

# SAP Digital Supply Chain

Cómo aprovechar la transformación digital de la cadena de suministro como valor diferencial

Jorge Lozano

SAPTCOLS





Every Company will become a Software-driven Company by...



Machine Learning



Cloud computing

# Intelligently connecting People, Things and Business



Mobile



Internet of Things



Big Data analytics





Mobile



Internet of Things



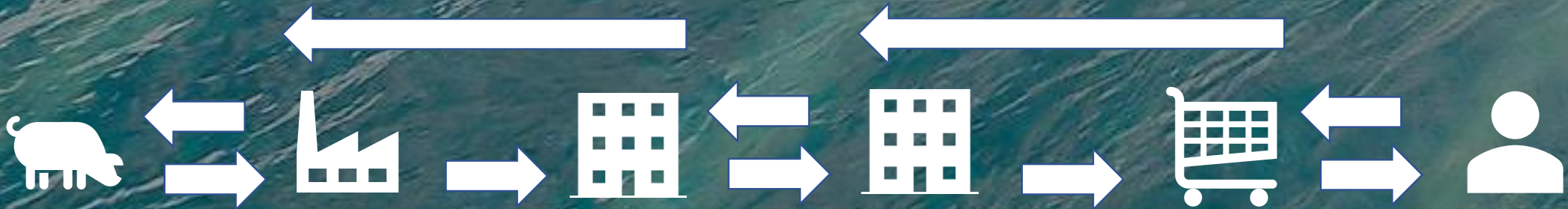
Cloud computing



Big Data analytics

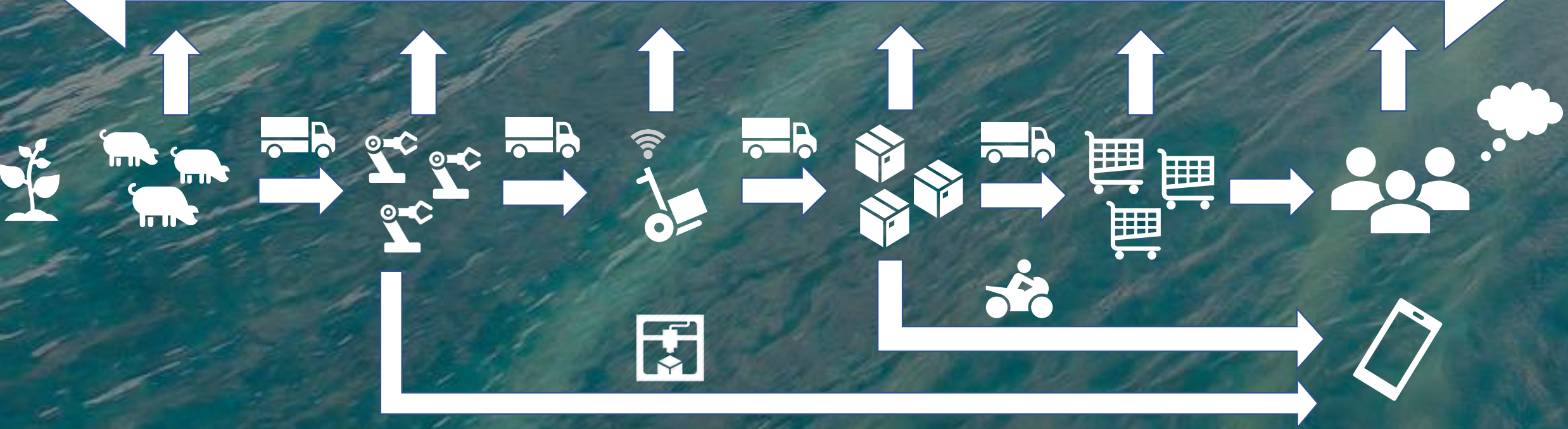
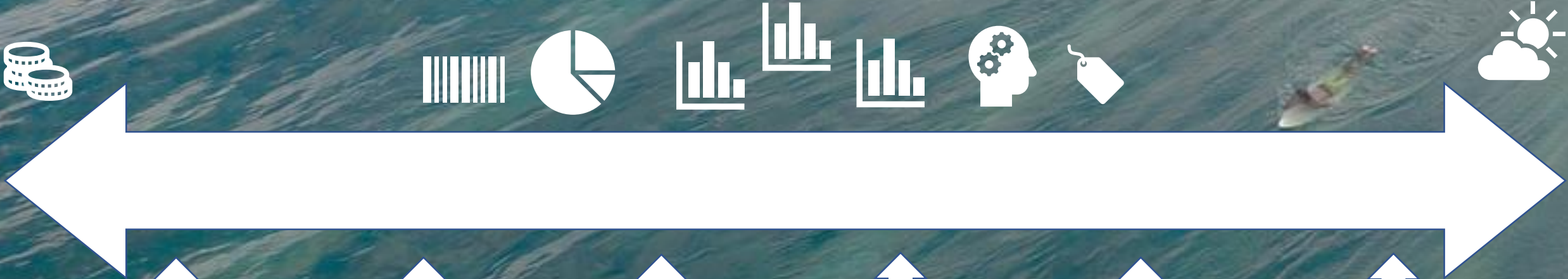


