Data Attribute Recommendation

Apply Machine Learning and Regression Models to Classify Data Records

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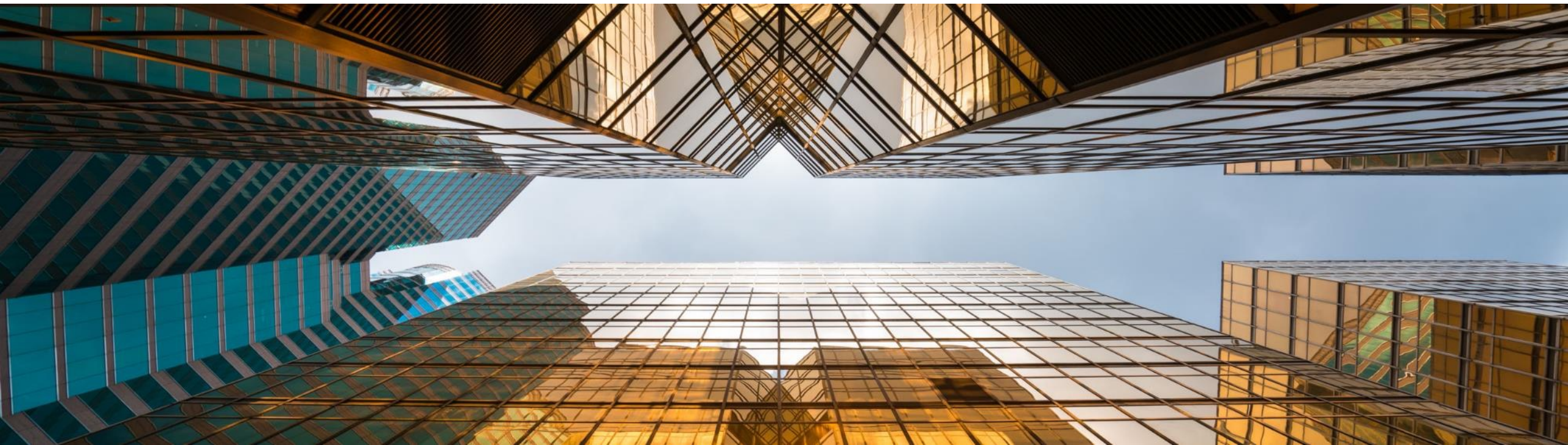
THE BEST RUN SAP

Agenda

Introduction

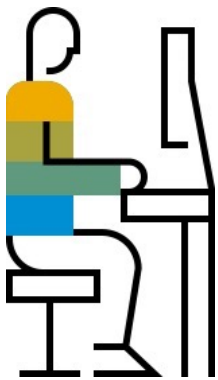- Data Attribute Recommendation

Workshop Hands-on

- Regression scenario with Data Attribute Recommendation
- Intelligent approvals with Workflow Intelligence

What Is Data Attribute Recommendation?

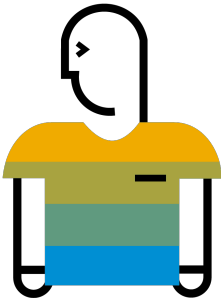# Business Challenge - Matching Information done Manually

Material Table

Description	Manufacturer	Price	Category	Subcategory
1875 W Conair Hair Dryer	Conair	19.99	*Health, Fitness & Beauty*	Personal Care & Beauty
40x to 1000x - LED Illumination - Monocular Head	Celestron	369.99	*Cameras & Camcorders*	Binoculars, Telescopes & Optics
Amazons 6" Paperwhite display	Amazon	289.99	*Computers & Tablets*	E-Readers & Accessories
Yellow - Laser - 1500 Page - 1 Each	Brother	50.99	*Connected Home & Housewares*	Office & School Supplies
Take the fight to the next level	Activision	19.99	*Video Games*	Xbox 360
Compatible with select electronic devices	alkaline chemistry	7.99	*Connected Home & Housewares*	Housewares
From our expanded online assortment; compatible with most 1989-2000 Ford, Lincoln and Mercury vehicles	Metra	16.99	*Car Electronics & GPS*	Car Installation Parts & Accessories

