

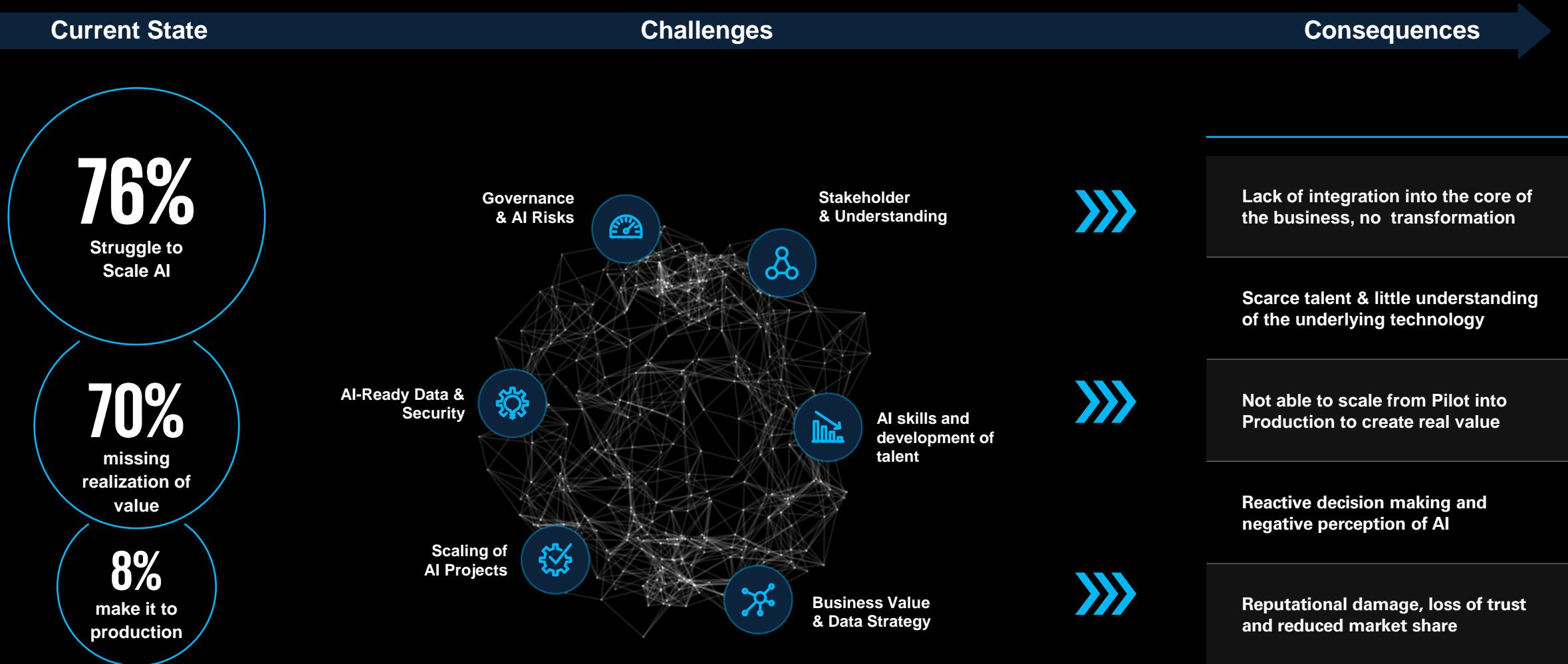
KPMG Technology

Emerging Technology | AI | Automation | Data & Analytics

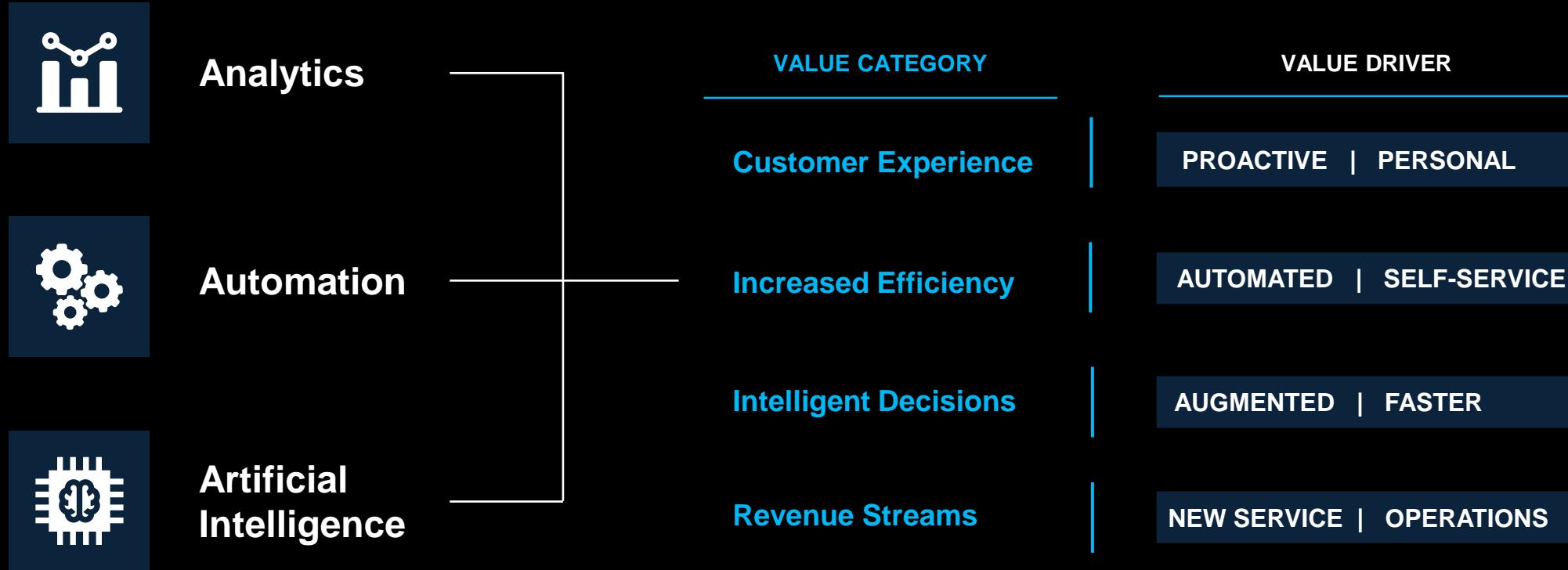
Artificial Intelligence | 2024