Machine Learning



SAPTOOLS





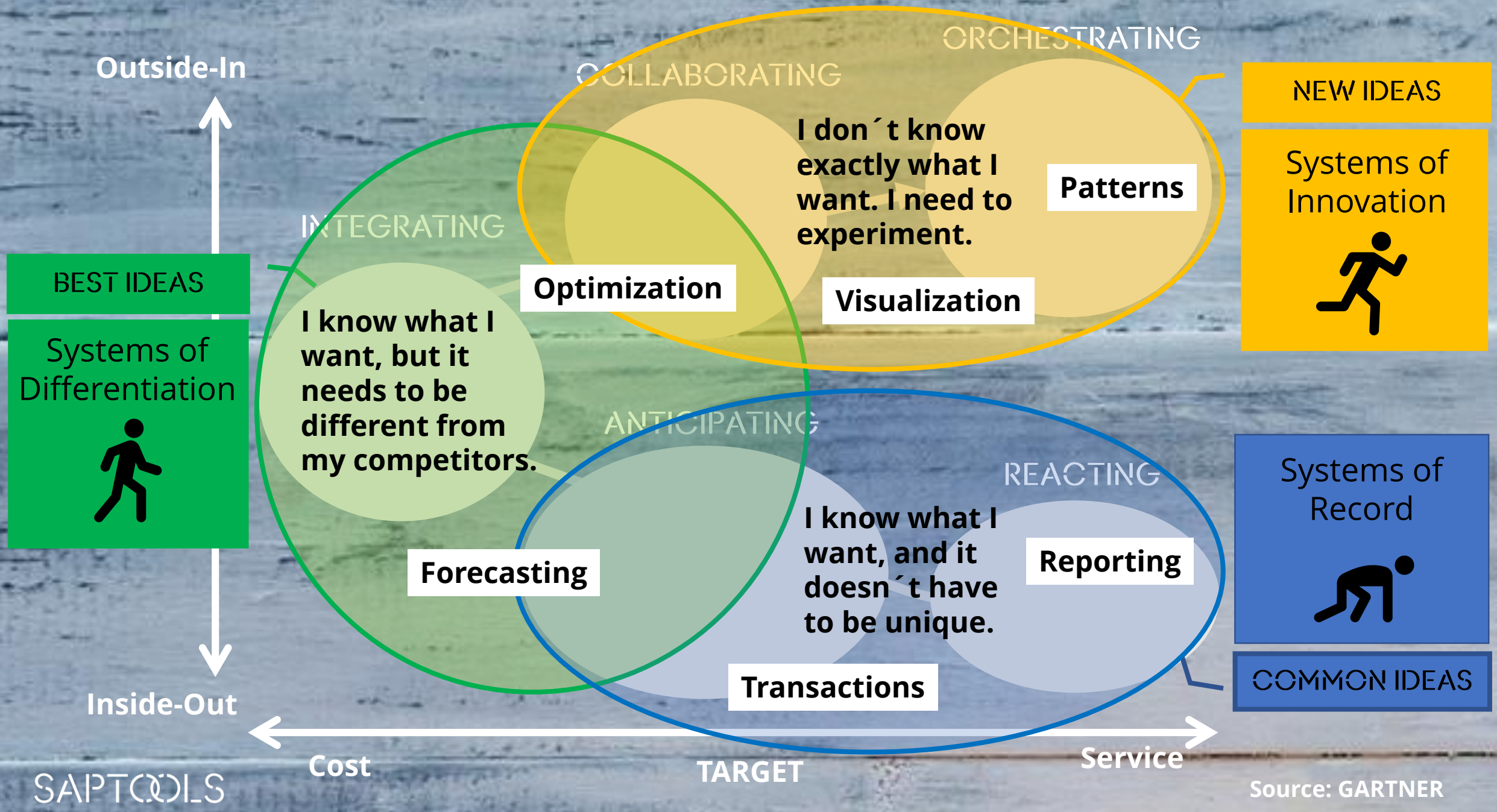
SAPTCOOLS



A New Application Strategy to  
Accelerate Innovation  
is needed...









# SAP products for Digital Supply Chain

SAPTOOLS



GOVERNANCE

-

+

CHANGE

+

-

Systems of Innovation



Systems of Differentiation



Systems of Record



Systems of Innovation and Differentiation are typically cloud native, use continuous integration/delivery and are **born in the cloud**.

SAP S/4HANA

Systems of Record are typically **misión critical and transactional** and many will be redesigned over time for cloud.



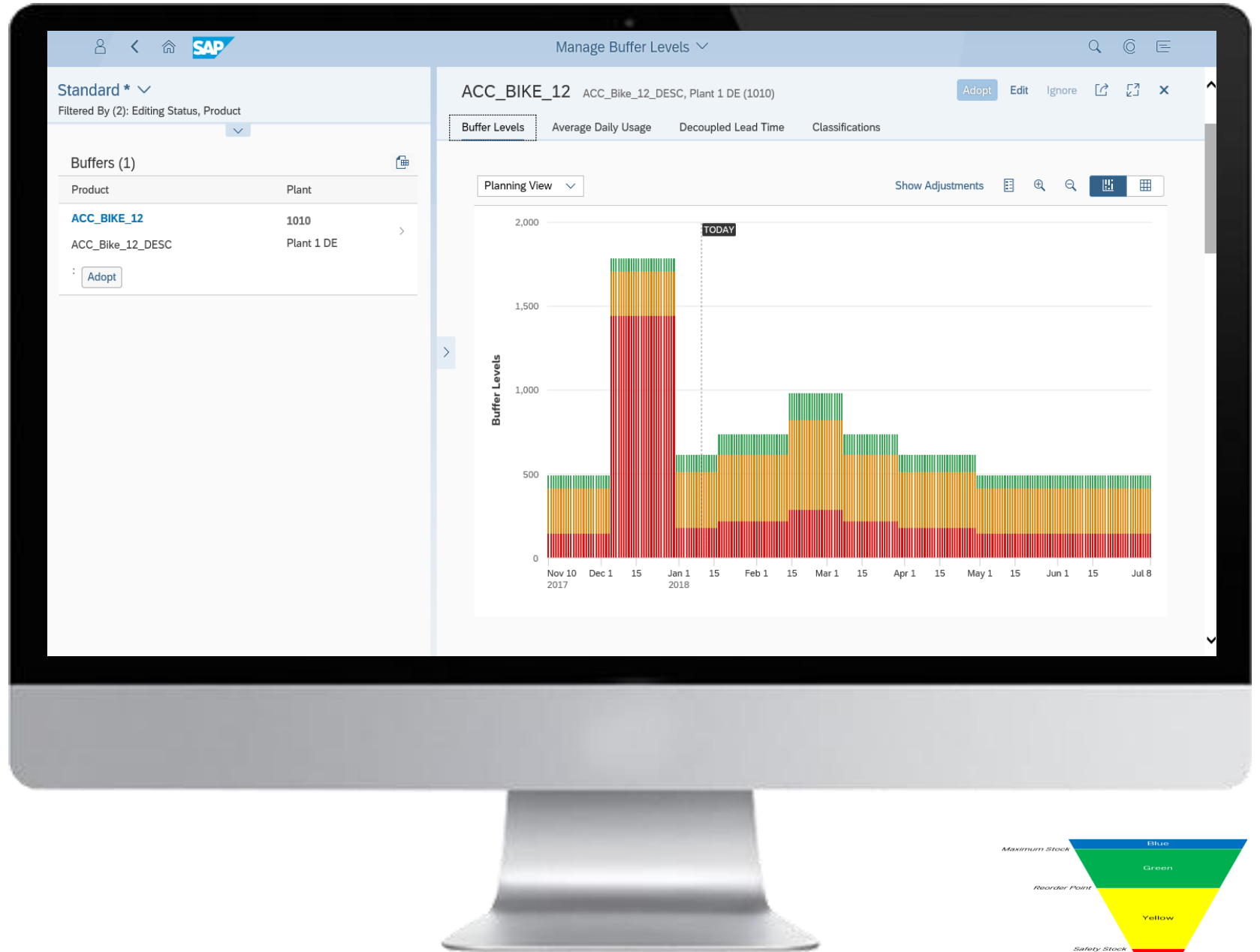
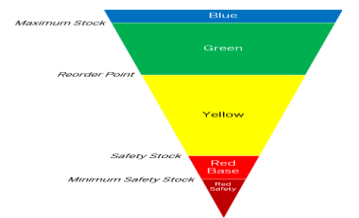