Manual matching and insertion of information

Bob,
Master Data Team

Bob,
spends much time on repetitive tasks

AI Approach - Train a model with historical / labelled data

Material Table

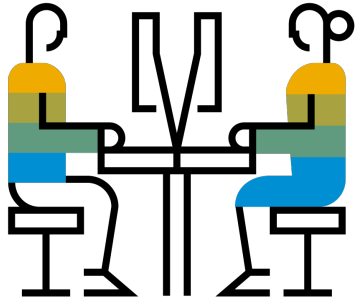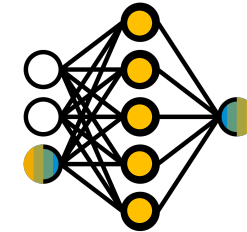| Description	Manufacturer	Price	Category	Subcategory
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Training data

Data Attribute Recommendation

model trained

Solution – Automation with Data Attribute Recommendation

Material Table

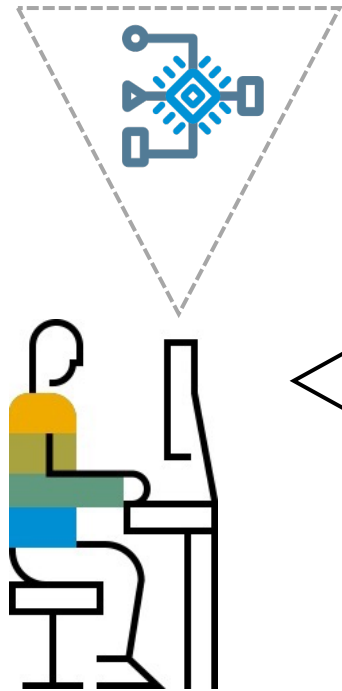| Description	Manufacturer	Price	Category	Subcategory
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Predictions for customer specific fields

Bob,
Master Data Team
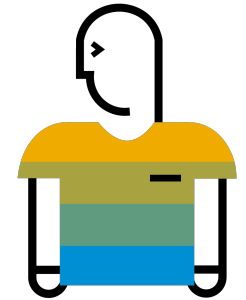
Bob,
Can now do more value creative tasks

Data Attribute Recommendation

Automate master data & transactional data management tasks

- ➤ New master data records
- ➤ Inconsistent master / transactional data records
- ➤ Missing attributes in master / transactional data

- ✓ Predict missing master data / transactional data
- ✓ Correct and update master / transactional records with missing attributes

Consistent master data & transactional data records

Data Attribute Recommendation helps to classify entities such as products, stores, sales orders and users into multiple classes and also predict missing numerical attributes, using free text, numbers and categories as input.

Automate and speed up master data creation and maintenance

Gain master & transactional data insights faster with less effort

Reduce manual effort for master and transactional data maintenance

Business Scenarios

Automatic Prediction of missing Master Data fields for New Product Introduction

New material creation request (CSV, Web based)

Minimum number of information input by the business user

Enter Data

Data Attribute Recommendation

Transfer input data either online or batch mode

Predict fields that can be integrated to material master

Predictions

Business Challenge

➢ Constant **new product release** to the market

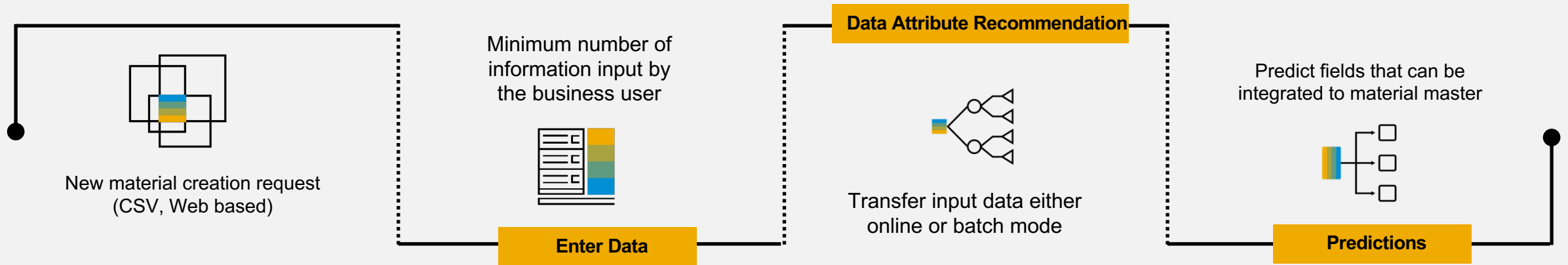➢ **Lack of holistic view** of the master data needed by **different business functions**