Tom Einar Nyberg | KPMG | Tenyberg@kpmg.no | 908 728 03

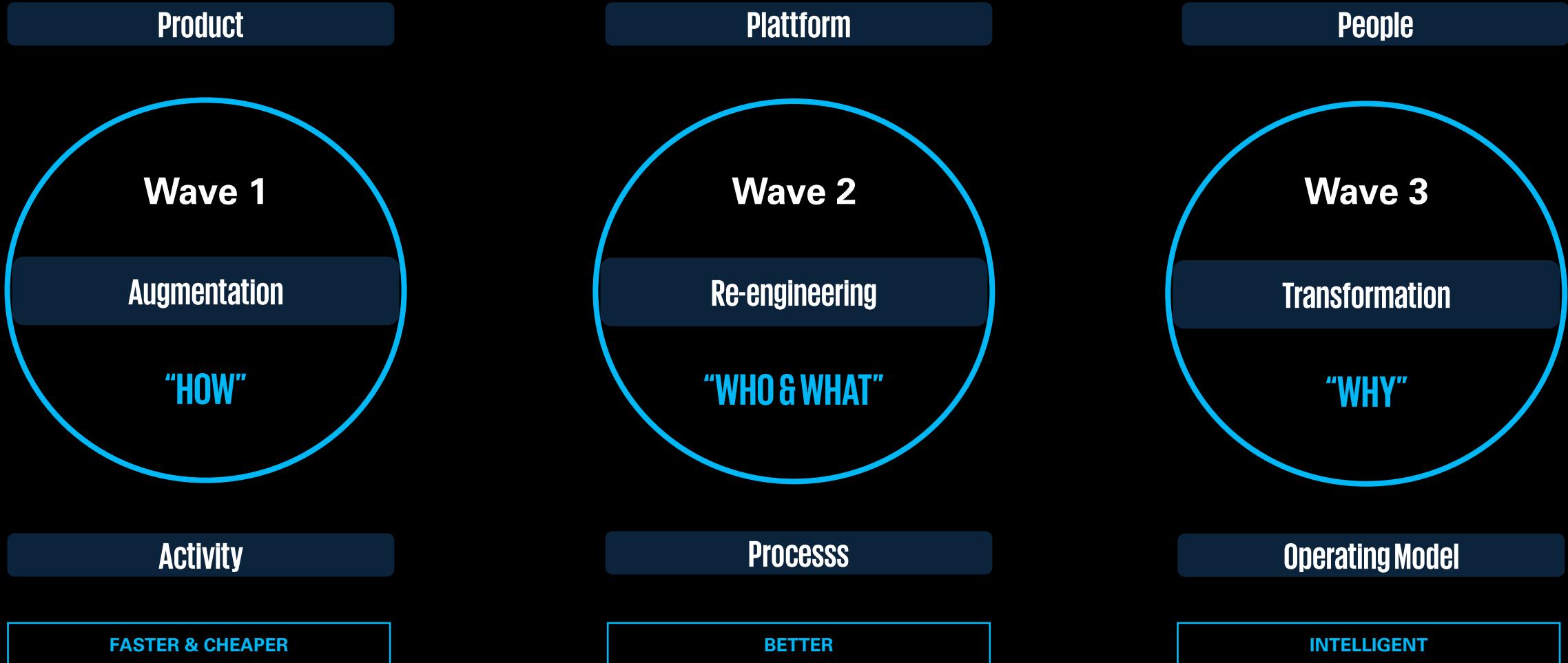
Scaling | Businesses today faces a frustrating reality trying to succeed with AI