Figure: Demand-Driven Replenishment (Manage buffer levels)





# SAP S/4HANA



SAPTOOLS

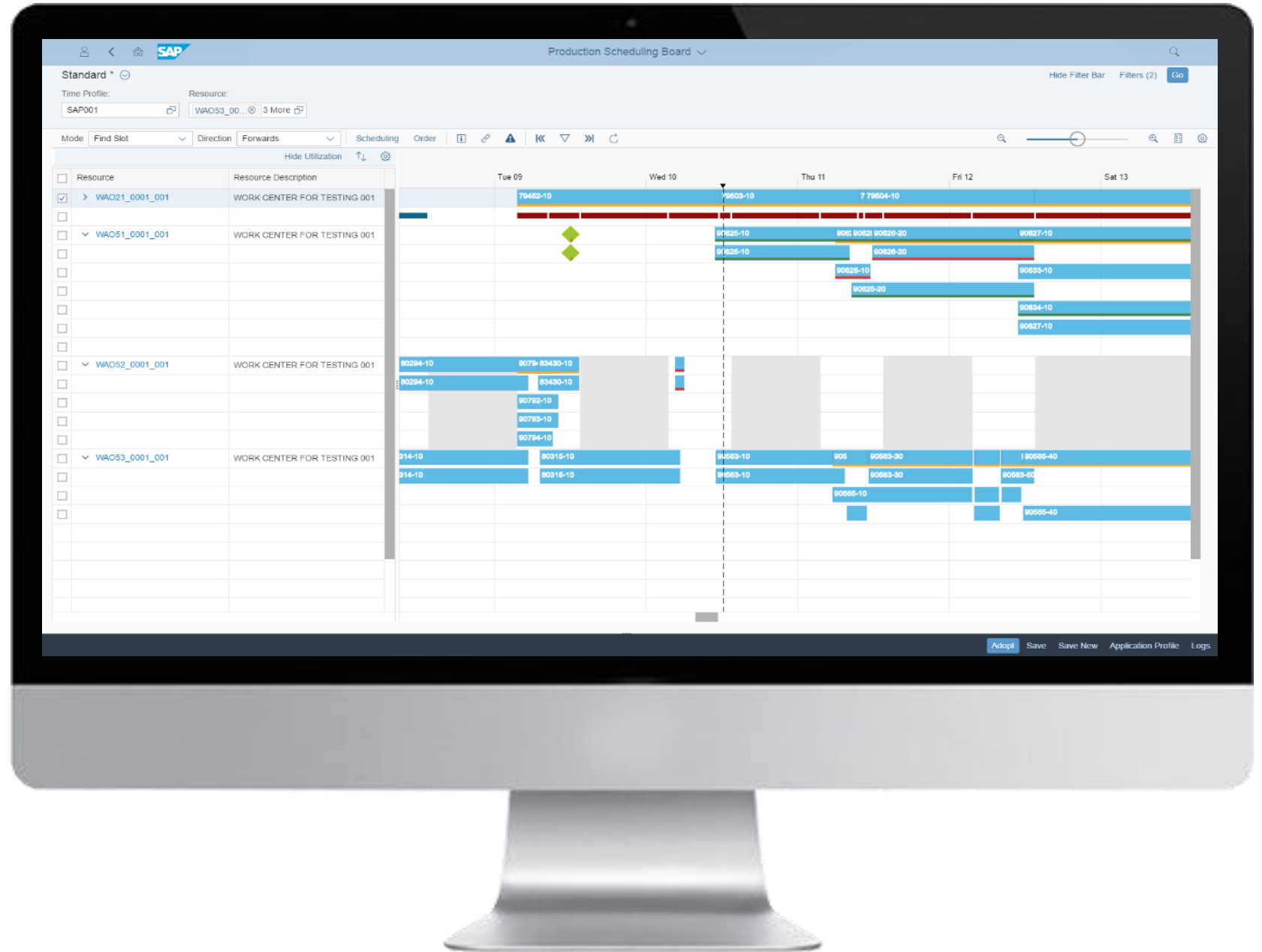


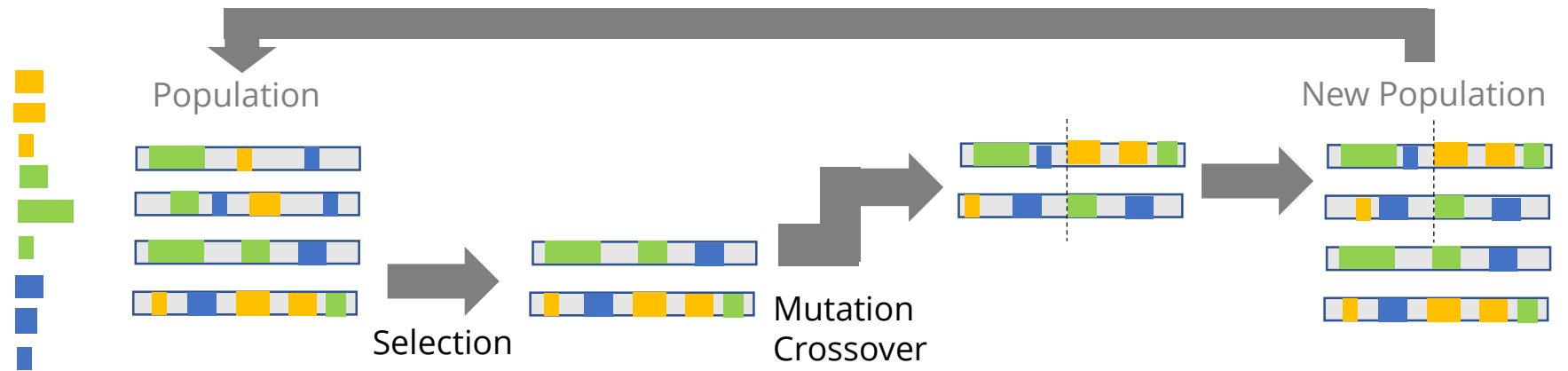
Figure: PP/DS for SAP S/4HANA (Production scheduling planning board)



## Machine Learning is embedded across the SAP portfolio

### Application 1: PPDS Optimizer

Iterative search by changing production dates/sequences and resource assignments of existing operations/activities.



#### Objective function

- W1 \* Production span
- + W2 \* Sum of setup times
- + W3 \* Sum of setup costs
- + W4 \* Maximum delay costs
- + W5 \* Sum of delay costs
- + W6 \* Sum of mode costs

**MINIMUM** (optimal solution)



**Genetic Algorithm**



GOVERNANCE

-

SAPTOOLS

CHANGE