➢ **Inconsistent representation** of master data across the entire organization

Solution

Data Attribute Recommendation

➢ Provides master data field prediction to the business user

➢ **Retrainable Machine learning** models that can be retrained at frequent intervals

➢ Can be used for business partner maintenance, work center and asset maintenance, custom field **value prediction**

Benefits and Value

✓ **Reducing** the manual maintenance and verification

✓ **One voice of master data** across the organization

✓ **Improve quality of master data to** facilitate more efficient planning and execution

Intelligent Sales Order Creation Process

Inbound Sales Orders
(Online / EDI / Email)

Incomplete Sales orders
created by service agent / Bot

Incomplete Sales Orders

Data Attribute Recommendation

Provide incomplete
fields as input

Predict missing and complete
sales order creation process

Predictions
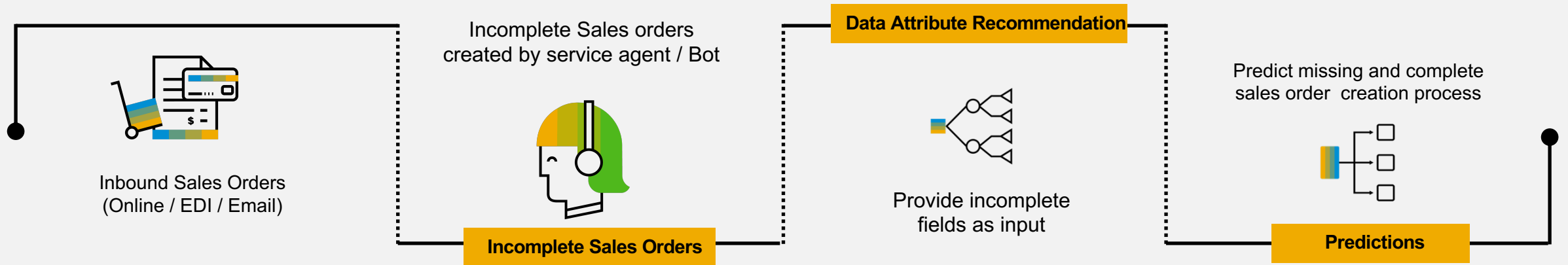
Business Challenge

➢ **Incomplete and overdue sales order** due to missing information

➢ **High manual efforts** needed to retrieve the missing information

➢ **Delay in order fulfillment** in the order to delivery process

Solution

Data Attribute Recommendation
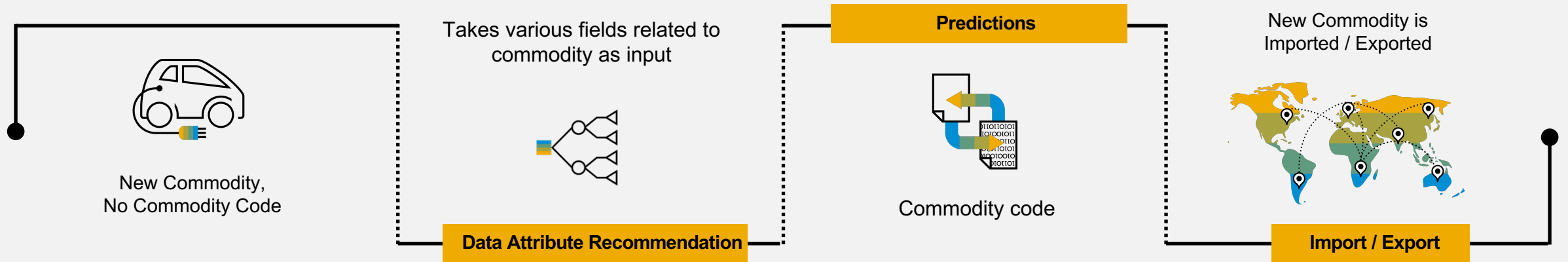
✓ **Incomplete fields** to be fed as input to Data Attribute Recommendation service

