



JAGGAER

Procurement Simplified

Artificial Intelligence in Procurement

How will AI influence your future procurement processes?

Diya Nasereddin – Account Director

Agenda

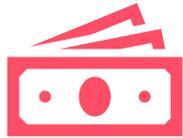
1. Facts & Figures about JAGGAER
2. What AI is and what it isn't
3. Deployment areas for AI in procurement
4. How JAGGAER uses AI
5. Developments resulting from the use of AI



2,000+ Customers

185 New Customers
in 2018

\$ 250 Million
Revenue globally



4 Million Suppliers
on the Platform



3 Million Users

Across Industries, Manufacturing,
Financial Services, CPG, Retail & Life
Sciences

20+ Years

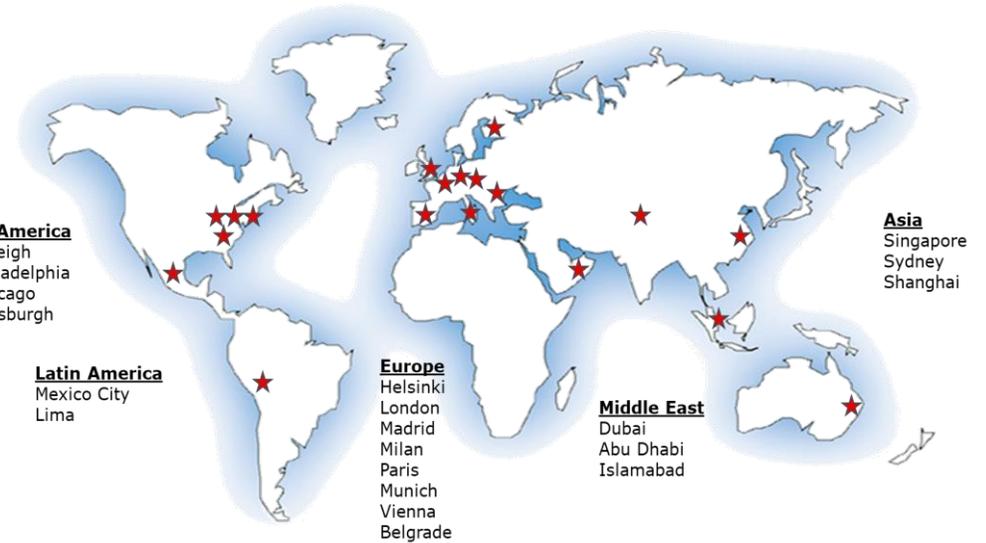
Dedicated to
Spend Management

1,200+ Employees globally
Offices in North America, Europe,
Middle East, Australia and Asia



38 Patents
Dedicated to
Spend

Global Leader in End to End Spend Management Solutions



A Recognized Leader

Leader in Magic Quadrants for Strategic Sourcing and P2P		IDC Marketscape Leader in 4 reports		Spend Matters' "50 Providers to Know" 5 th Year in a Row	
JAGGAER has been positioned as a leader in Gartner's Strategic Sourcing Suite Magic Quadrant for four consecutive reports.		Gartner Peer Insights Customers' Choice Strategic Sourcing Application Suites 2018	Wave for eProcurement, SRPM, CLM		

JAGGAER's Vertical/Industry Strategy:

“Vendors that understand the buy-side processes, challenges, and requirements of your industry can bring more value than a generic vendor.” – Forrester

The JAGGAER ONE Spend Management Platform



Trusted Worldwide



Manufacturing	Distribution	Life Sciences	Education	Public Sector	Healthcare	CPG	Retail
							
							
							
							
							

Agenda

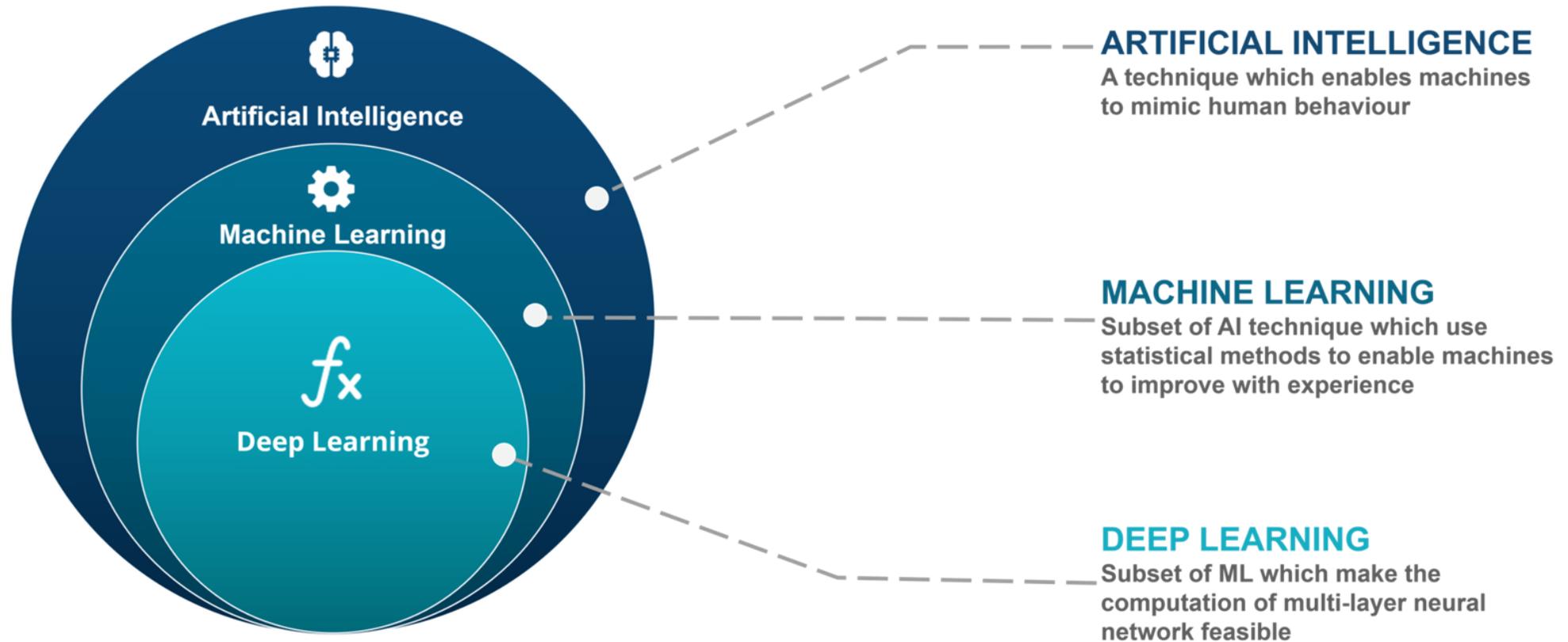
1. Facts & Figures about JAGGAER
2. What AI is and what it isn't
3. Deployment areas for AI in procurement
4. How JAGGAER uses AI
5. Developments resulting from the use of AI

What AI is

- **Artificial intelligence (AI)**, sometimes called machine intelligence, is **intelligence demonstrated by machines**, in contrast to the natural intelligence displayed by humans.
- Colloquially, the term “artificial intelligence” is often used to describe **machines that mimic cognitive functions** that we associate with the human mind, such as learning and problem solving.

(Source: Wikipedia)

AI / Machine Learning / Deep Learning



Strong / Weak AI

Strong AI:

- The aim of strong AI (also **super intelligence** or general AI) is to acquire or surpass **the same intellectual skills** as human beings.
- Strong AI does not just behave reactively, but also on its own initiative, intelligently and flexibly.
- As of today, it has not yet been possible to develop strong AI.