Business-Driven | Value from AI is found within four different categories



Maturity | AI Transformation will evolve in different “waves” of maturity



Wave 1 | Augmentation is shifting where we can contribute with our intelligence



Wave1 | It is already changing our ways of working...THIS IS already adopted

OFFICE CO-PILOT



Ppt
Excel
Word
Mail
Teams

DYNAMICS CO-PILOT



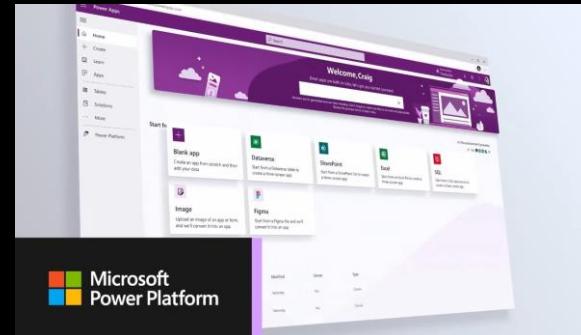
GIT-HUB CO-PILOT



CHAT-GPT & INTEGRATIONS



LOW-CODE COPILOT

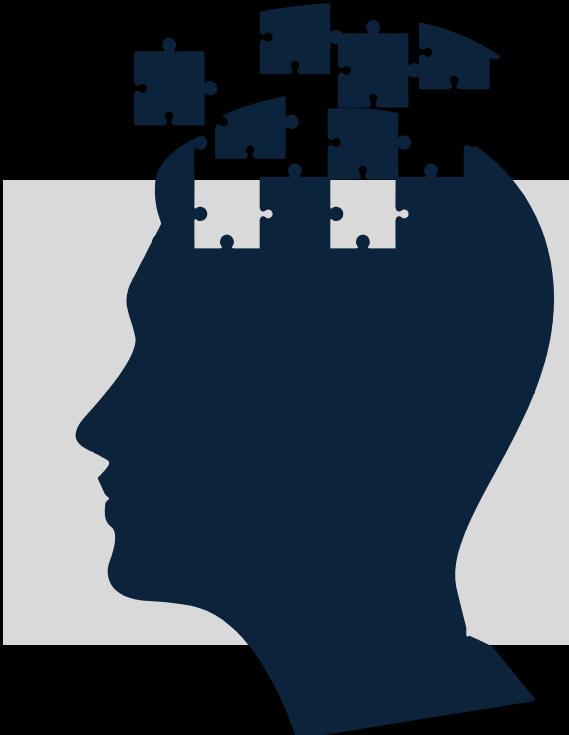
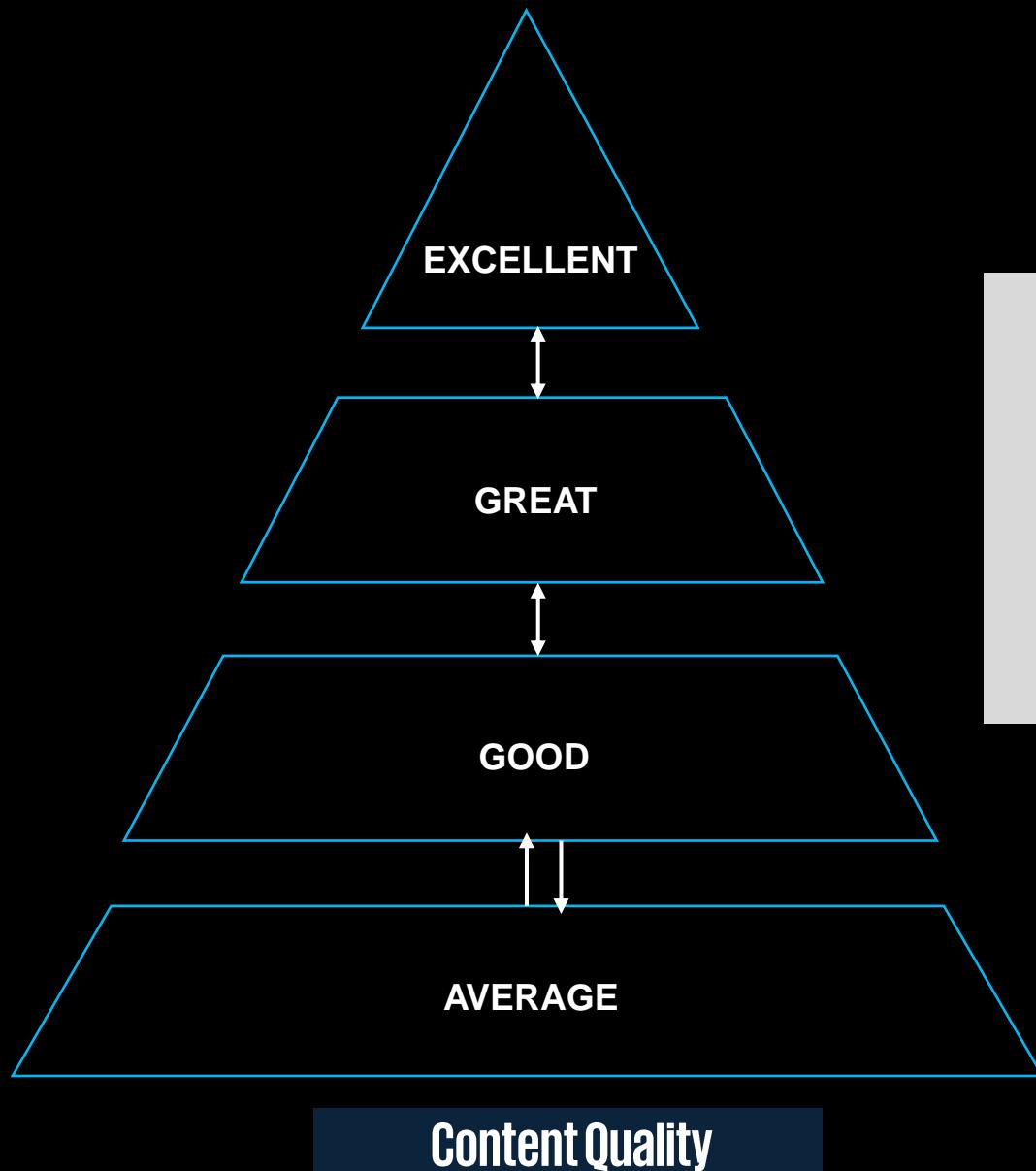


GPT API SERVICES



CHALLENGE -Very little governance in place - Bring your Own AI....