✓ Can be combined **with rule based procedures**

✓ **Exception classification** of sales orders **for automated processing**

Benefits and Value

✓ **Significantly reduce** manual efforts for order completion

✓ **Expedite** overall sales order processing

✓ **Leverage** extensive cost saving potential

Commodity Code Prediction

New Commodity,
No Commodity Code

Takes various fields related to
commodity as input

Data Attribute Recommendation

Predictions

Commodity code

New Commodity is
Imported / Exported

Import / Export

Business Challenge

➢ International trade demands **commodity codes**

➢ **No correct commodity code**
→ **Rejection** of assignment goods by customs
→ **Waiting on borders = high costs** for the organization

➢ **Maintaining** such master data
→ is supported by rules
→ leads to **inconsistencies & left-overs for manual processing**

Solution

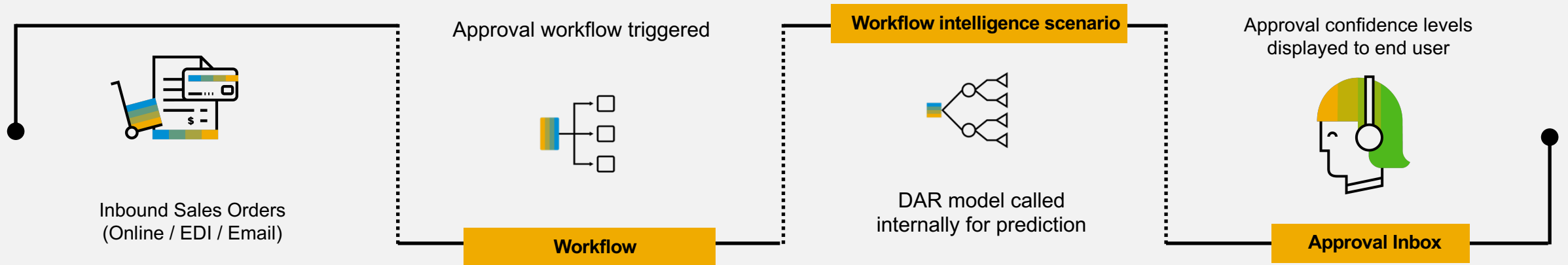**Data Attribute Recommendation** can predict:

✓ **Correct values by learning the logic behind** complex fields *(such as the commodity code)*

✓ **Dependencies** to multiple data attributes

Benefits and Value

✓ **Reduces manual efforts** in commodity code assignment

✓ **Increases the validity** of assigned commodity codes

✓ **Decreased costs:** caused by labor & mal-assignment of commodity codes

Intelligent Approvals (Sales Orders)

Approval workflow triggered

Workflow intelligence scenario

Approval confidence levels displayed to end user

Inbound Sales Orders (Online / EDI / Email)

Workflow

DAR model called internally for prediction

Approval Inbox

Business Challenge

Business Process

- ➢ Manual time consuming & repetitive cognitive tasks, cannot be automated due to compliance reasons
- ➢ Lack of knowledge to take informed decisions by the delegates of tasks in a business process
- ➢ High investment (time and cost) for implementation of every machine learning use case