+

-

Systems of Innovation



Systems of Differentiation



Systems of Record



Systems of Innovation and Differentiation are typically cloud native, use continuous integration/delivery and are **born in the cloud**.

SAP Integrated Business Planning

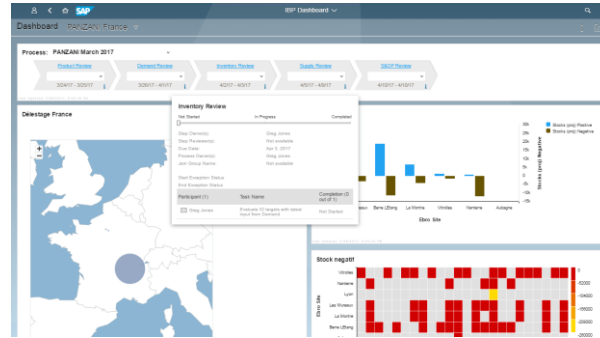
SAP S/4HANA

Systems of Record are typically **misión critical and transactional** and many will be redesigned over time for cloud.

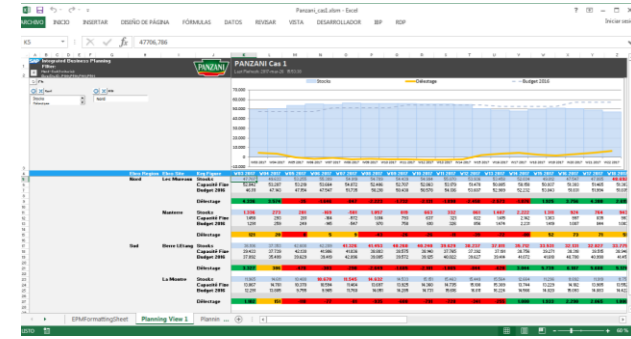


# SAP Integrated Business Planning

## Real-time Analytics



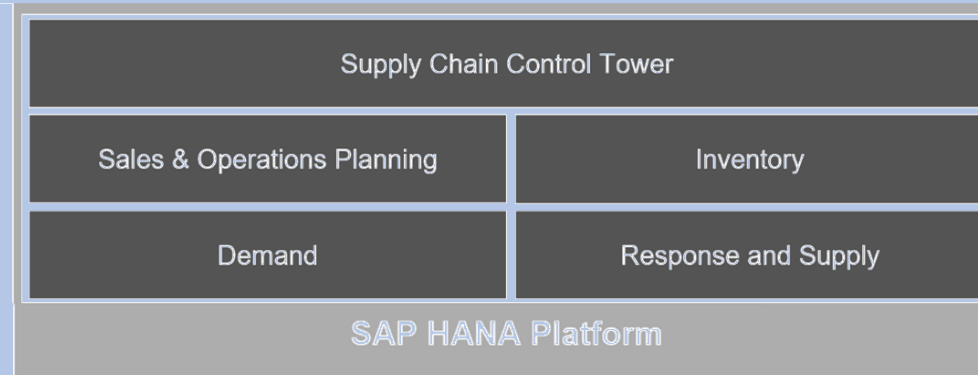
## Excel planning and Simulation



Local calculations

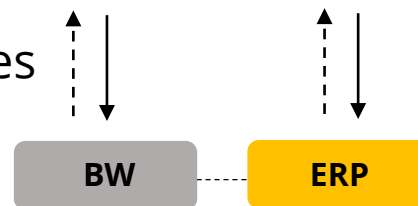


IBP  
process



Embedded  
calculations

Key figures  
(numbers)