Weak AI:

- Weak (or narrow) AI refers to systems that focus on **solving specific application problems**, based on the methods of mathematics and computer science, which are specially optimized for the relevant requirement.
- **All currently existing systems fall within the category of weak AI.**

There is no DATA
like more DATA

Examples of AI



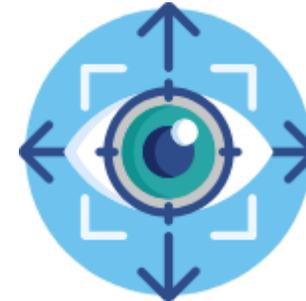
Recommendation systems

e.g.: Amazon, Spotify, Netflix



Natural language processing
(NLP)

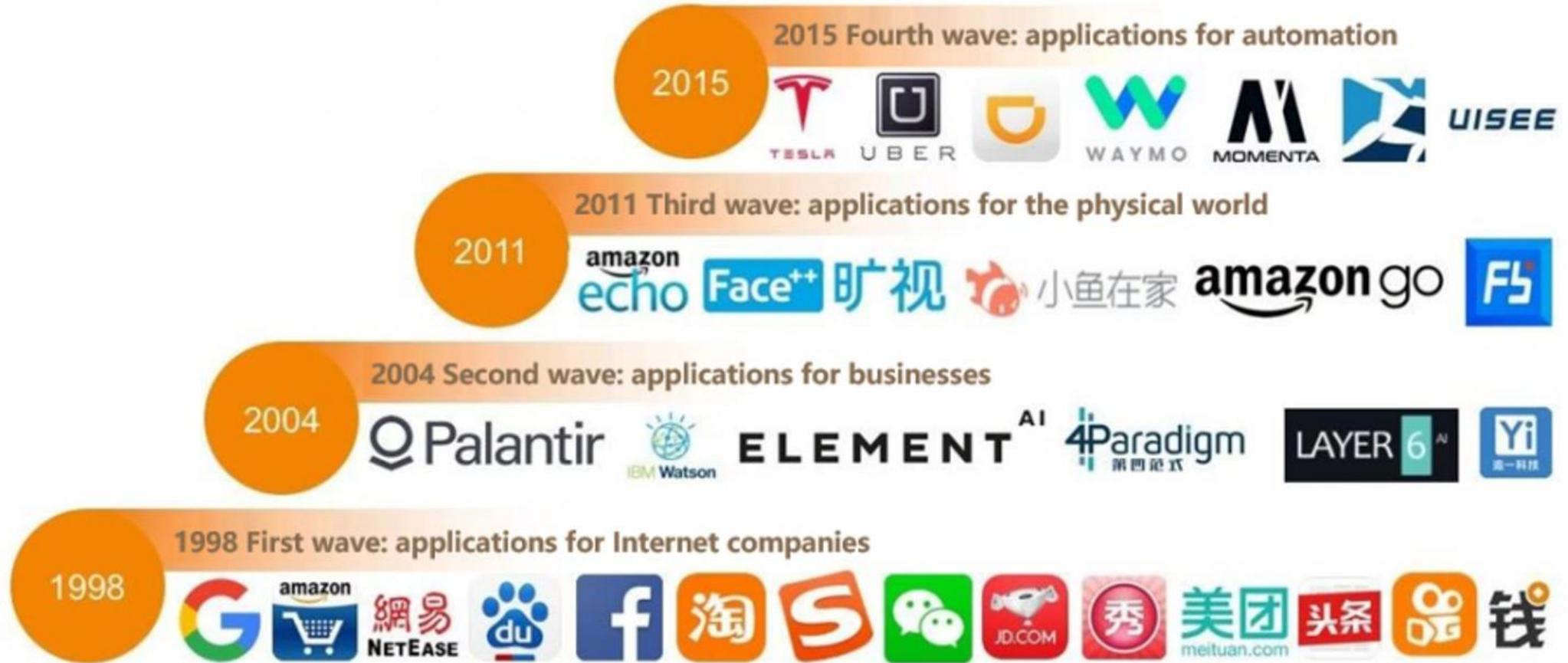
e.g.: Alexa, Siri, Cortana



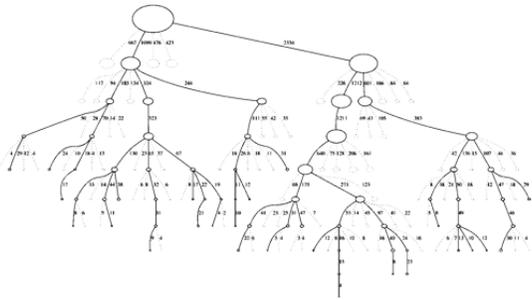
Computer vision and pattern
recognition

e.g.: OCR, error recognition

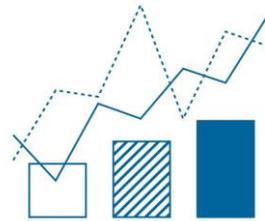
4 Waves of AI



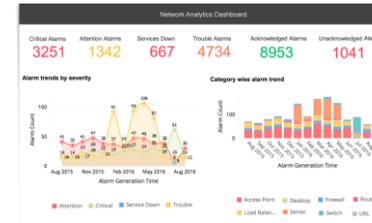
Examples of what is not AI



Decision trees

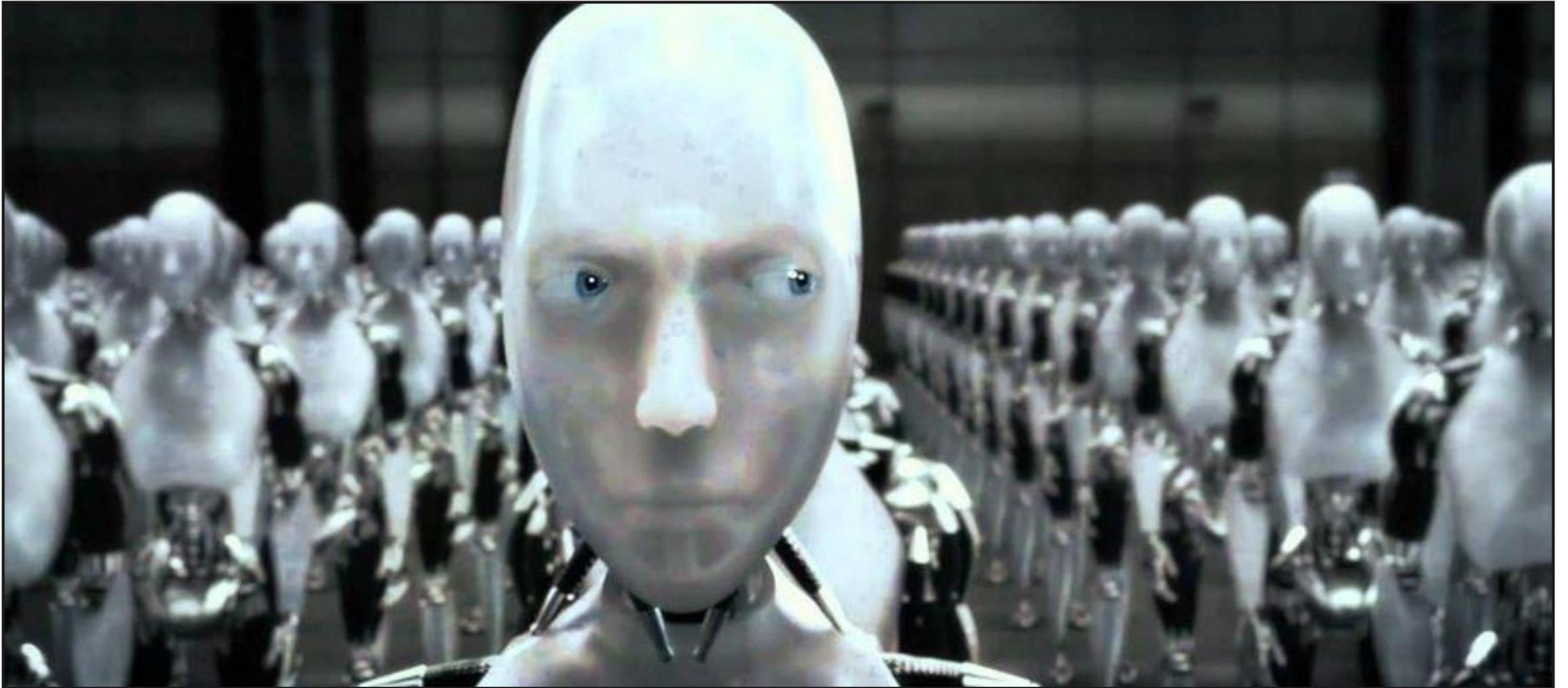


Statistics



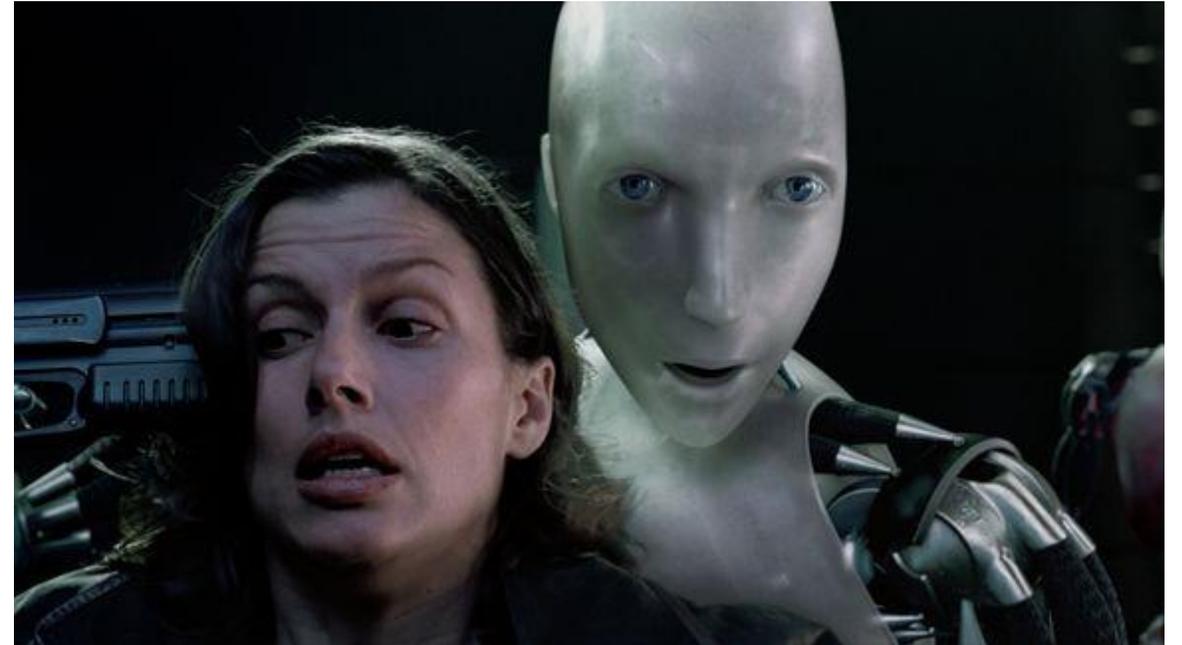
Data analytics

Common (mis)conceptions when AI is spoken about



Fears related to AI

- The movie industry presents AI in a negative way in blockbuster films
- Fear that jobs will be lost
- Fear of the unknown: technology is not understood
- Ethical questions, to which there are no simple answers, often provoke rejection
- Fear that human errors could turn machines against us, using AI - Value Alignment Problem
- ... and many other objections



Agenda

1. Facts & Figures about JAGGAER