Solution

Workflow Intelligence

- ➢ Approval recommendation with explanations
- ➢ Leverage past learnings
- ➢ Minimal disruption of existing workflows
- ➢ Minimal ML knowledge required to enable business owners to configure a scenario
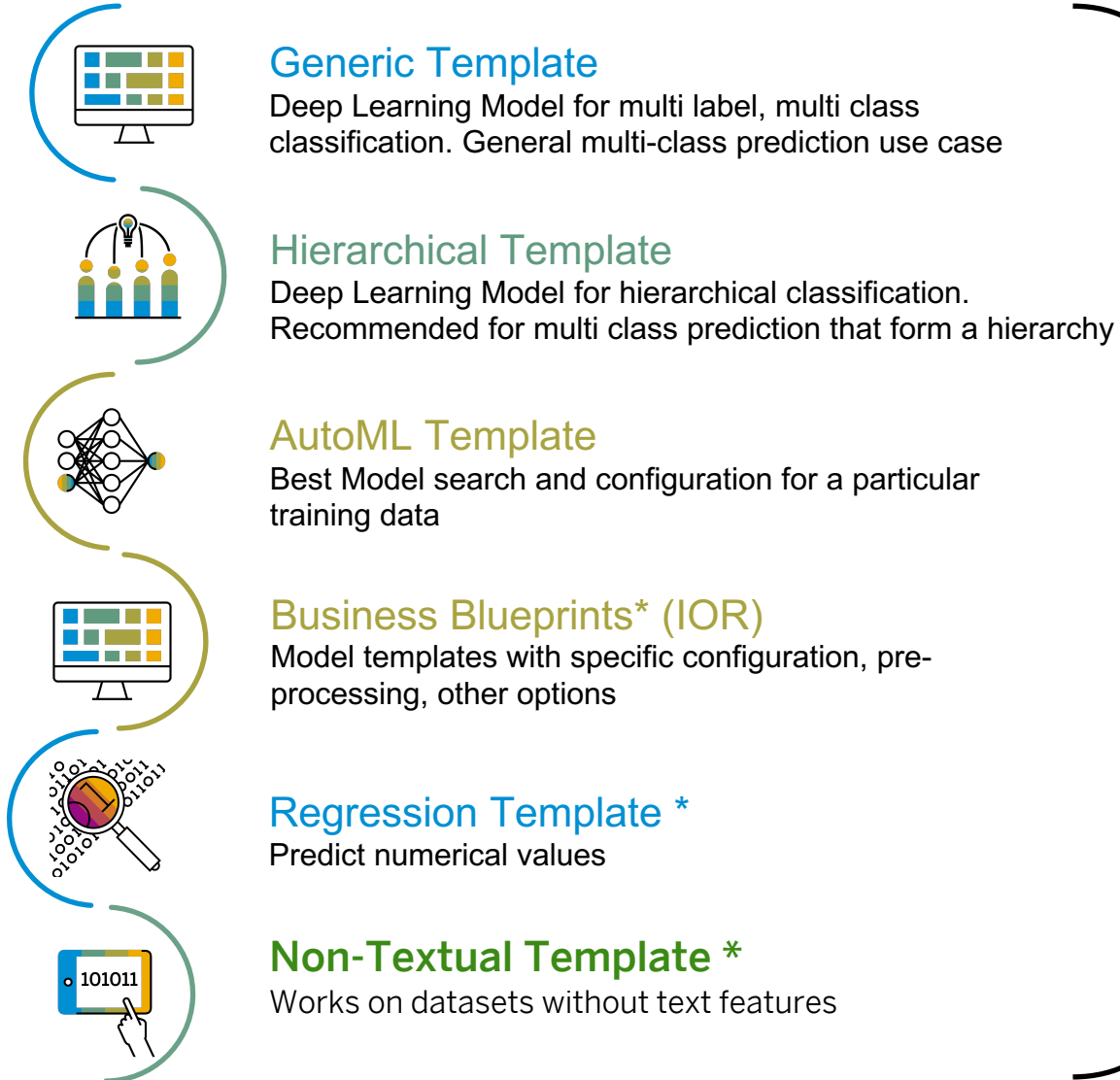
Benefits and Value

- ✓ No code scenario configuration
- ✓ Out of the box integration with My Inbox
- ✓ Democratize ML

Towards a unified service

Components

Generic Template
Deep Learning Model for multi label, multi class classification. General multi-class prediction use case

Hierarchical Template
Deep Learning Model for hierarchical classification. Recommended for multi class prediction that form a hierarchy

AutoML Template
Best Model search and configuration for a particular training data

Business Blueprints* (IOR)
Model templates with specific configuration, pre-processing, other options

Regression Template *
Predict numerical values

Non-Textual Template *
Works on datasets without text features

Solution

One Service (Pay as you Go)

Standalone / Integrated

S/4HANA Integration – ISLM *

* Future Planned

Thank you.

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