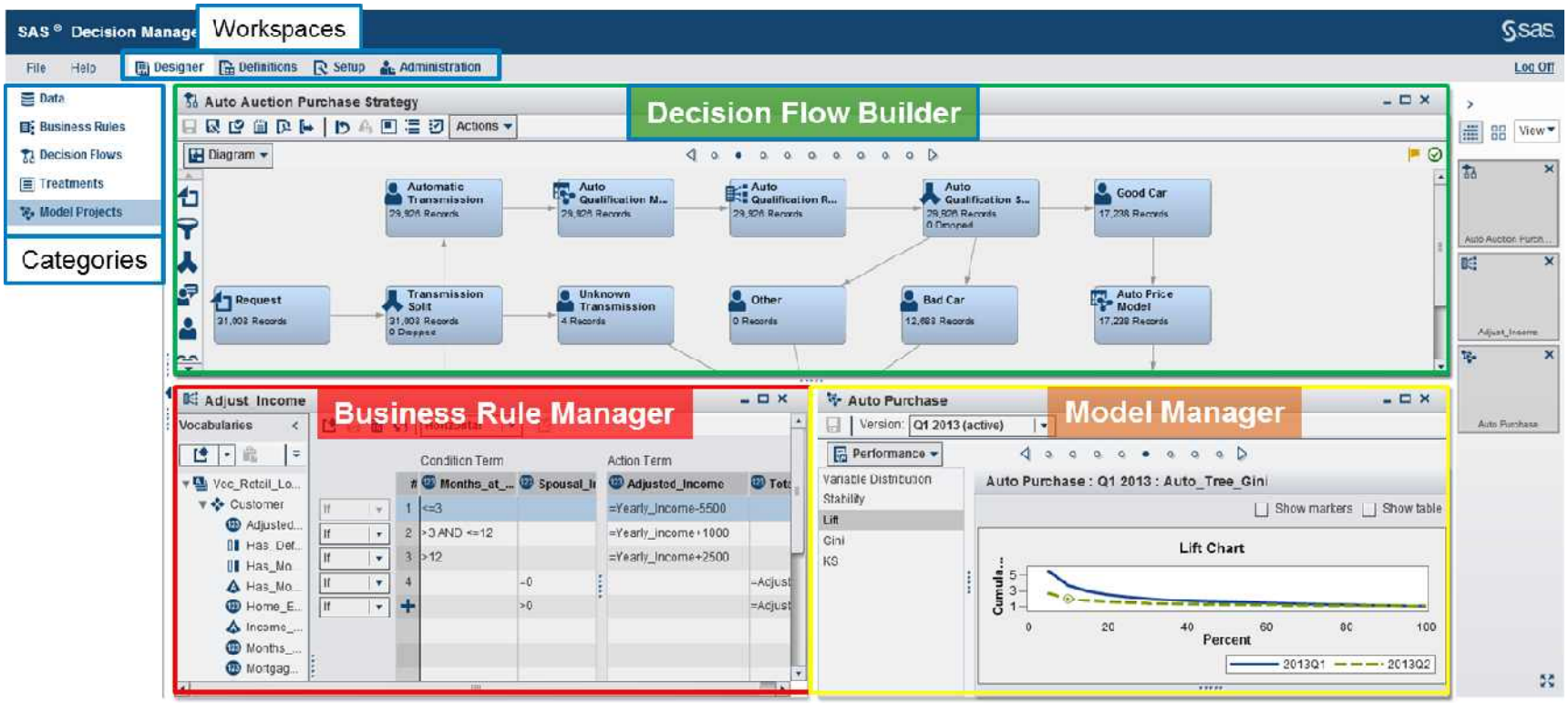
(4) MODEL MANAGEMENT



* PMML : Predictive Model Markup Language

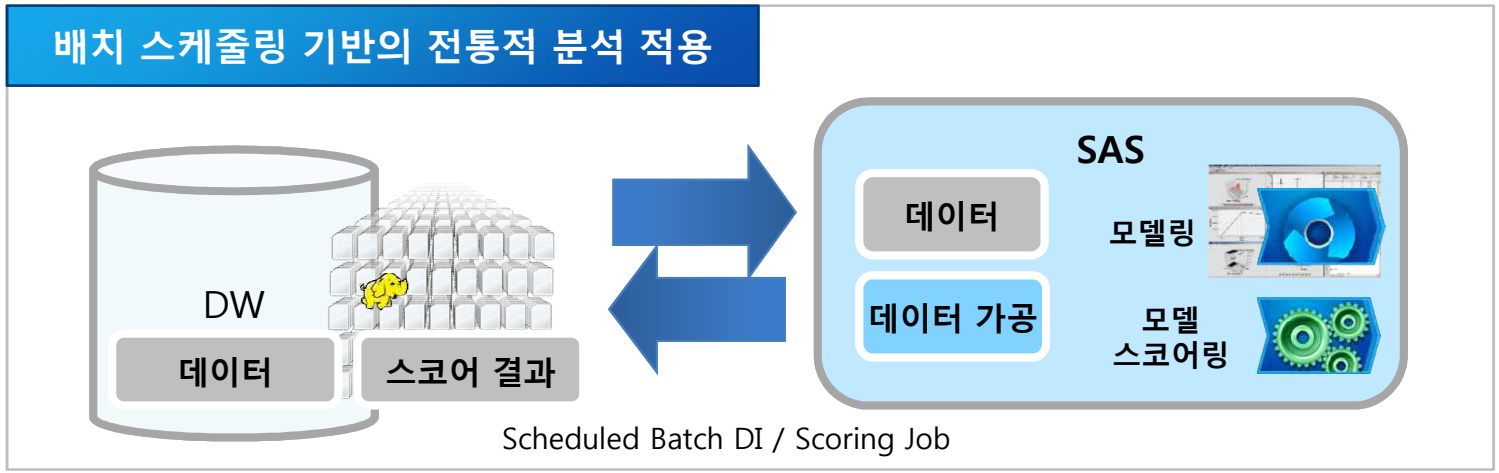
(4) MODEL MANAGEMENT

[통합 의사결정 관리]

