



Machine Learning

SAP Cash Application & Beyond

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PUBLIC



Utrecht University

THE BEST RUN 



Utrecht University

NOBEL PRIZES

12

SPINOZA PRIZES

19

SHANGHAI RANKING 2018

The Netherlands

1

Europe

14

World

51

Organisation & people



ESTABLISHED

1636



PROFESSORS

600



FACULTIES

7+2

teaching institutes



STAFF-MEMBERS

7,000



STUDENTS

31,000

20,000 Bachelor
11,000 Master
2,510 International
100 Nationalities

We are part of Utrecht Science Park



**LIFE SCIENCES & HEALTH
SUSTAINABILITY**



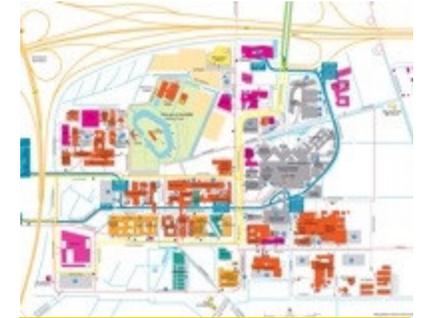
100+ COMPANIES AND INSTITUTIONS



322 HECTARES



5,000 NEW JOBS BETWEEN 2015-2020



**€1,2 BILLION INVESTMENT PROGRAMME
2016-2020**



26,000 EMPLOYEES



56,000 STUDENTS



45 MINUTES TO AMSTERDAM AIRPORT



**SATELLITE LOCATIONS
IN REGION**



**MOST COMPETITIVE REGION
IN EUROPE**



Why SAP Cash App with ML

Proactively follow market developments

Further automate Central Administration Services

Focus on control and quality of service delivery

Ready for the future



What is SAP Cash Application

Processing and posting incoming payments with Machine Learning

Example: Time-intensive tasks in accounts receivables

Incoming payments

ERP

AR accountant

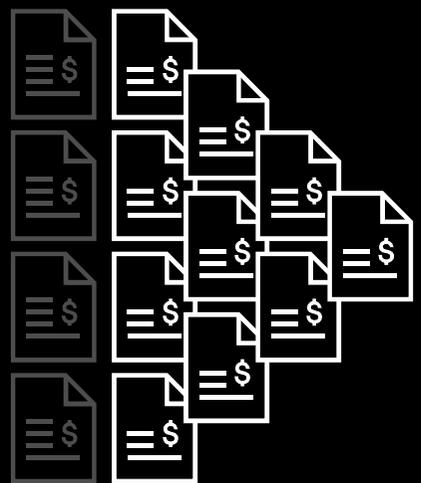
Result

Customer payments for invoices

ERP statement generation and clearing

Manual processing: clarification, matching, and posting

Cumbersome and time-consuming manual processing



- Missing info
- Lump sum
- Discounts
- Exchange
- Customer call



Typical example

100 payments received from customers

30 payments posted by system (full match of amount, invoice no., name)