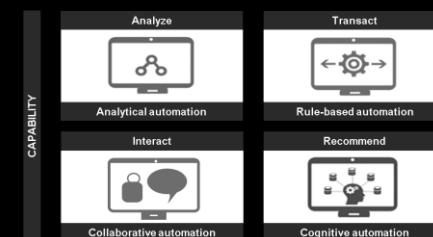
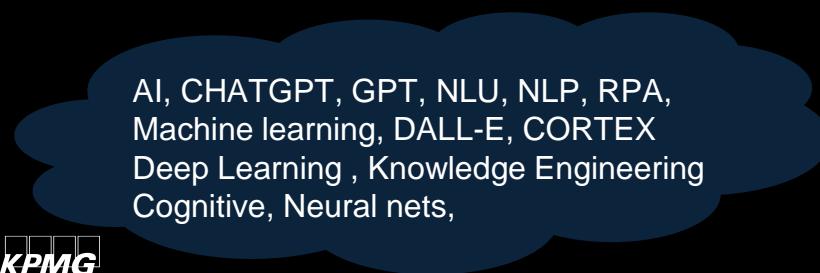
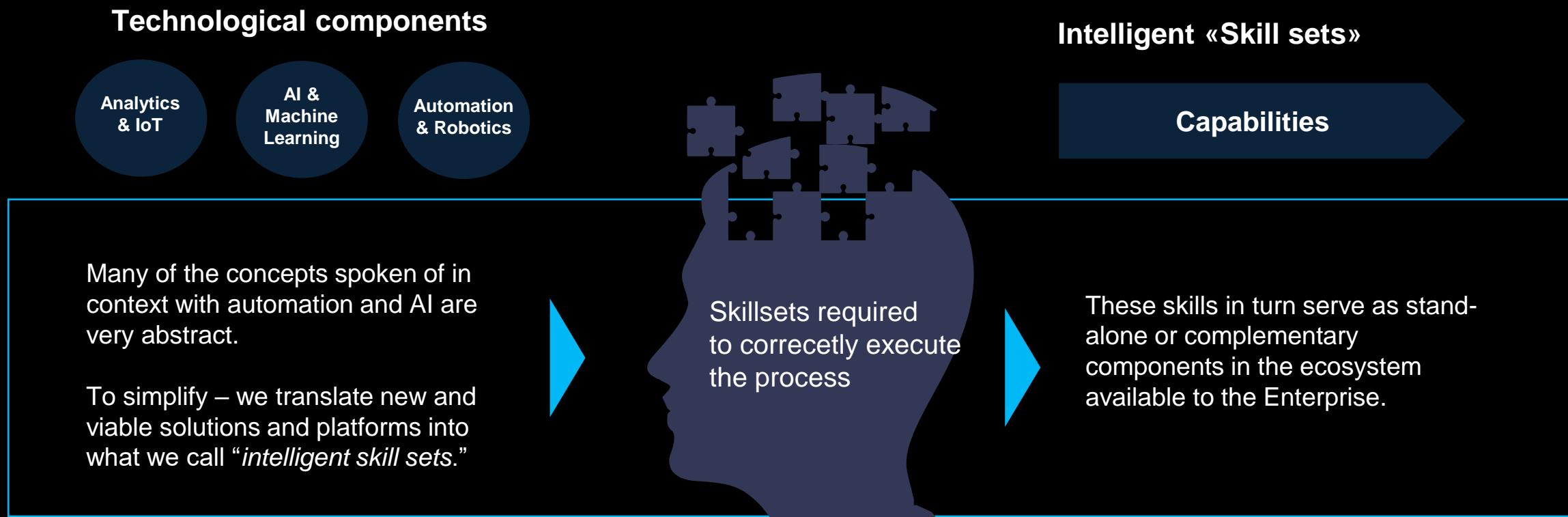
As adoption increases – this is also shifting the future bar for being value adding...



If the alternative is
Automation – are you
delivering more Value ??

Skillsets will have to change
– average work is the first to
go away....

Wave 2 | To re-design with Intelligence- we translate technological capability into different “Intelligent skills” that can be integrated into the process



Intelligent capabilities can be sorted into five groups - “skillsets”:

Interact | Analyze | Transact | Recommend | Generate

Conversations & digital interaction, clarify intent and capture input

Interpret unstructured data, language, images, sound to data-core

Perform transaction based on standard rules, APIs and workflow

Make recommendations and optimize decisions based on data

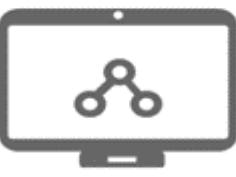
Automatically generate new content based on user data and instructions

Interact



Collaborative

Analyze



Analytical data-processing

Transact



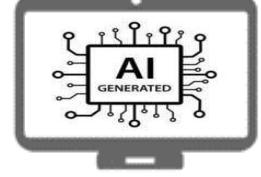
Rule-based automation

Recommend



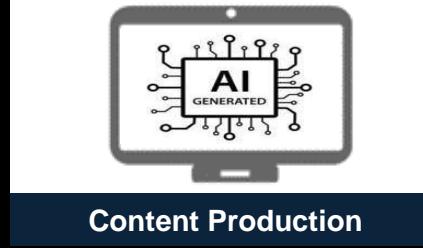
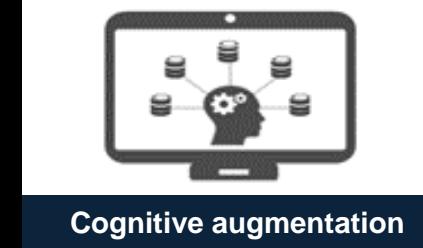
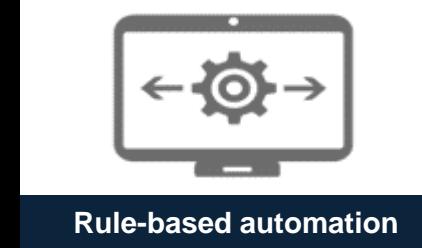
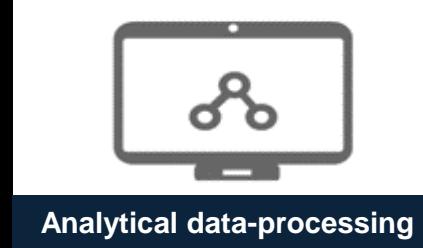
Cognitive augmentation

Generate



Content Production

CAPABILITY



ABILITY

- Language processing
- Interpretation
- Confer with knowledge base
- Digital Interfaces

- Classify and interpret unstructured data, images, video, sound
- Create structured data
- Base knowledge

- Structured input data
- API transcation
- Defined rules & logic
- Existing applications

- Event monitoring
- Pattern recognition
- Predict & Optimize
- Adaptive logic & reasoning

- Code generation
- Image generation and editing
- Video generation and editing
- Text generation
- Audio creation

TECH

- Virtual agents
- NLU / NLG
- Low Code Interfaces
- Knowledge engineering

- Image / Text / Sound processing
- Machine learning
- Deep learning
- Knowledge base