Master data



# SAP Integrated Business Planning



Figure: SAP Integrated Business Planning (Fiori app)



# SAP Integrated Business Planning

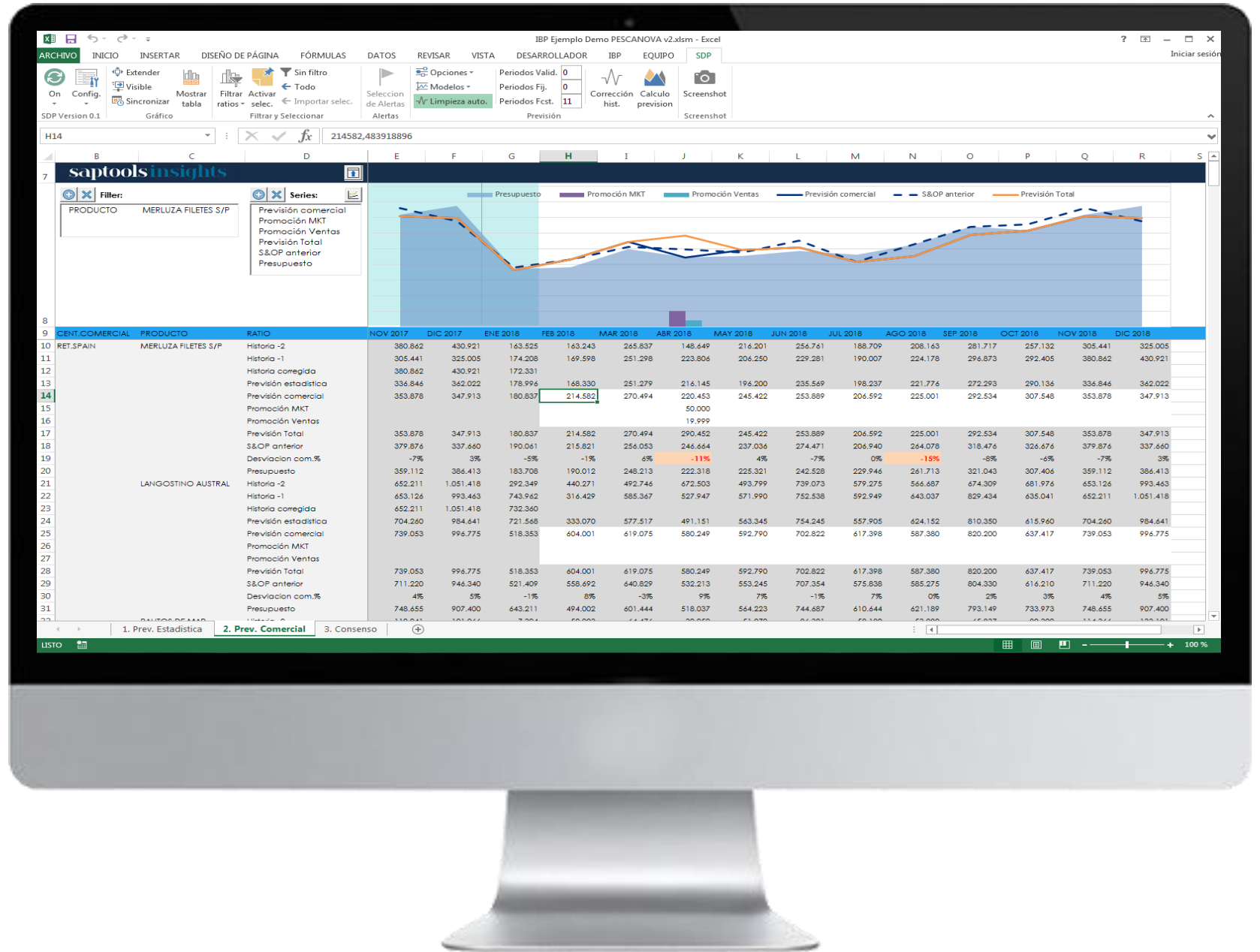


Figure: SAP Integrated Business Planning – Demand Review (Excel)