70 payments to be cleared manually

100%

30%

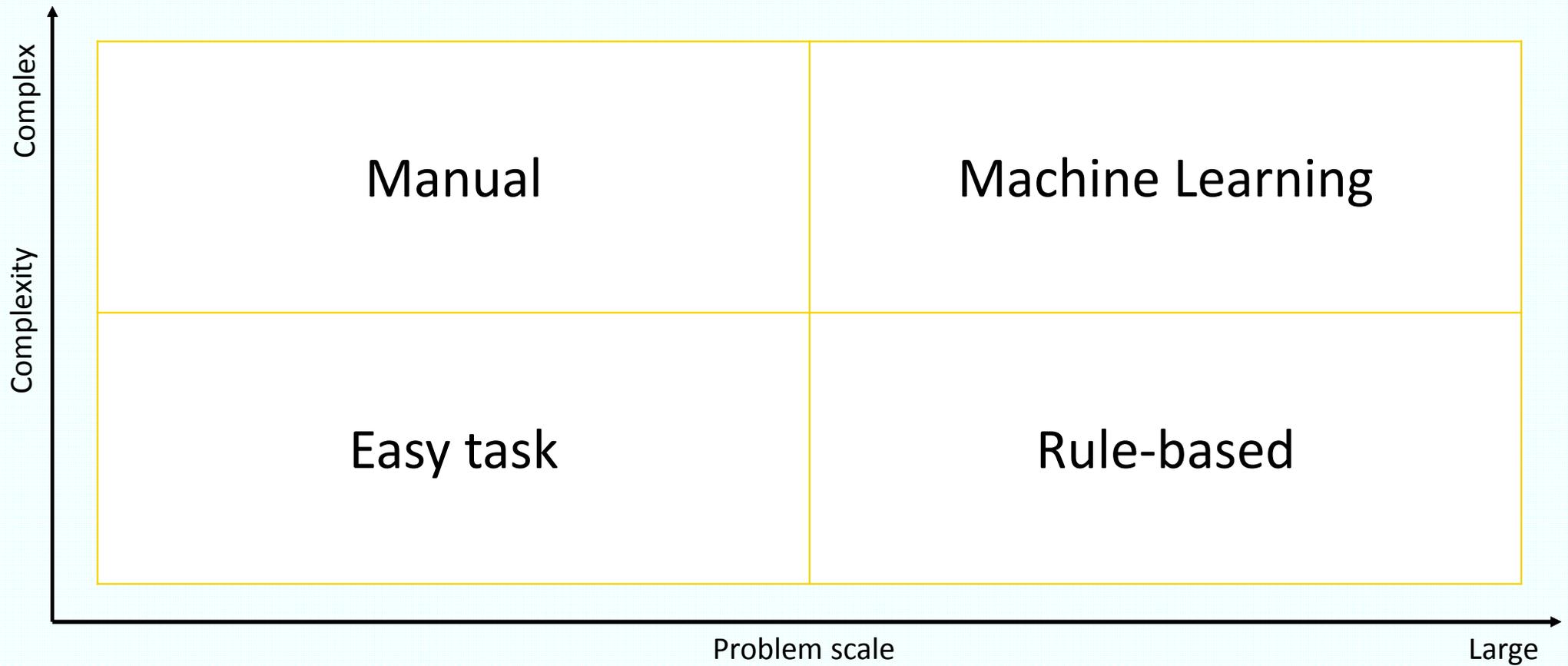
70%

Automation rate: 30%

Manual rate: 70%



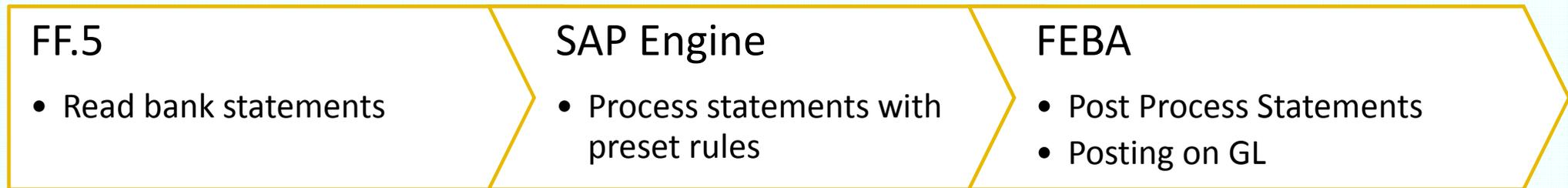
When to apply Machine Learning



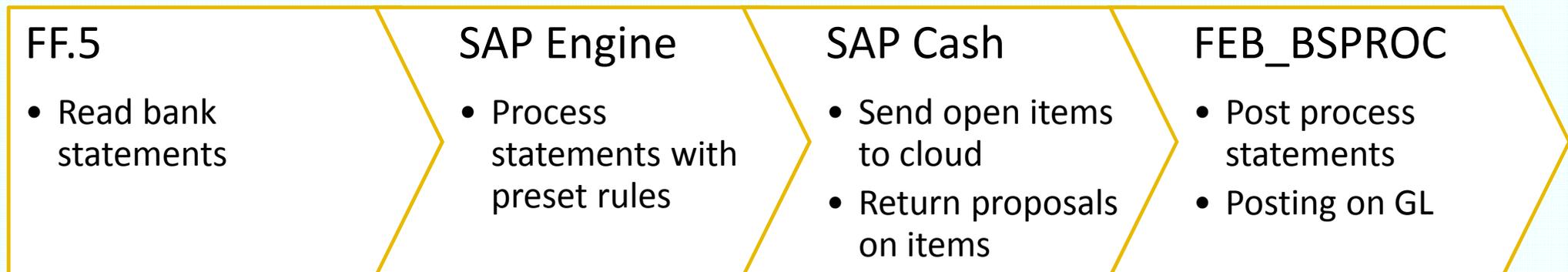


Process in SAP

Before



After





Implementation

System requirements:

- SAP ECC on latest patch level
- Implement SAP notes to install SAP Cash extensions
- Activate Business Functions
- Connection assessment SAP Cloud Platform
- Exchange certificates between UU and SAP



- Oct 18**
 - Training end-users
 - Training the data model
- Nov 18**
 - Production usage and training in prod
 - SAP Cash gives proposals
- Jan 19**
 - Refining model
- Feb 19**
 - New functionality: Filter enabled on customer data to lessen false positives
- Mar 19**
 - Automatic posting enabled