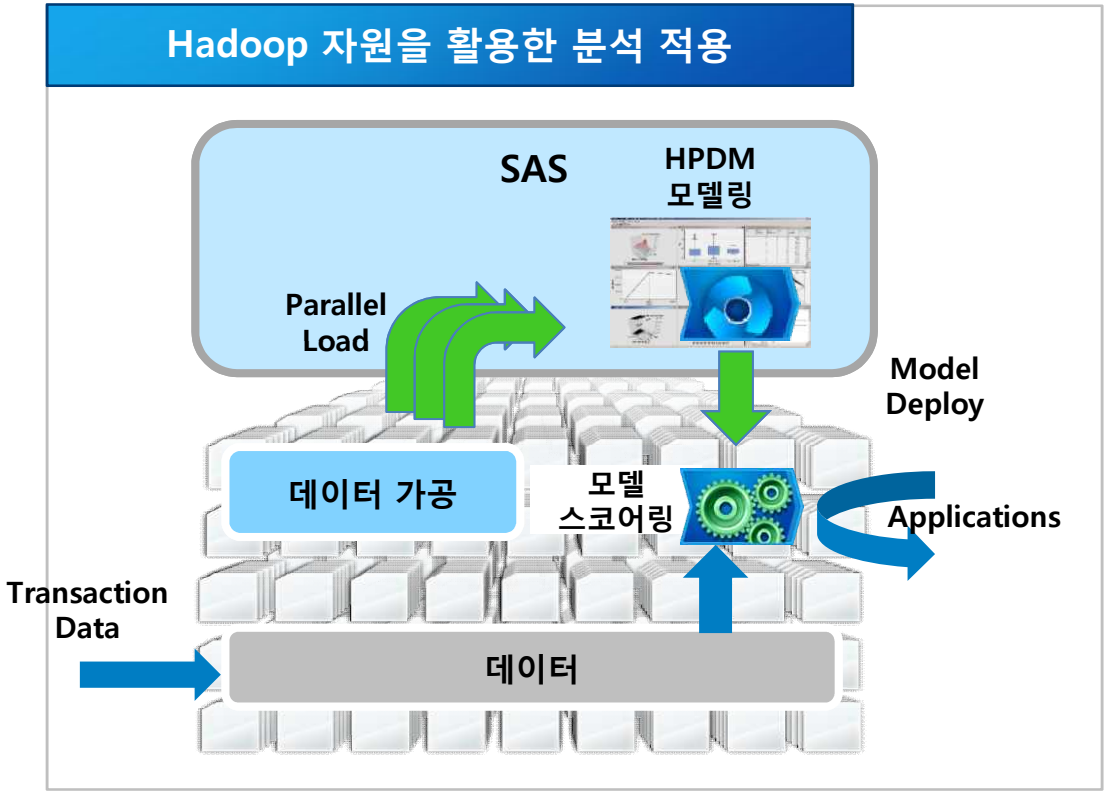


(5) MODEL DEPLOYMENT

- ❖ 전통적인 분석 모델 적용 방법
- ❖ 사전 정의된 배치 스케줄링에 의해 SAS 서버 또는 응용프로그램에서 주기적으로 분석 결과 데이터 (스코어링) 산출
- ❖ 실시간 비즈니스, 대용량 데이터 환경 적용에 제약