2. What AI is, and what it isn't
3. Deployment areas for AI in procurement
4. How JAGGAER uses AI
5. Developments resulting from the use of AI

Areas where AI can be deployed in procurement

Process automation:

- Spend management
- Contract management
- Invoice checking
- Negotiation management

User guidance:

- Smart assistants
 - Customers
 - Suppliers

Recommendations:

- Supplier management
- Award decisions
- Category strategy
- Actions (supplier development)

Predictions:

- Spend
- Risk management
- Supplier reliability (OTD)

Agenda

1. Facts & Figures JAGGAER
2. What AI is, and what it isn't
3. Deployment areas for AI in procurement
4. How JAGGAER uses AI
5. Developments resulting from the use of AI

JAGGAER & AI

Process automation:

- Spend management
- Contract management
- Invoice checking
- Negotiation management

User guidance:

- Smart assistants
 - Customers
 - Suppliers

Recommendations:

- Supplier management
- Award decisions
- Category strategy
- Actions (supplier development)

Predictions:

- Spend
- Risk management
- Supplier reliability (OTD)

JAGGAER & AI

Process automation:

- Spend management
- Contract management
- Invoice checking
- Negotiation management

User guidance:

- Smart Assistant
 - Customers
 - Suppliers

Recommendations:

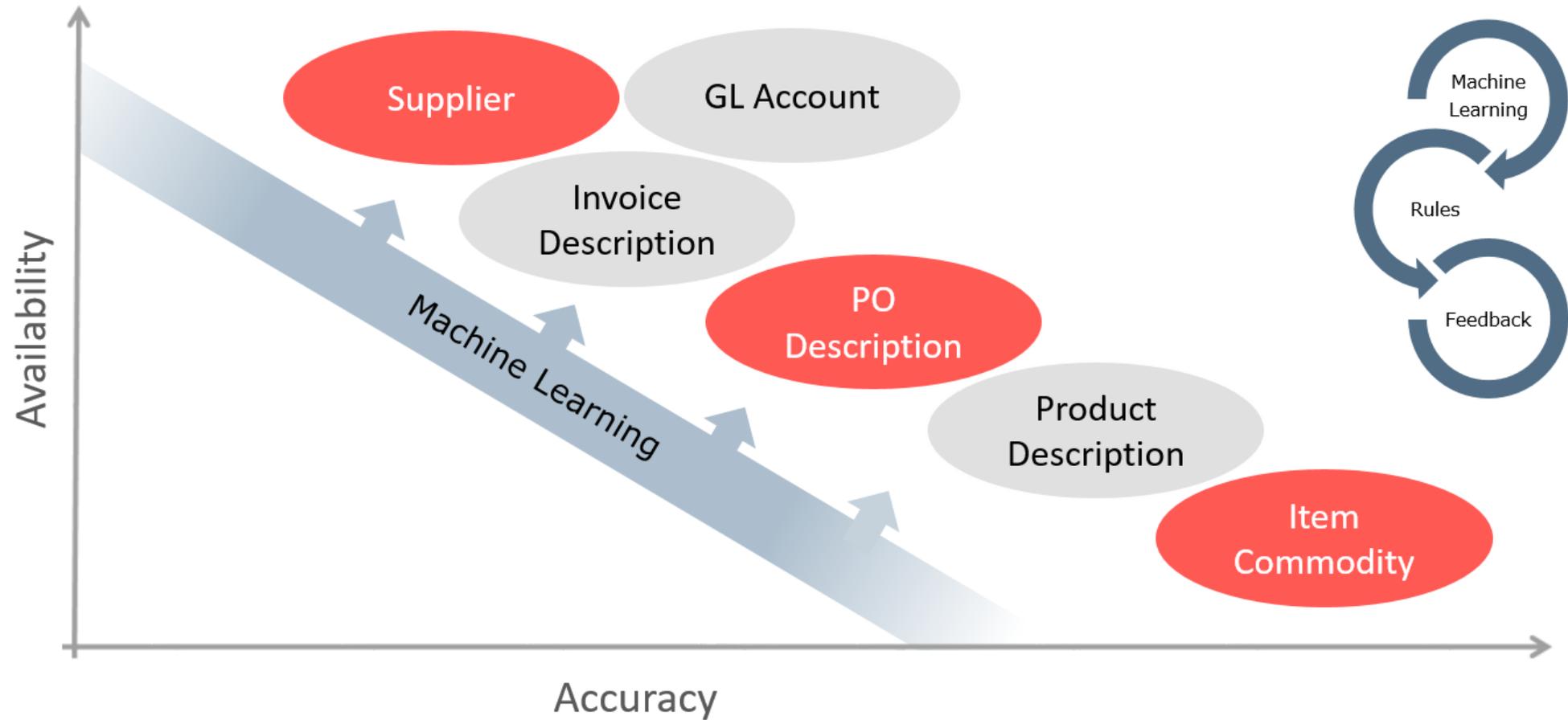
- Supplier management
- Award decisions
- Category strategy
- Actions (supplier development)