- Intelligent Automation
- Workflow Automation tools
- Low-Code Platforms
- Business Platforms

- Cognitive support systems
- Machine learning
- Deep learning
- Big data processing

- Generative AI
- AI Co-pilots
- Foundation Models
- AI Applications add-ins

By integrating skills together we can exploit Data and Intelligence in new ways

MONITOR & INGEST DATA

IoT & Data streams

Digital data streams from a variety of IoT and digital sources

IOT



Text & Language

Ingest and process language and written unstructured data

Text



Images & Video

Images and live video signals provided from cameras & drones

Image



Audio & Speech

Audio signals related to human speech and other sounds

Sound



ANALYZE & PROCESS DATA

Process Language

Natural Language Processing in order to determine intent, content and sentiment

Process



Entity extraction

Utilize ML in order to process and structure unstructured data to structured elements

Entity



Classify / Cluster

Pattern recognition for large data sets based on evolved neural nets to classify the data

Classify



Knowledge Base

Structure knowledge and rules learning based on experience over time

Knowledge



RESPOND & ACT

Predict/Recommend

Recommend decision and actions based on analytical engine and cognitive support

Predict



Content Generation

Utilize AI generation to produce responses by voice, image, video or text to human users

Content



Perform Transaction

Execute transactions with Robotics, APIs, databases and related technologies

Robotics



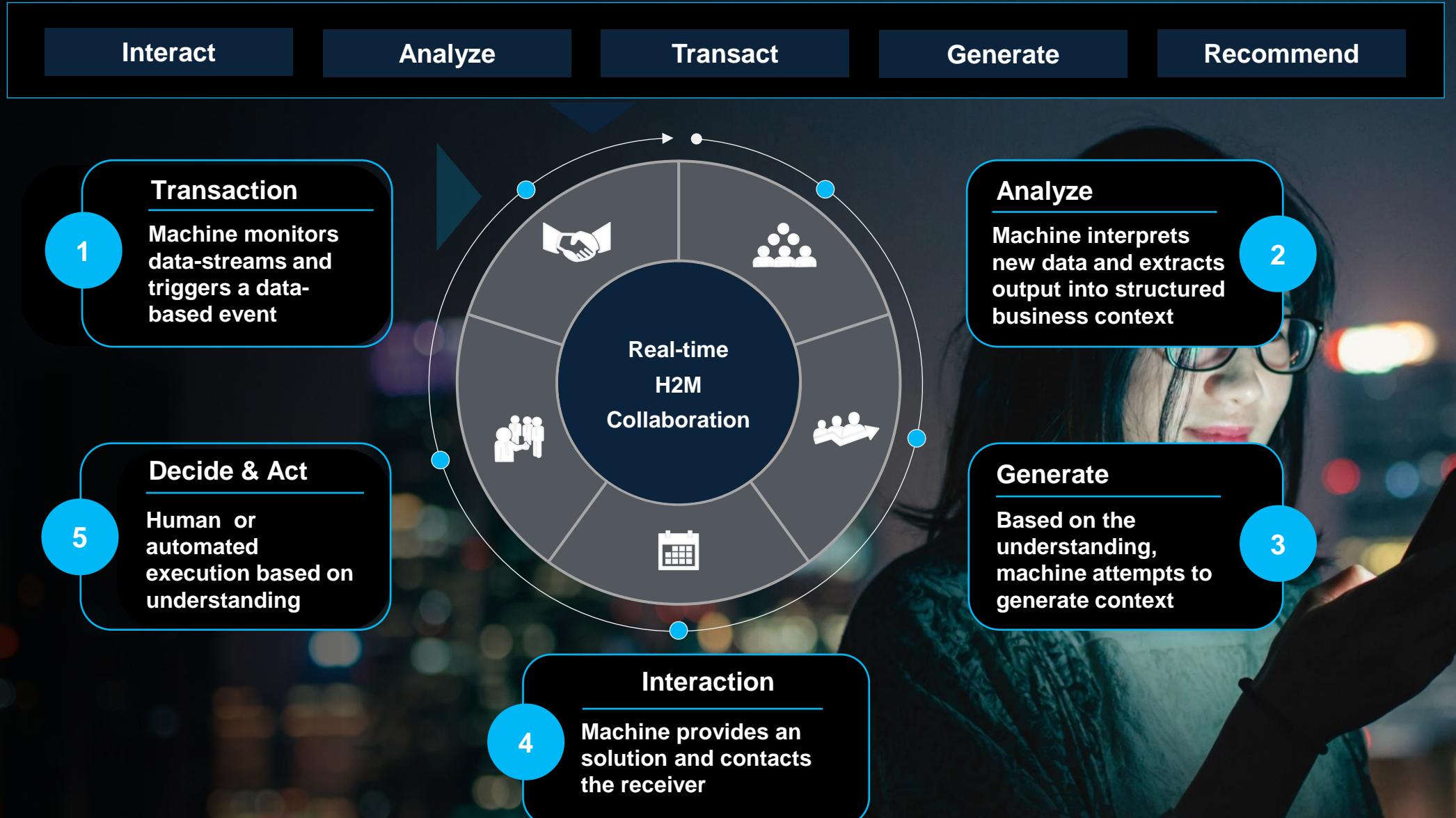
Autonomous Action

Autonomous operations executed by equipment and connected devices

Autonomous

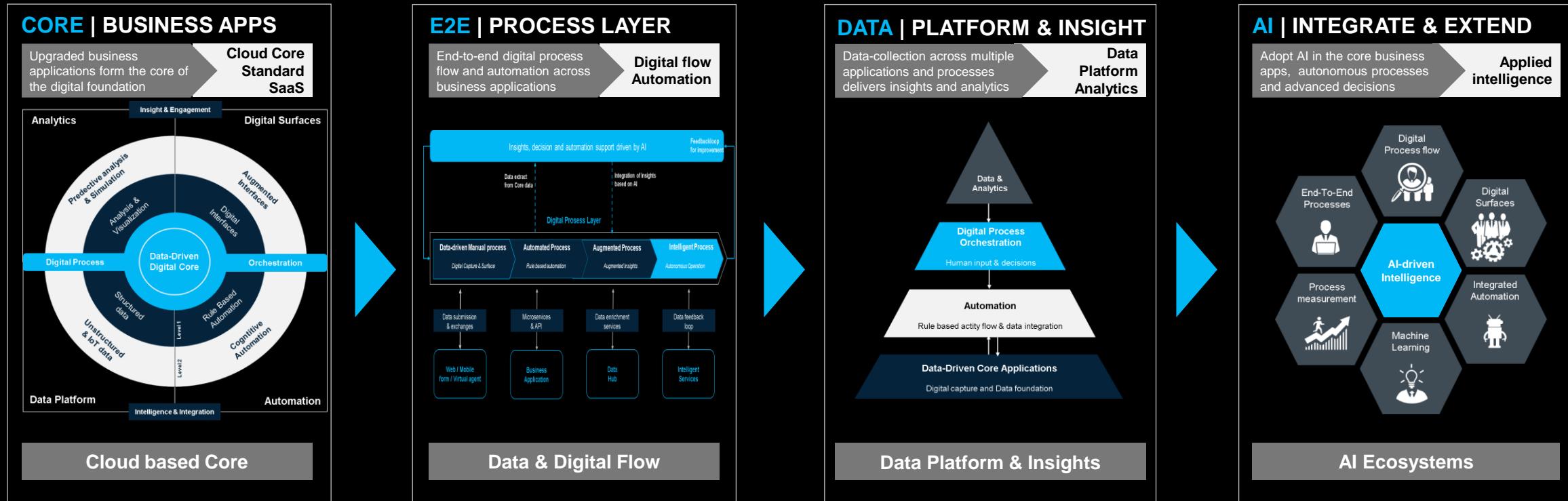


Intelligent Processes | We have to start using Humans where it matters the most



Applied AI in the Foundation | Business Apps | Process Flows | Decision Analytics