# SAP Integrated Business Planning

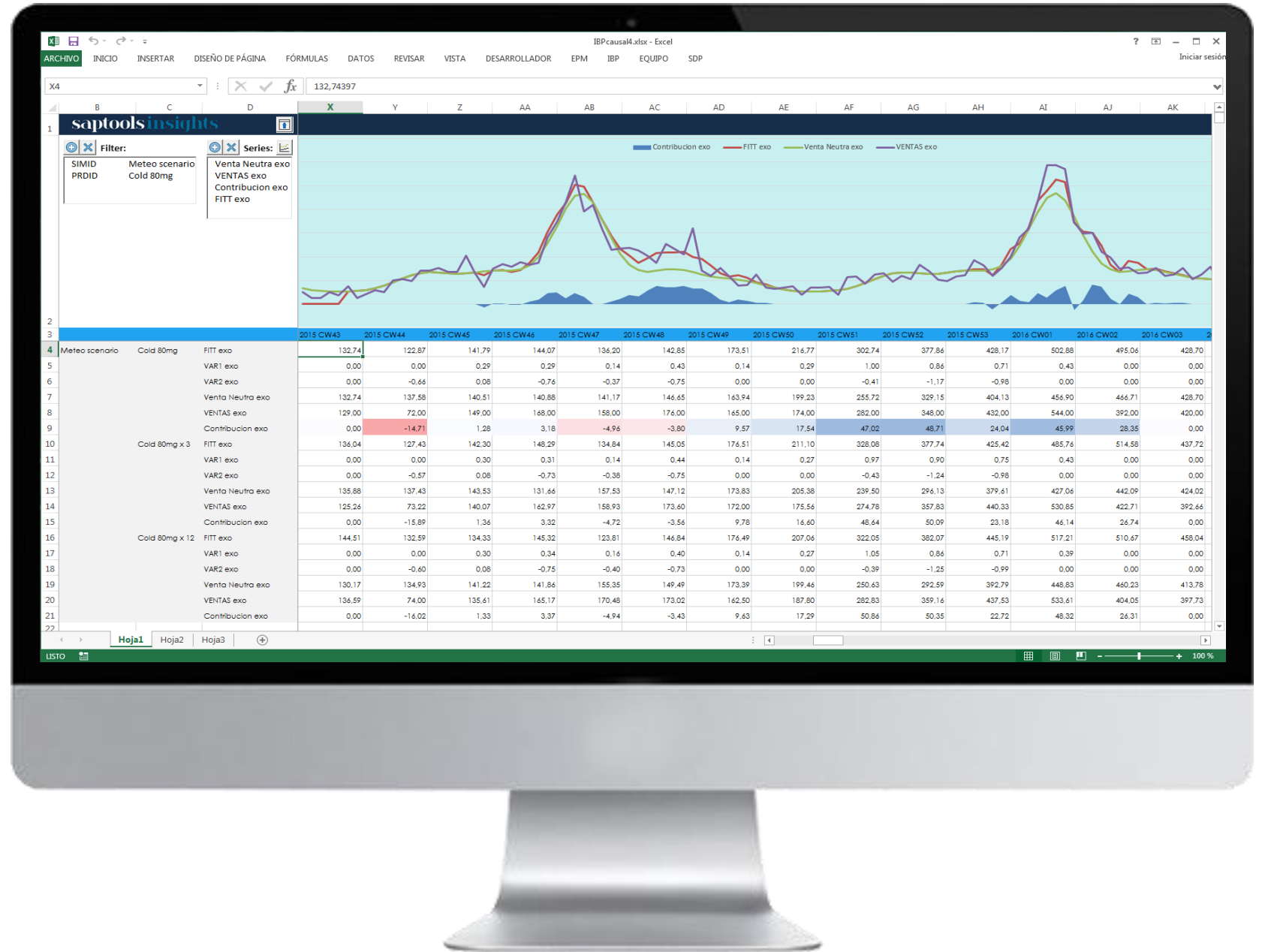


Figure: SAP Integrated Business Planning – MLR Meteo (Excel)



# SAP Integrated Business Planning

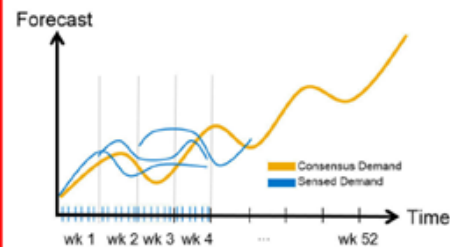
Machine Learning  
is embedded across the SAP portfolio

## Application 2: Best-Fit Algorithms

Best-Fit algorithms automatically switch to the most appropriate forecasting method and parameters based on the latest demand information, to ensure you create the best forecast for every product at every stage of its life cycle. The algorithm evaluates forecast error for each cycle and recommends or automatically changes to the forecasting method that will produce the best result.

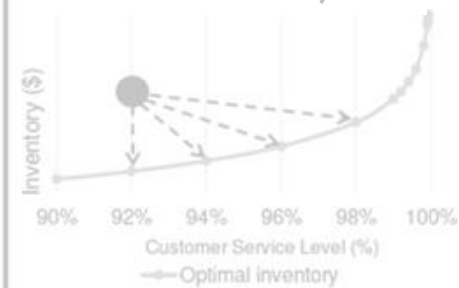


### Demand



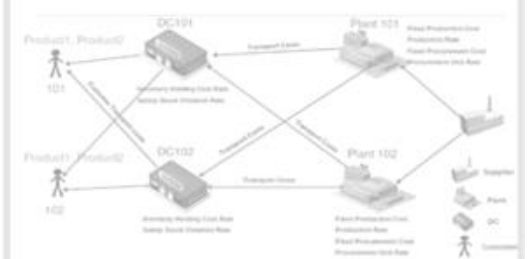
More accurate, daily demand plans for the short-term horizon of 4-6 weeks

### Inventory



Most-efficient inventory deployment to meet service level targets

### Supply



The optimizer planning algorithm generates a cost-optimized production, distribution, and procurement plan for the entire supply chain network, taking into account capacity constraints.



# SAP Integrated Business Planning

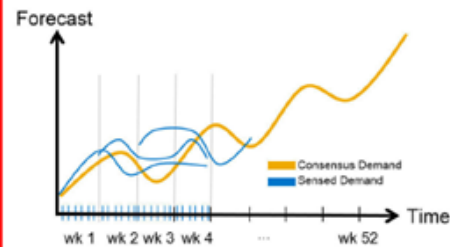
Machine Learning  
is embedded across the SAP portfolio

## Application 3: Demand Sensing algorithms

Modern demand sensing algorithms rely instead on downstream demand patterns in real time or recent past. It uses pattern recognition to generate an accurate granular signal in volatile demand environments.