Predictions:

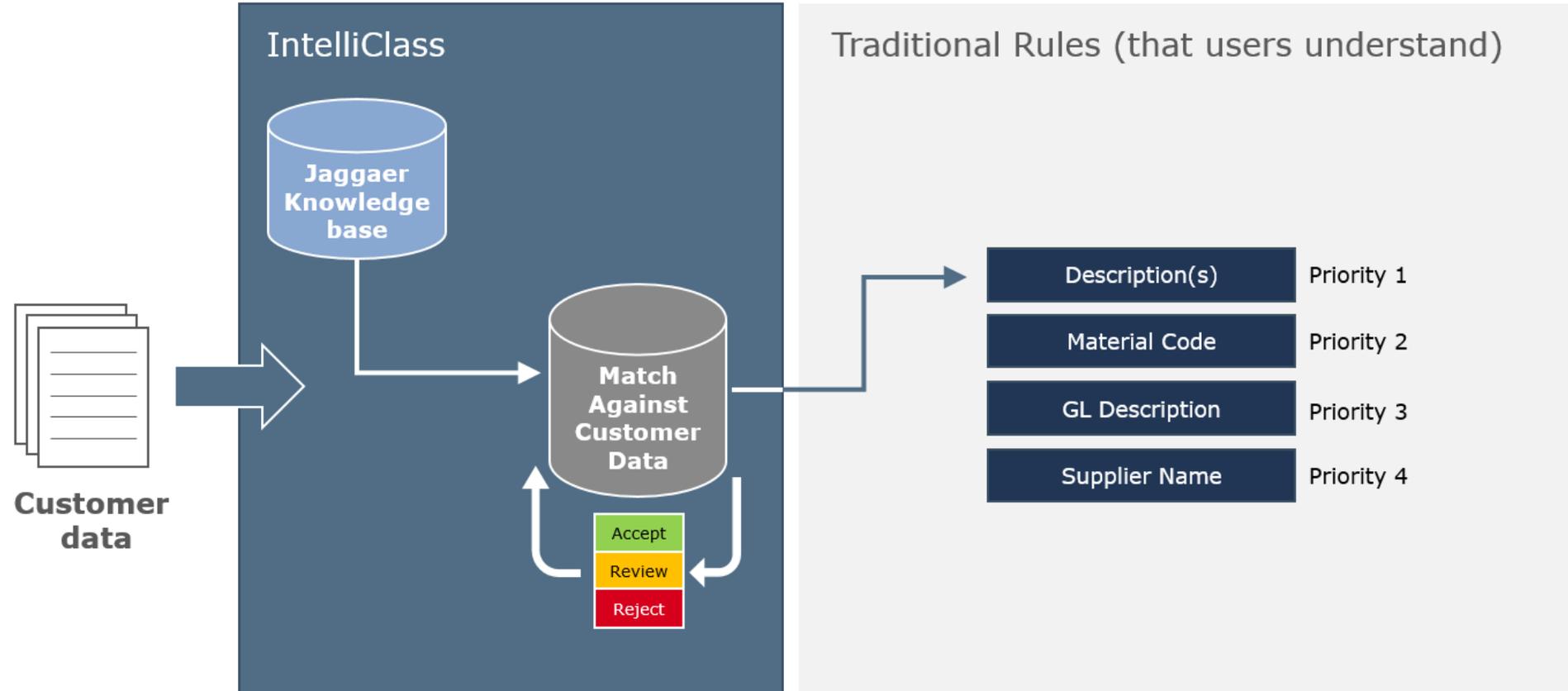
- Spend
- Risk management
- Supplier reliability (OTD)