AI can be embedded across the modern foundation to deliver intelligent solutions



Cloud Apps

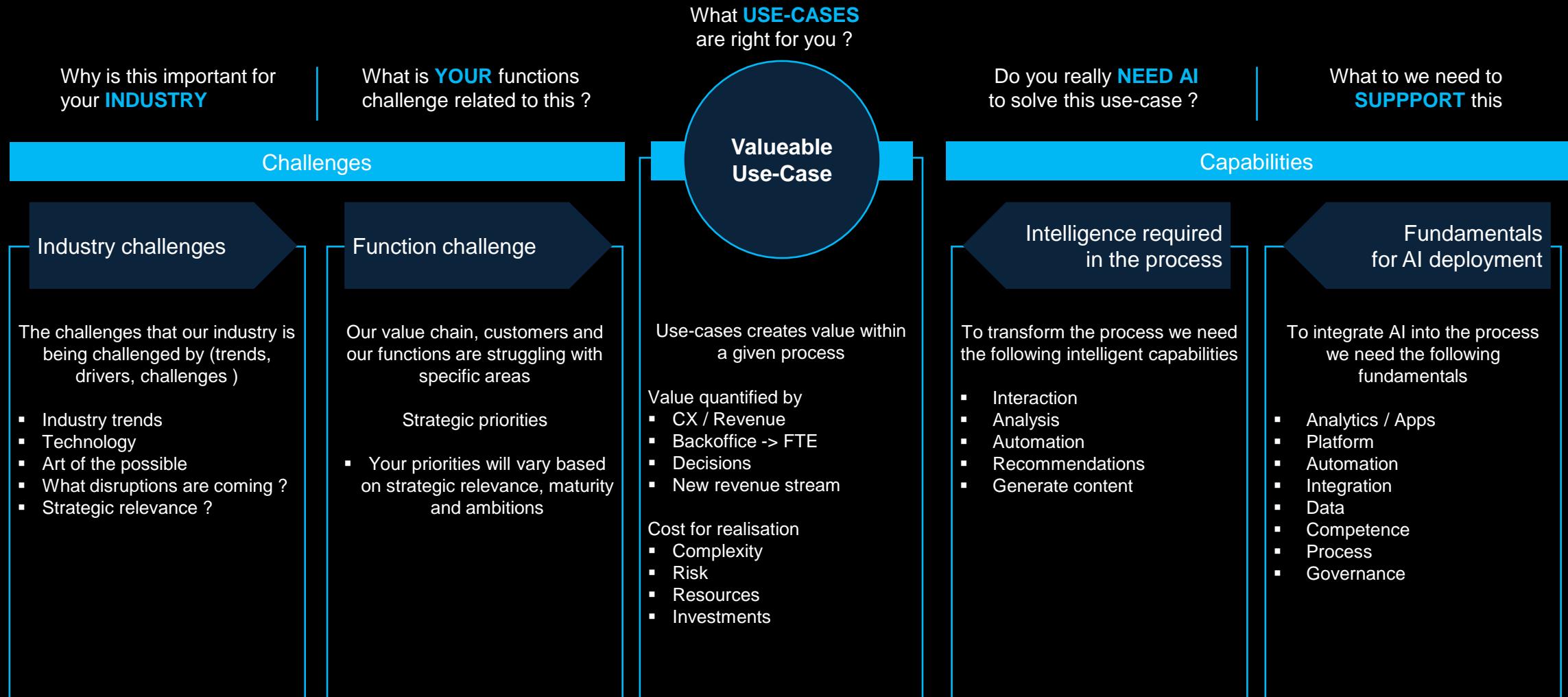
Low-Code

Automation

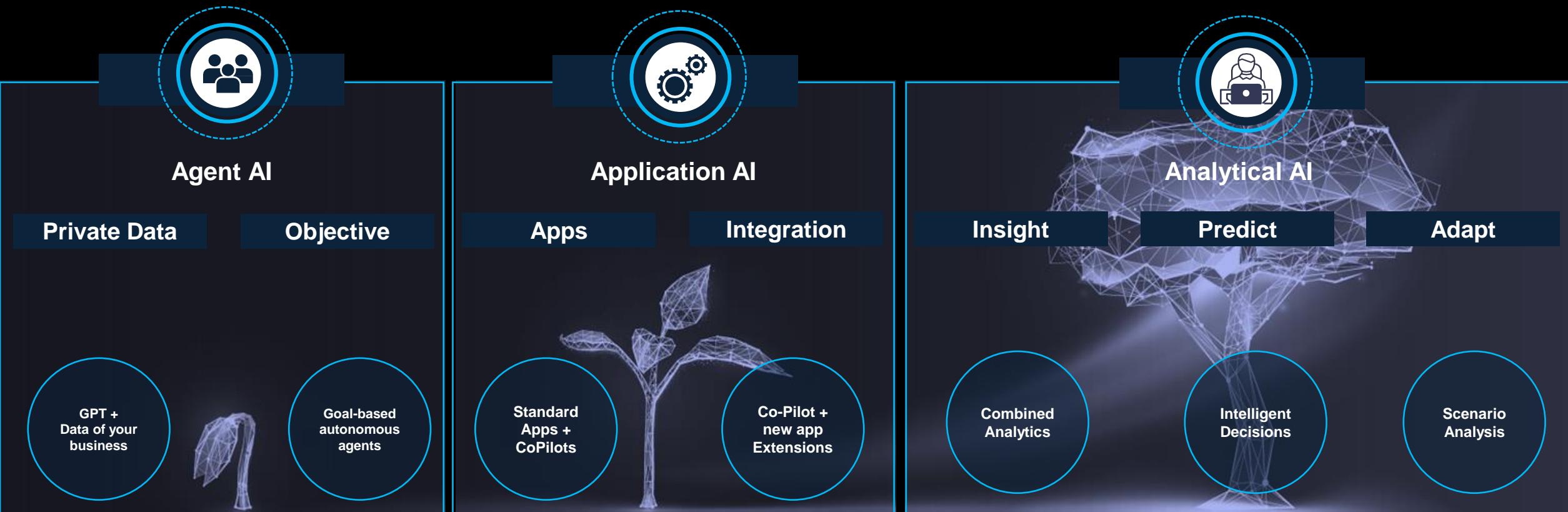
Analytics

AI

Strategic Focus | To be successful you need to solve the "AI" equation for your company - you need balance your strategic priorities, maturity and ambition



Scaling | AI is embedded on multiple layers with more data, applications, integration and intelligence into the solution – which extends use-cases, value and complexity



*AI helps you based on
your own data &
business context*

*AI helps you based
on solving goals
and objectives*

*AI can work within
your standard
applications*

*AI can integrate with
other applications in
your business*

*AI augments you with
new insights of what
happened*

*AI can predict what's
likely to happen –
based on history*

*AI can help optimize
and simulate, for
disruptive changes*

Enterprise wide

Function / Role specific

Use-case specific

KPMG Technology

Emerging Technology | AI | Automation | Data & Analytics

Use-Case | Overview

Tom Einar Nyberg, KPMG

Use-Cases | Sample use-cases across multiple capabilities

Data

You can use the MATCH function in Microsoft Excel to check if a name in Col A is in the list in Col B.

Here's an example formula:

```
=IF(ISNUMBER(MATCH(A1,B:B,0)), "Found", "Not Found")
```

In this formula, "A1" is the cell that contains the name you want to check and "B:B" is the range of cells that contains the list of names.

The MATCH function searches for the value in "A1" in the range "B:B" and returns the position of the value in the range. If the value is not found, the function returns the #N/A error.

The ISNUMBER function checks if the result of the MATCH function is a number, which indicates that the value was found in the range. If the result is a number, the formula returns "Found". If the result is the #N/A error, the formula returns "Not Found".

Send a message:

Apps

Click to add title
Click to add subtitle

Analyze

Box Plot
To identify excessive (outliers) working hours spent for each claim.

Not Paid
Outlier

Component: CABLE (76911)
Product Division: TRUCK
Product Line: Medium and Heavy Trucks
Causal Part: SET OF WIRINGS (5802555019), FR

Network Analysis
To identify unusual repaired and substituted parts

Causal Part INJECTOR CABLE
Claim 202000270796

Part Numbers

Insight

Financial & Tax summary

Number of Employees: 1.5K

Tax Payments: Income Tax, Payroll Tax, Other Taxes

Key Financials: Total Assets, Revenue from operations, Profit before tax, Income Tax Accrued