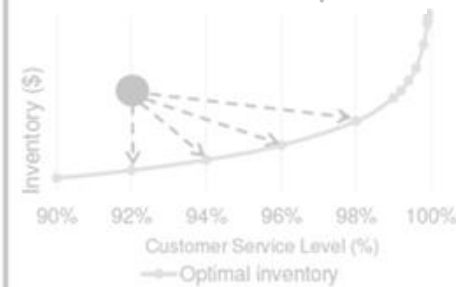


### Demand



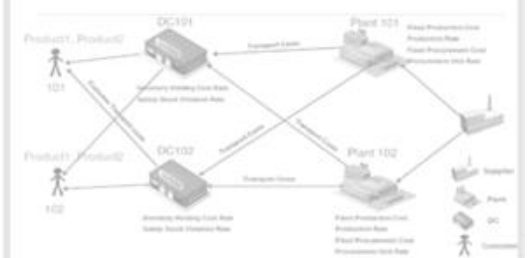
More accurate, daily demand plans for the short-term horizon of 4-6 weeks

### Inventory



Most-efficient inventory deployment to meet service level targets

### Supply



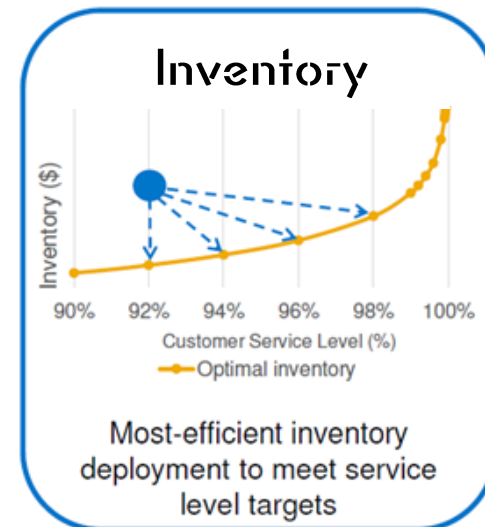
The optimizer planning algorithm generates a cost-optimized production, distribution, and procurement plan for the entire supply chain network, taking into account capacity constraints.

# SAP Integrated Business Planning

Machine Learning  
is embedded across the SAP portfolio

## Application 4: Multi-Echelon Inventory Optimization

Multi-Echelon Inventory Optimization (MEIO) automatically adjusts inventory parameters to meet stated customer service requirements while minimizing inventory investment. Using the latest demand and inventory projections and variabilities, MEIO seeks the optimal balance of component, Work In Process and finished goods inventory at the right locations.



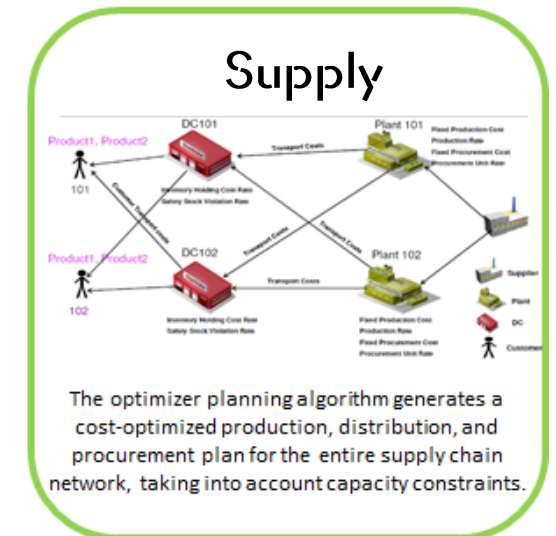


# SAP Integrated Business Planning

Machine Learning  
is embedded across the SAP portfolio

## Application 5: Supply Optimization

Supply chain optimization relies on a set of provided information (supply chain facilities and capacities, transportation lanes and capacities, customer service requirements, profit requirements, etc.) and real-time operational updates (orders, shipments, unplanned events, etc.) to suggest optimal responses to planned and unplanned events.



Systems of Innovation and Differentiation are typically cloud native, use continuous integration/delivery and are **born in the cloud**.

**SAP Leonardo**

**SAP Integrated Business Planning**

**SAP S/4HANA**

Systems of Record are typically **misión critical and transactional** and many will be redesigned over time for cloud.