Spend Management

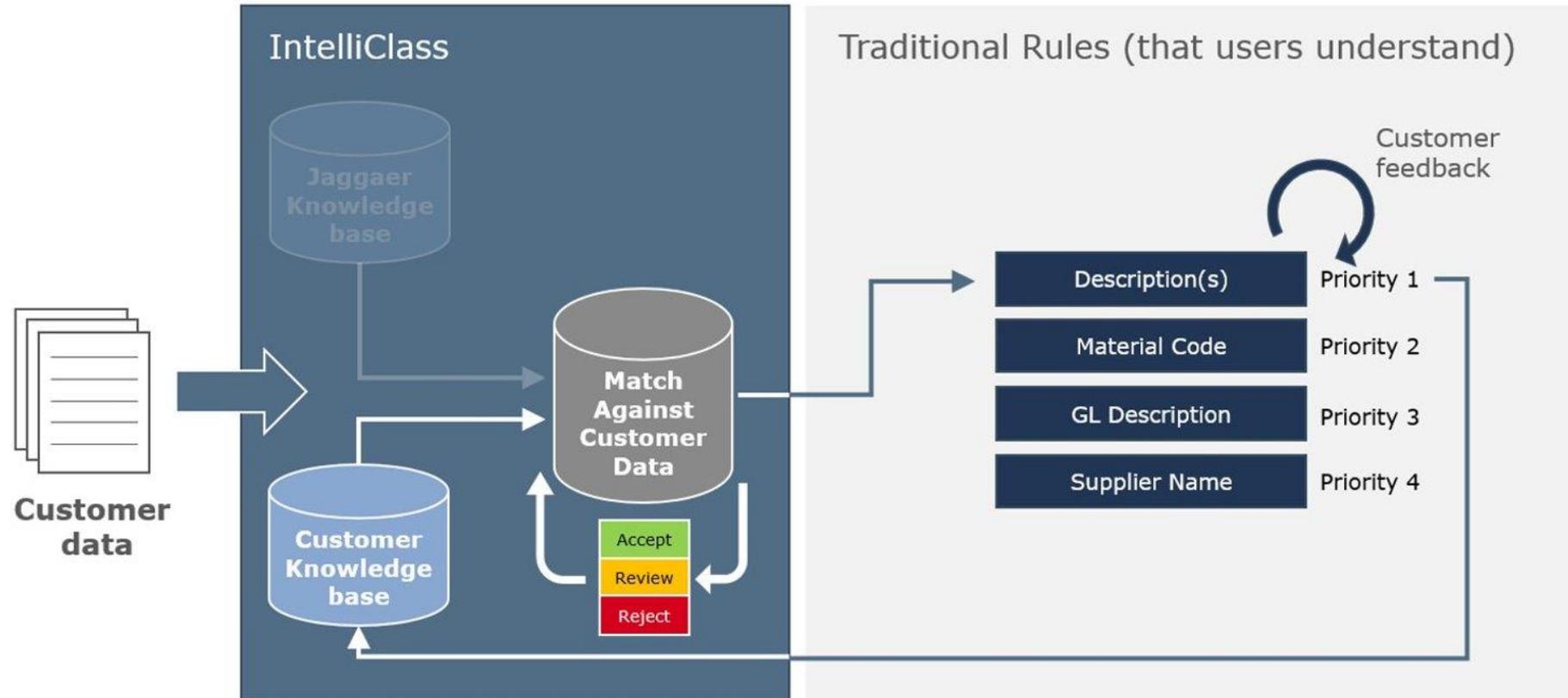
Spend management



Spend management

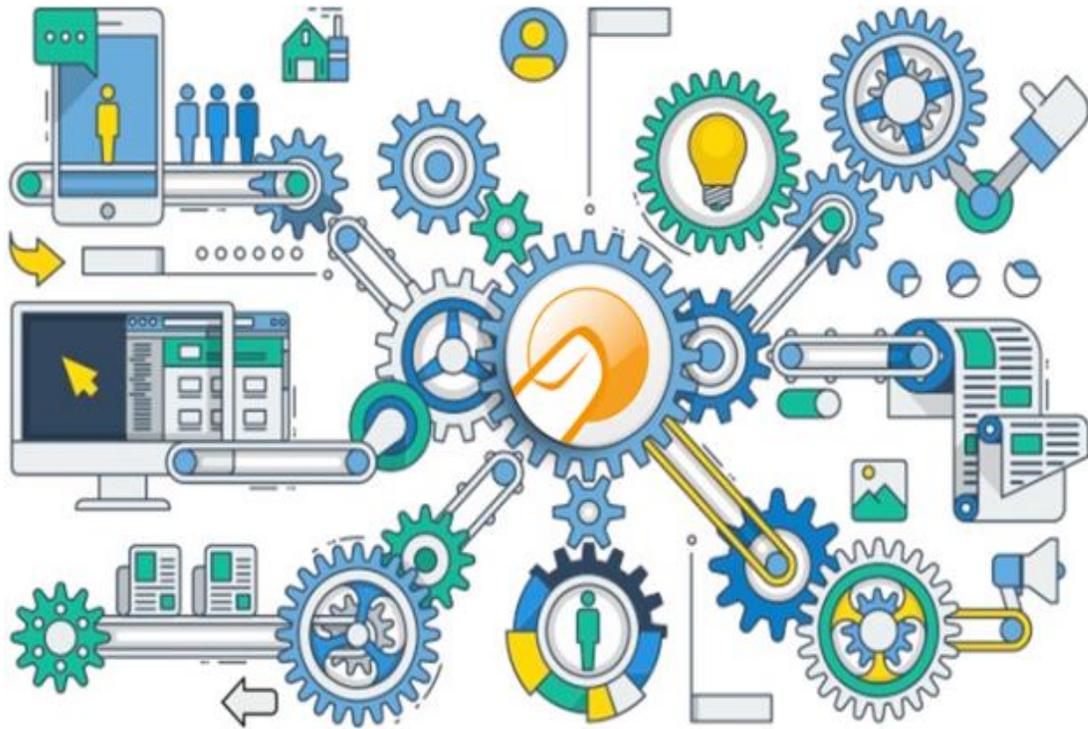


Spend management



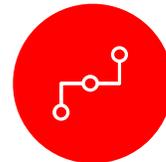
SMART Assistant

SMART Assistant



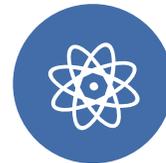
Help

Answers the most asked questions in a predefined FAQ



Assist

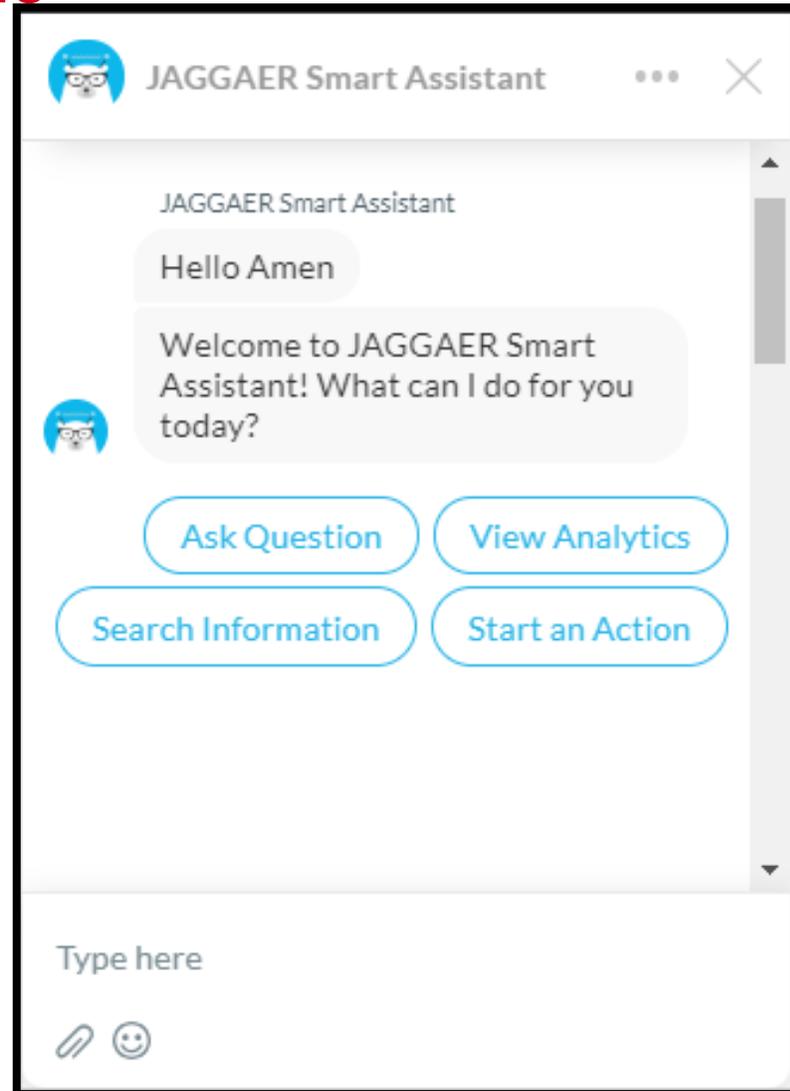
Assists the users in searching and taking actions via contextual conversations