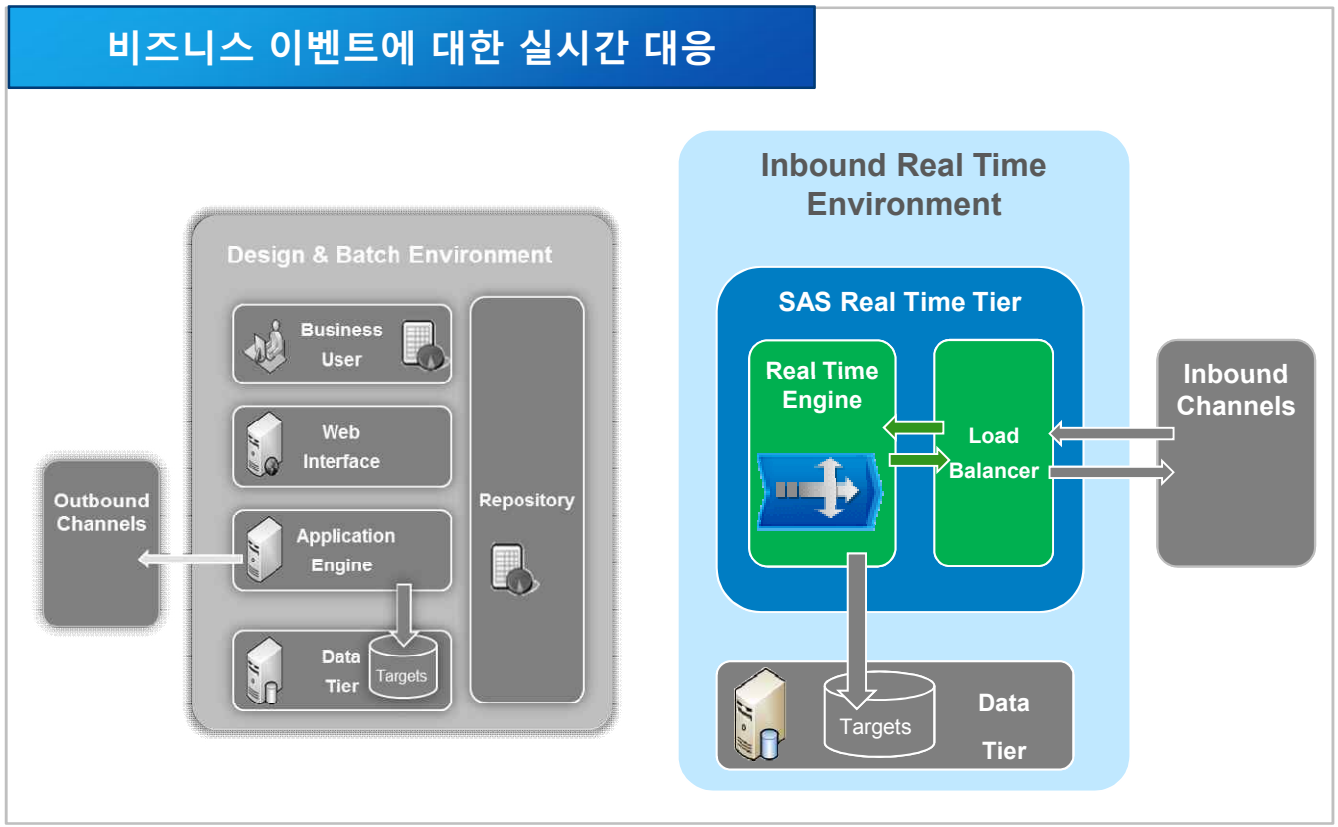


(5) MODEL DEPLOYMENT



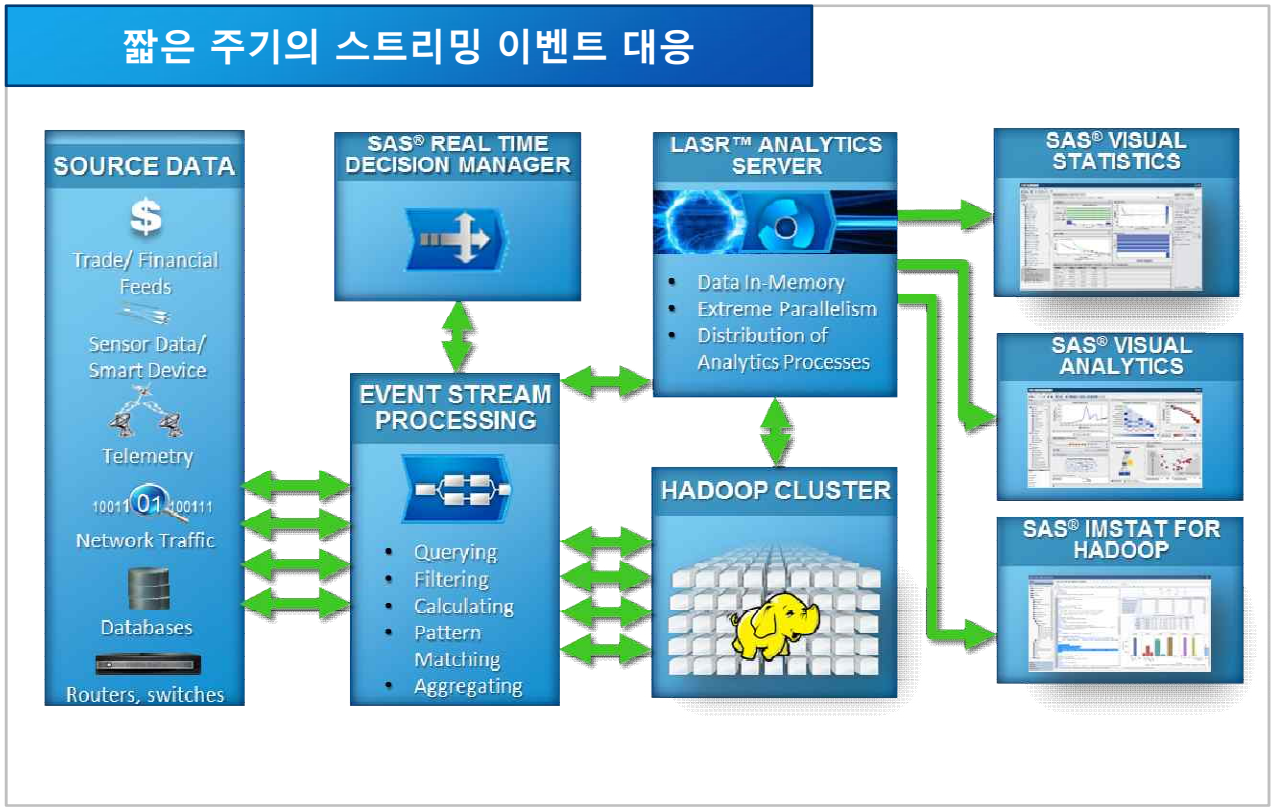
- ❖ Hadoop 내부에서 분석을 위한 데이터 가공
- ❖ Hadoop 데이터를 활용한 빠른 모델링
- ❖ 생성된 모델을 자동화된 방법으로 Hadoop에 적용
- ❖ Hadoop 내부에서 이루어지는 모델 적용 결과 값 산출 (스코어링)