Systems of Innovation



Systems of Differentiation



Systems of Record



GOVERNANCE

CHANGE

-

+

+

SAPTOOLS



# SAP Leonardo



SAP TOOLS

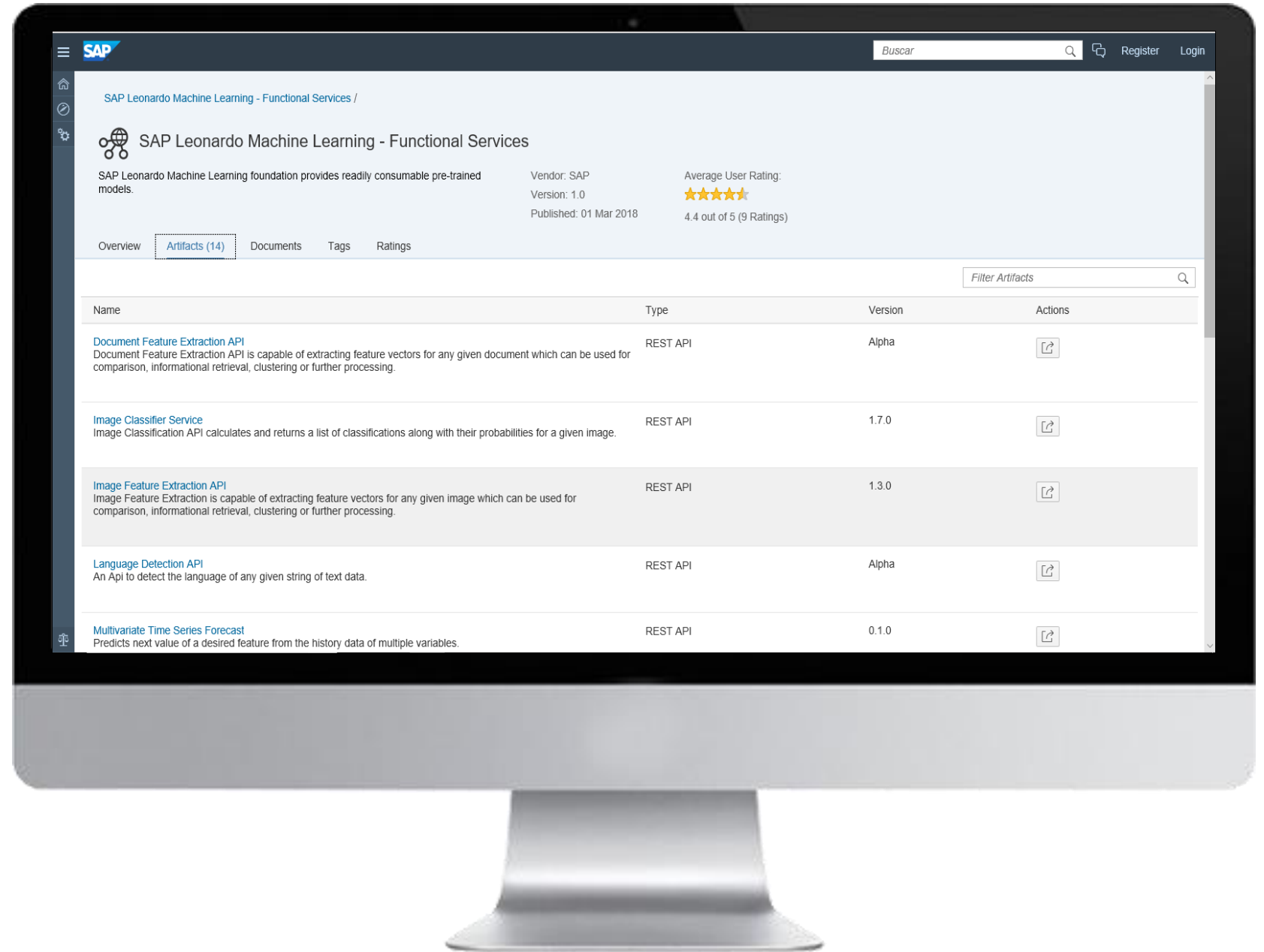
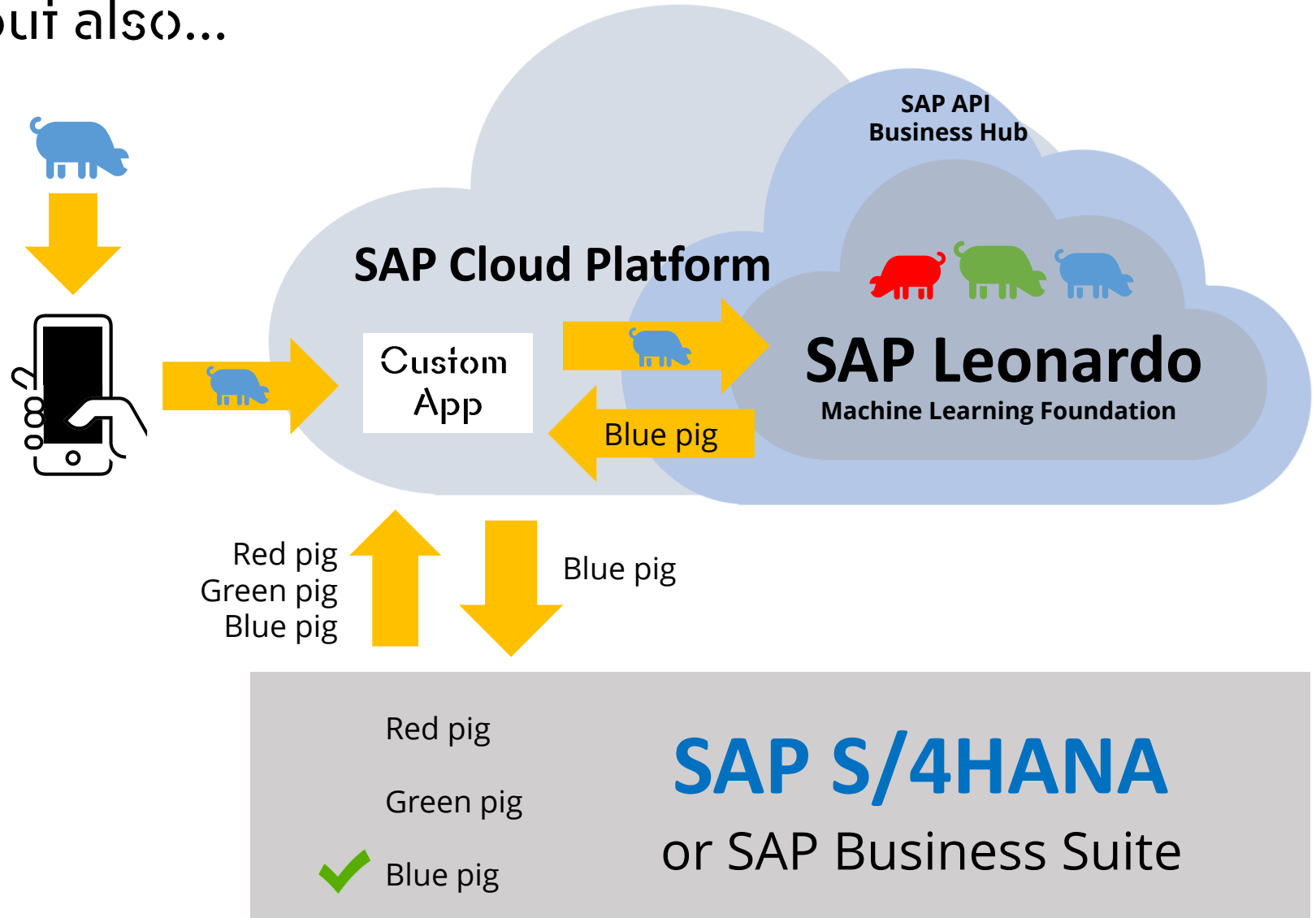


Figure: SAP Leonardo (Machine Learning Foundation)

# SAP Leonardo

Machine Learning is embedded across the SAP portfolio, but also...





Cambiar de respuesta es evolución,  
cambiar de pregunta es **revolución.**

Jorge Wagensberg (1948-2018)



SAPTOOLS