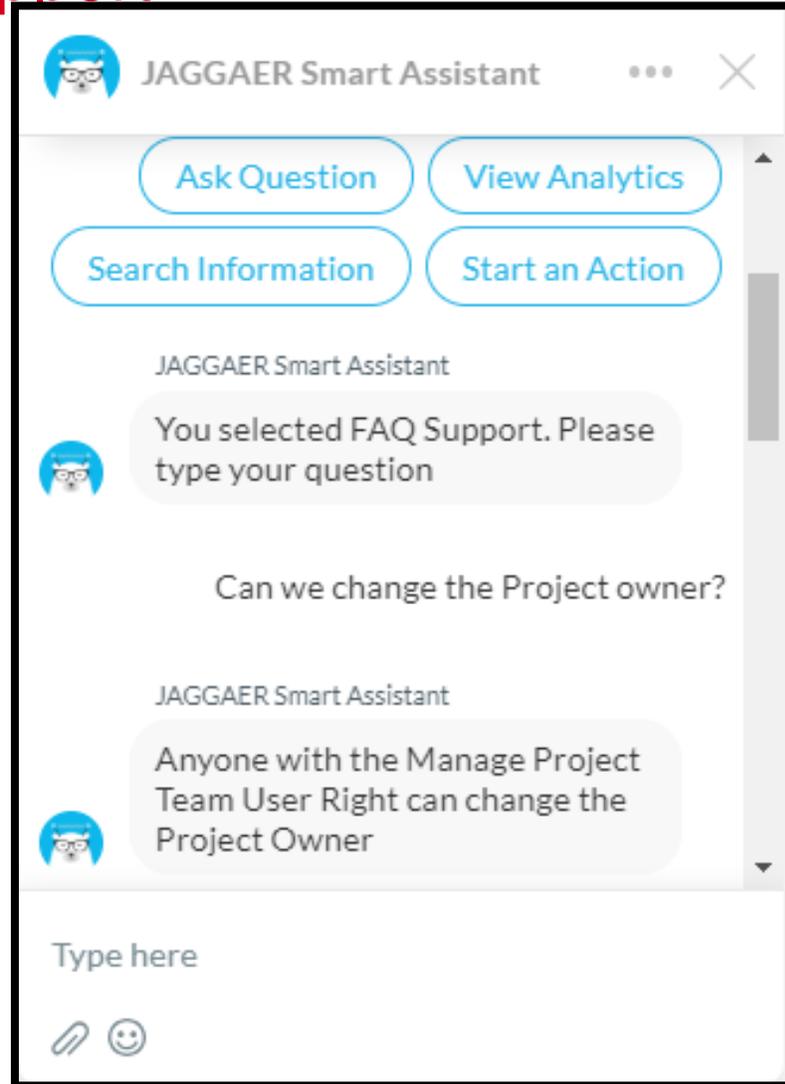
Act

Anticipates and acts in advance of phase

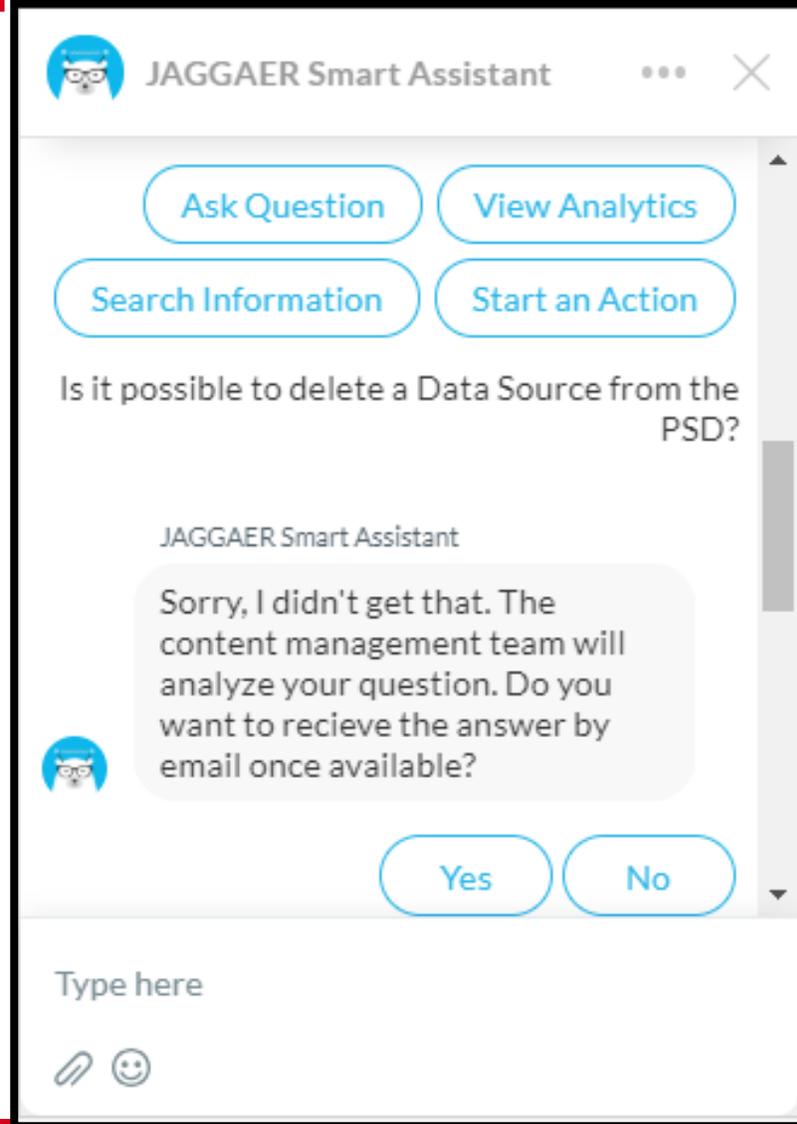
Example flow - Welcome



Example flow– FAQ Support



Example flow– FAQ Support - **handover to human**



Example flow – Take an action

New RFQ Cancel

Create RFQ

- Create new RFQ
- Create from an existing RFQ
- Create from an archived RFQ
- Create RFQ from Template