(5) MODEL DEPLOYMENT



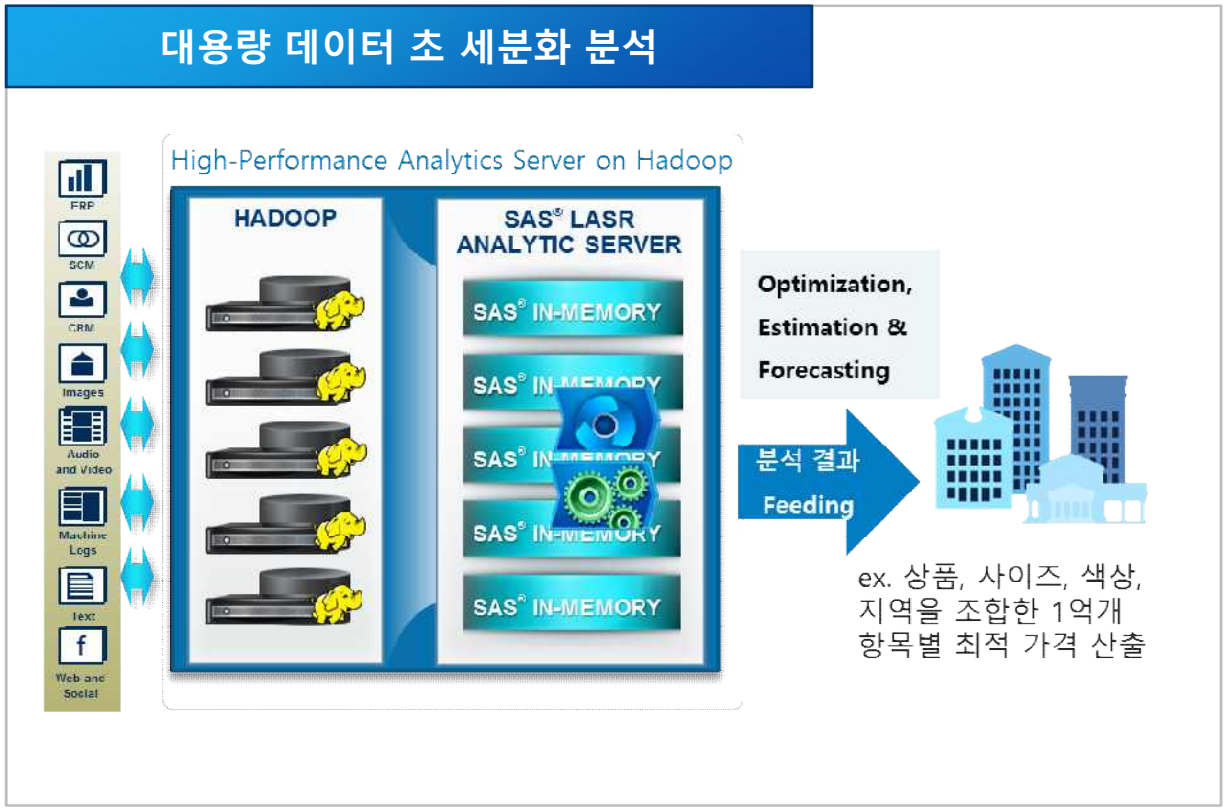
- 외부 발생 이벤트에 대한 실시간 대응
- ex) 인바운드 콜 대응 실시간 마케팅
- 분석 모델 기반의 실시간 의사결정 프로세스 지원