Results



Past

- Moderate AR automation rate using rule-based clearing
- Inefficient reprocessing of bank statement line items



Present

- AR automation rate increased to 90% in the first week after go-live
- Optimized reprocessing
- Increased efficiency and reduction of human errors
- Ability to scale shared services capabilities



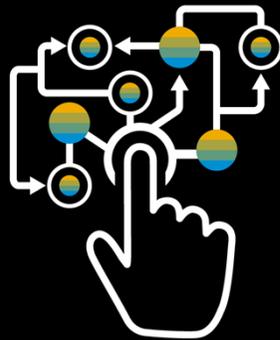
Future

- Extend Incoming and Outgoing Payments
- Improve invoice capture automation with Machine Learning
- Conversational AI to expedite processing of repetitive requests
- **Use SAP Cash App Explainability**

Trust as winning factor

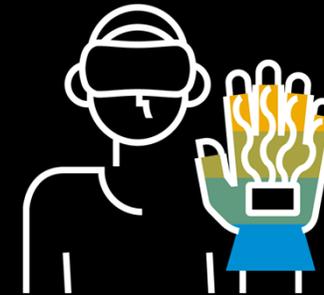
Automation

Reduce need for manual interactions for repetitive tasks



Intelligent interactions

Augment user experience with machine learning



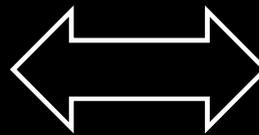
Transparency, consistency, and reliability

are key to earn trust and make proposals actionable and auditable.

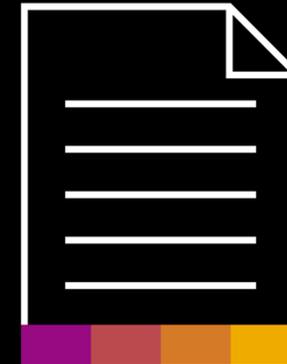
Despite internal complex representation,
how can we make advanced algorithms understandable?

SAP Cash Application – Generate interpretable proposals

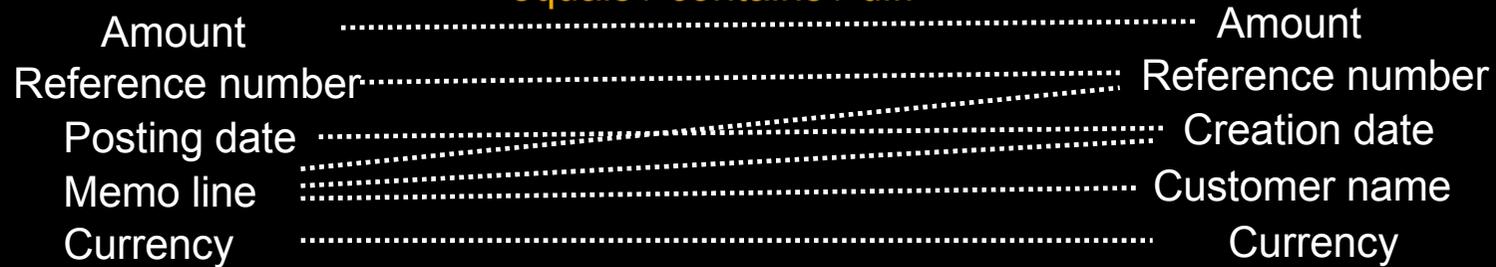
Bank statement item



Invoice



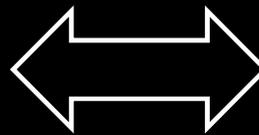
equals / contains / diff



+ identify determining factors

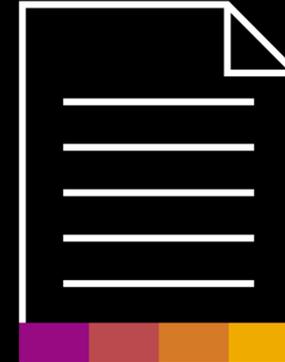
SAP Cash Application – Generate interpretable proposals

Bank statement item



98% match
(hypothetical)

Invoice



Memo line: for invoice 1234*

Invoice IDs can be found partially

Acc_Doc: 123456

Amount: 750

Amounts are pretty close

Amount: 749.99

Currency: USD

Same currency

Currency: USD



What's next

Use Cash App Explainability features (June 2019)

SAP Cash App with Payment Advice (June 2019)

Expand SAP Cash App usage to GL account postings (June 2019)

Implementation of *Invoice2Rec* with SAP VIM (PoC started)

Chatbot (PoC started)

Goods receipt matching (TBD)

Thank you.

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