JAGGAER Smart Assistant

Ask Question View Analytics

Search Information Start an Action

JAGGAER Smart Assistant

Please select or type the action you would like to perform

New Project

Create Category Strategy

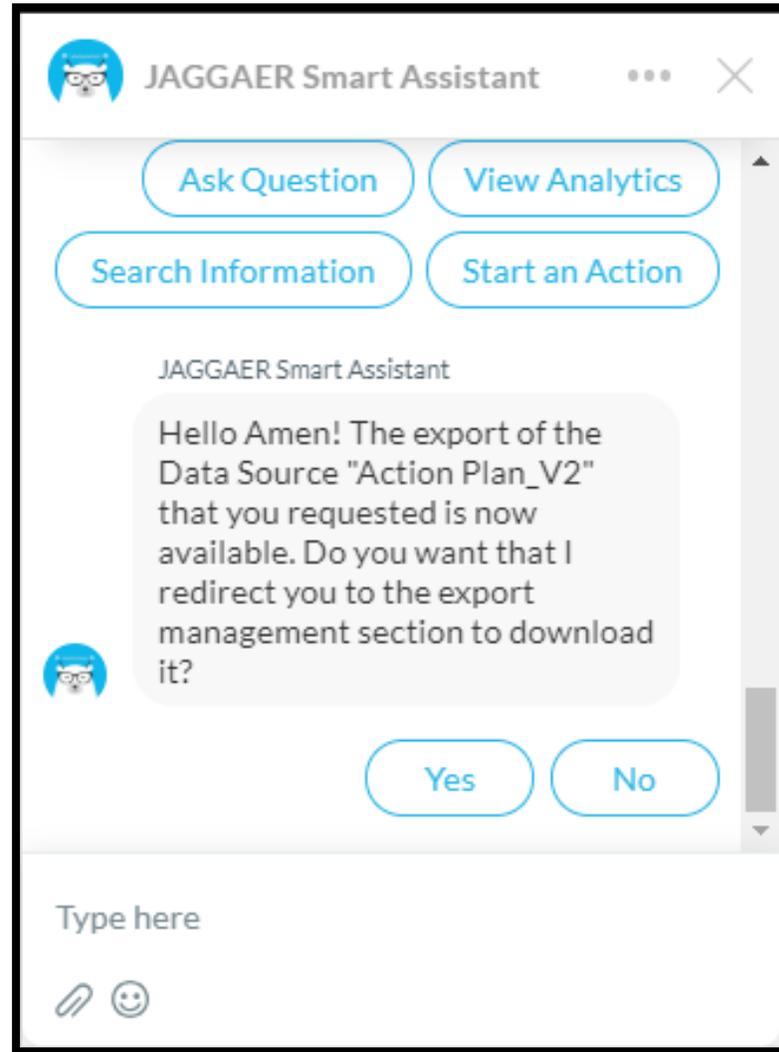
Create RFQ Create Contract

Register New Supplier

Type here

Example flow – Export notification



Recommendations

Recommendations

The screenshot displays the JAGGAER Recommendations dashboard. At the top, the JAGGAER logo is on the left, and a search bar is on the right. Below the header, the page title is "Recommendations 7 Total" with a "Show all" button. The main content is divided into two sections: "PENDING (5)" and "DISABLED (2)".

The "PENDING (5)" section contains a table with the following data:

<input type="checkbox"/>	TYPE	RECOMMENDATION	TRIGGER	ORIGIN	ASSIGNEE	PRIORITY	CREATION DATE ↓	
<input type="checkbox"/>	💡	Contact supplier for further information	Force of nature in supplier's country	🌐 Risk Management	PP	MEDIUM	01.11.2017 09:20 5 days pending	✓ ✕ 🔔
<input type="checkbox"/>	⚠️	Extend deadline	RFQ expired without any offers	🏷️ RFQ	GR	LOW	31.10.2017 21:39 6 days pending	
<input type="checkbox"/>	+	Financial audit	Financial risk	🌐 Category Management	PP	HIGH	31.10.2017 21:20 6 days pending	
<input type="checkbox"/>	💡	Check execution of strategies (RFQ)	Performance of dual sourcing strategy	🌐 Category Management	PP	MEDIUM	31.10.2017 11:45 6 days pending	
<input type="checkbox"/>	⚠️	RFQ for 368 materials	Changed raw material price	🏷️ CBD Analysis	GR	MEDIUM	30.10.2017 19:46 7 days pending	

A blue callout box with a triangle pointing to the "Changed raw material price" trigger in the last row of the pending list contains the text "Examples for triggers".

The "DISABLED (2)" section contains a table with the following data:

<input type="checkbox"/>	TYPE	RECOMMENDATION	TRIGGER	ORIGIN	ASSIGNEE	PRIORITY	CREATION DATE ↓	
<input type="checkbox"/>	💡	Check if change was announced in advance	Change of management	🌐 Category Management	IZ	LOW	29.10.2017 06:55 8 days pending	

Predictions

Forecasting: OTD predictions

The screenshot displays a web application interface for forecasting On-Time Deliveries (OTD). The browser address bar shows the URL: <https://demo.pool4tool.com/modules/dashboard/home#dashboard/99670>. The page title is "Overview Dashboard".

The dashboard is divided into two main sections:

- OTD PREDICTIONS - ON TIME:** A table listing 16 orders with their predicted status and confidence levels.
- OTD PREDICTIONS - LATE DELIVERIES:** A table listing 3 orders predicted to be late, with their confidence levels.

The "ON TIME" table data is as follows:

Order	Prediction	Confidence
EO55888899	ON TIME	100 %
EO559999	ON TIME	100 %
EO556789	ON TIME	100 %
EO123455667	ON TIME	100 %
EO1234568	ON TIME	100 %
EO1234567	ON TIME	100 %
4500023396	ON TIME	97 %
eo_001	ON TIME	100 %
jv_0503_4	ON TIME	99 %
jv_0503_3	ON TIME	99 %
eo_2_12345	ON TIME	100 %
jv_0503_2	ON TIME	99 %
jv_0503_1	ON TIME	99 %
eo_01234	ON TIME	100 %
4500023376_011	ON TIME	100 %

The "LATE DELIVERIES" table data is as follows:

Order	Prediction	Confidence
eo_1_12345	LATE	86 %
4500023376_012	LATE	92 %
4500023376_012	LATE	92 %

Forecasting: OTD predictions

The image displays a workflow for forecasting On-Time Delivery (OTD) predictions. It consists of three main components:

- SAP PO Interface:** Shows a purchase order for order number 4500023397. The vendor is 100017 supply world, and the purchase organization is 1000 IDES Deutschland. The material is Aluminiumgehäuse Spec ... with a quantity of 10 PC.
- Pool4tool Overview Dashboard:** A web-based dashboard showing a list of OTD predictions. The order 4500023397 is highlighted with a 98% confidence level and an 'ON TIME' prediction.
- Forecasting Detail View:** A pop-up window showing a detailed prediction for order 4500023397, indicating it is 'Predicted to be on time' with a 98% confidence level. It also lists items predicted to be on time and late.

Prediction	Confidence	Pos.	Quantity	Delivery date (requs...)
ON TIME	98 %	10	10,00	2019-03-21

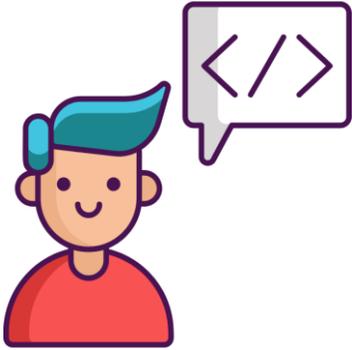
Order	Prediction	Confidence
4500023397	ON TIME	98 %
E05588899	ON TIME	100 %
E0559999	ON TIME	100 %
E0556789	ON TIME	100 %
E012345667	ON TIME	100 %
E01234568	ON TIME	100 %
E01234567	ON TIME	100 %

Order number	Supplier number	IDX	Quantity	Requested delivery date	Predicted
4500023397	100017	10	10,00	2019-03-21	On Time (98%)

Forecasting: OTD predictions



Forecasting: OTD predictions



Increase productivity

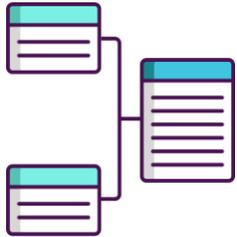
Should rely on existing data

Ideally bring in value

Forecasting: OTD predictions



Data mining



Data Science

Extracting data from internal database / external sources

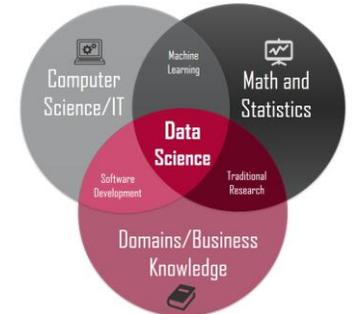
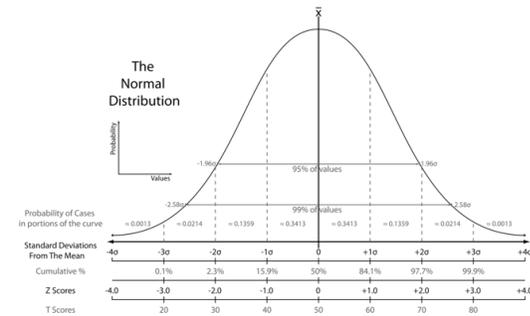
Joint operation of a person with knowledge of business and IT