(5) MODEL DEPLOYMENT



- ❖ 매우 짧은 주기의 실시간 스트리밍 이벤트 처리
- ❖ 이벤트 처리 결과를 하둡 및 인메모리 분석과 연계
- ❖ 실시간 의사결정 프로세스 및 분석 연계

(5) MODEL DEPLOYMENT

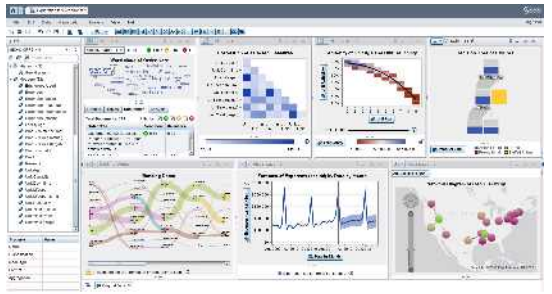


- ❖ 대용량 데이터에 대해 초세분화된 분석을 적시에 빠르게 수행
- ❖ MPP 분산서버 환경에서 고급통계분석 병렬 수행
  - SAS High-Performance Statistics
  - SAS High-Performance Data Mining
  - SAS High-Performance Forecasting
  - SAS High-Performance Optimization
  - SAS High-Performance Econometrics
  - SAS High-Performance Text Mining

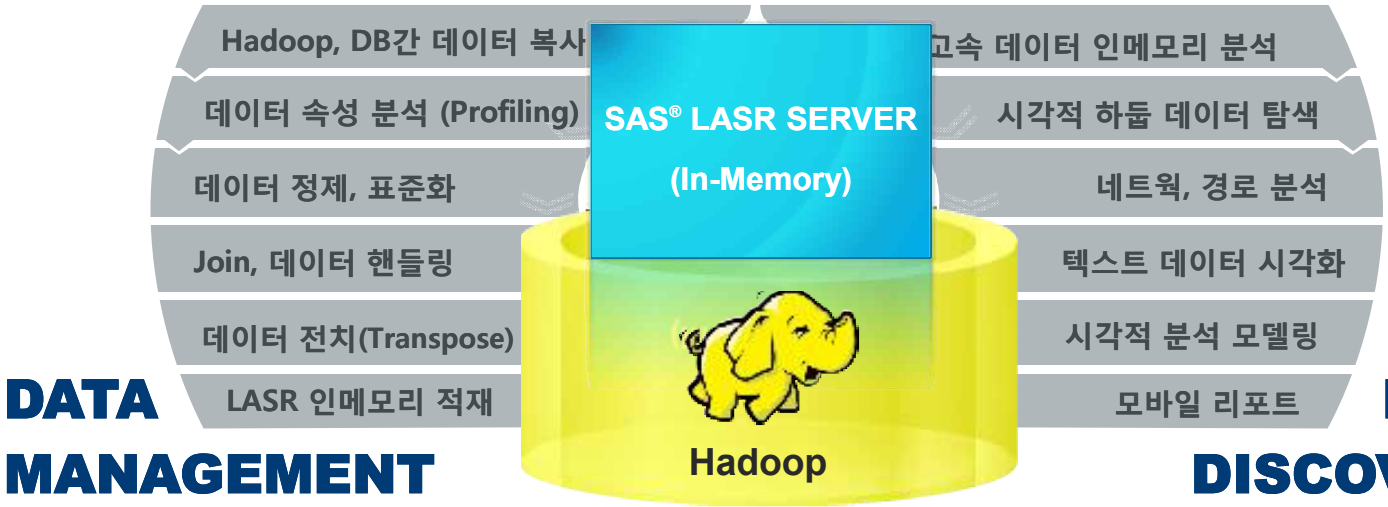
하둡 비전문가를 위한 셀프서비스 HADOOP 분석

Business Analyst / IT

SAS Data Loader for Hadoop



SAS Visual Analytics / Statistics



sas THE POWER TO KNOW.