Normalizing data

Bringing features to the same scale

Finding relevant features

We should not be concerned with the concrete instance but the pattern



Forecasting: OTD predictions



Training



Evaluation

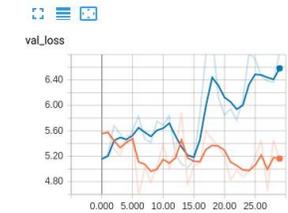
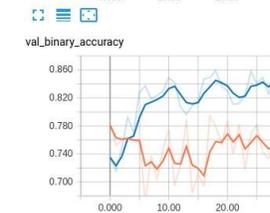
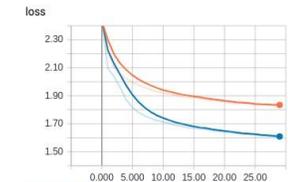
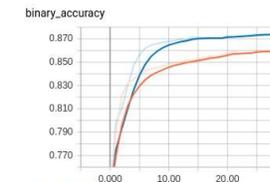
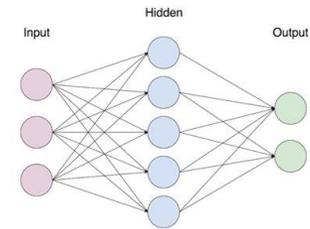
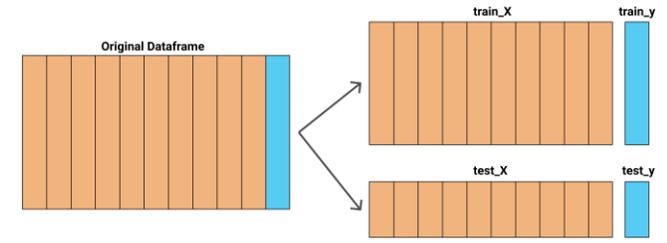
Supervised

Training

Train – Test Split

Evaluation

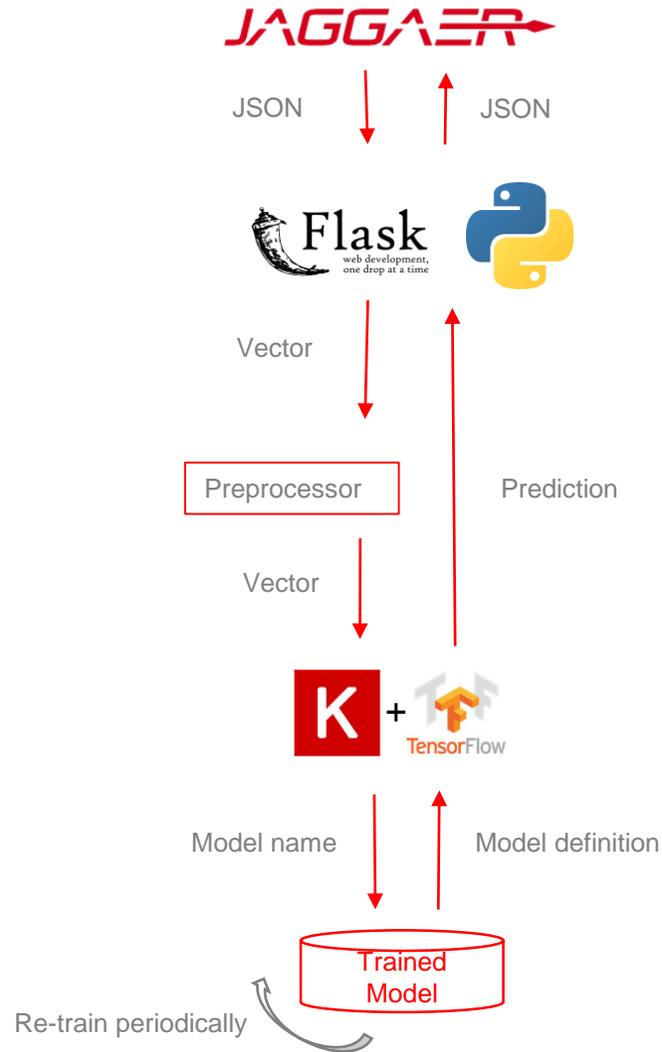
We have to be able to measure the quality of predictions



Forecasting: OTD predictions



Production



Übersicht Dashboard

OTD Prediction

Auftrag	Partner #	Lieferant	EXORG	Bestellart	Vorhersage	Konfidenz
651018886	000516085	Tokyo Seimitsu Co., Ltd.	7003	NB	PUNKTLICH	98%
310204848	000558416	RS Components GmbH	0004	ZONL	SPÄT	52%
681000666	000556306	CNC Innovations Inc.	7003	ZPR	PUNKTLICH	95%
651018875	5556311	Brass Company	7003	NB	PUNKTLICH	98%
651018874	5412359	Karl Berrang GmbH Mecha...	7003	NB	PUNKTLICH	98%
651018873	5556320	Automation Inc.	7003	NB	PUNKTLICH	98%
310204847	000558416	RS Components GmbH	0002	ZONL	SPÄT	54%
726006388	5632894	Shearline Precision Engin...	6000	NB	PUNKTLICH	95%
651018870	5556338	Independent Packing Inc	7003	NB	PUNKTLICH	95%
310204841	000558483	Staples Deutschland GmbH & ...	0006	ZONL	SPÄT	53%
310204840	000556401	Conrad Electronic GmbH	0006	ZONL	SPÄT	50%
410877285	5580194	JAGGAER Austria GmbH	0002	NB	PUNKTLICH	98%
430016396	5525722	Zöllner Elektronik AG Betriebs...	0006	NB	PUNKTLICH	98%
310204838	000558579	Mühlberger GmbH	0004	ZONL	SPÄT	50%
651018859	5634769	Shanghai Shansi plastic Co. Ltd	7003	NB	PUNKTLICH	98%
651018858	5629046	Mercury Minnesota Inc	7003	NB	PUNKTLICH	98%
651018857	000614505	Jungtur Suling Precision Mac...	7003	NB	PUNKTLICH	98%
651018856	5598819	Sammina Corporation	7003	NB	PUNKTLICH	98%
651018855	5582028	Carl Zeiss Jena GmbH Stande...	7003	NB	PUNKTLICH	98%
651018853	000558976	Nortech Systems Inc.	7003	NB	PUNKTLICH	98%
4580227561	0005539372	Tittel Feingerätechnik GmbH...	0014	NB	PUNKTLICH	98%
4580227563	5538855	Euler Feinmechanik GmbH	0014	NB	PUNKTLICH	98%
4580227566	0005539372	Tittel Feingerätechnik GmbH...	0014	NB	PUNKTLICH	98%
4580227549	5281525	Siroc O.A.E. Simon GmbH Gum...	0014	NB	PUNKTLICH	98%
651018851	000556407	Markman Metals Inc.	7003	NB	PUNKTLICH	98%
651018850	000556373	Markman Metals	7003	NB	PUNKTLICH	98%

Agenda

1. Facts & Figures about JAGGAER
2. What AI is, and what it isn't
3. Deployment areas for AI in procurement
4. How JAGGAER uses AI
5. Developments resulting from the use of AI

How will things develop further?

- Data will become even more decisive
- Tasks and roles will change
- The level of automation will increase continuously – autonomous systems will emerge
- People and machines will be most successful working together
- Communication: AI – people; AI - AI
- Industry 4.0: optimized with AI
- Two classes of company will emerge (with/without AI)



A hand holding a pen is shown in a red-tinted, semi-transparent overlay. The background features a network diagram with yellow nodes and lines on a dark blue background, transitioning into a yellow background with red nodes and lines. The word "Questions?" is written in white, bold, sans-serif font.

Questions?

JAGGAER →
Procurement Simplified