Predict

Incident alerts

Shortage of Sodium Saccharin

Adapt

Map view

SUPPLY CHAIN HEALTH, PERFECT ORDER RATE, PRODUCT RISK RATING, CURRENT STATUS, FORECAST EVENTS, CURRENT WEATHER

Data analysis | Processing and capturing unstructured data to create insight

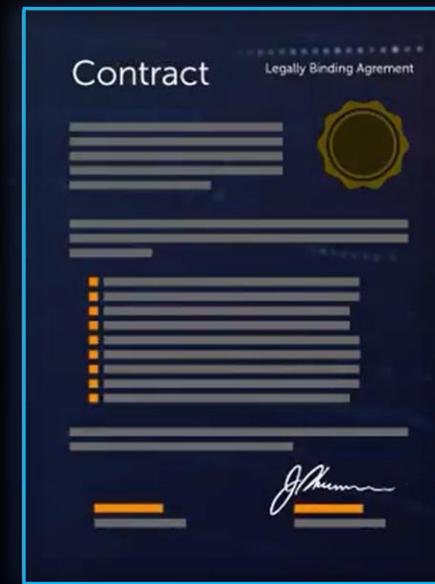
Invoice



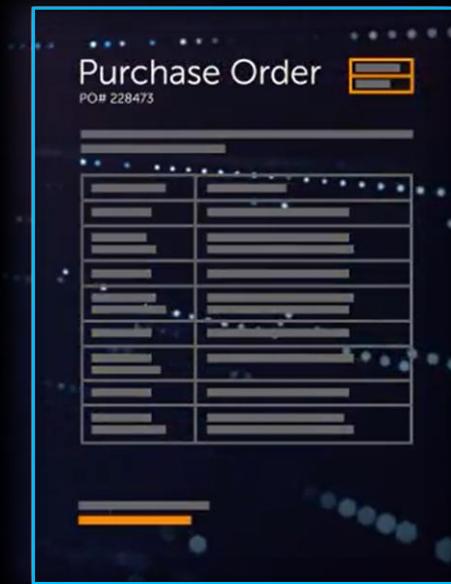
Application



Contract

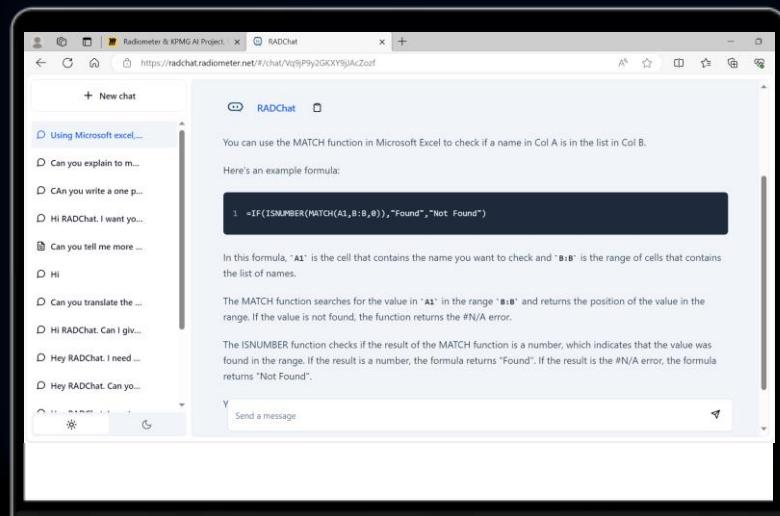


Purchase Order



Private Generative AI | Utilizing your business data with Supplier analysis

"GPT for Supplier analysis"



1. Front-End



Custom front-end with familiar design that enables users to interact with the Azure GPT services and iterate on the supplier analysis. Possible to integrate with other systems.

2. Prompt layer



Specialized fine-tuning and automatic prompt-engineering for setting up a first draft, generating appropriate responses and validating correct output.

3. Back-End



Azure-based back-end that hosts several Azure Services, such as Azure AI, Cognitive Search, Document Intelligence, etc. This includes "vectorizing" documents. In principle any GenAI service may be used if market or performance changes significantly.

CoPilots | Change how your work within in your standard apps

Business Chat

The screenshot shows a Microsoft Teams chat window. A Copilot card is open, providing a summary of recent interactions with Mona and suggesting ways to prepare for a meeting. It also includes links to articles on supply chain management.

Outlook

The screenshot shows the Microsoft Outlook inbox. A Copilot card is displayed, summarizing recent emails from colleagues like Maja, Shireen, and Jessie, and suggesting actions such as "Catch up with Copilot" or "Shift with Copilot".

Teams

The screenshot shows a Microsoft Teams video conference with four participants. A Copilot card is visible, suggesting ways to engage with the team members during the call.

Word

The screenshot shows a Microsoft Word document. A Copilot card is open, asking for a job description and providing options like "Create content with Copilot", "A press release for...", or "A project proposal about...".

Excel

The screenshot shows a Microsoft Excel spreadsheet with data on product sales across various countries. A Copilot card is open, suggesting actions like "Edit with Copilot" or "Share with Copilot".

PowerPoint

The screenshot shows a Microsoft PowerPoint slide with a title and subtitle placeholder boxes. A Copilot card is open, suggesting "Click to add title" and "Click to add subtitle".

Combined analytics | Reporting & Analytics - Combining Data, AI & Humans

Output Analytics combining data

Financial & tax summary

In Canada, there is significant business operations in Manufacturing or production (Reasoning: [Activity %] = 70%), Purchasing or procurement (Reasoning: [Activity %] = 20%) and Research and development (Reasoning: [Activity %] = 10%). Revenues for our Canadian operations are derived from both sales to customers and to subsidiaries of our company (Reasoning: [related party revenue] relatively small compare to [Revenue]). Our Canadian operations are subject to statutory income tax rate of 26.5% (Reasoning: [Statutory Tax Rate]).

North America

Rest of World

Number of Employees

1.55K

Key Financials

Revenues from third parties	Revenues from related parties	Profit (loss) before tax	Tangible Assets	Income Tax Accrued
\$16.06bn	\$2.58bn	(\$3.62bn)	\$2.28bn	\$20.4M

Tax Payments

- Excise Tax: 95.00
- Indirect Tax: -30.00
- Payroll Tax: 0.00
- Tariffs / Duties: 0.00
- Other Taxes: 145.00

Automated real-time refresh of the analytics

Data & Analytics Reports

This section displays various data analysis reports, including:

- Country Analysis: Shows Revenue (\$4.305.1M), Income Tax Accrued (\$1.070.4M), and Tangible Assets (\$142.5M).
- Total Tax Impact: Shows a total of \$774.4M.
- Income Tax Paid: Shows a total of \$292.9M.
- Other Tax Collected: Shows a total of \$481.6M.
- Income Tax Paid Rate: 23.6%.
- Other Tax Collected Rate: 11.7%.
- Income Tax Paid by Type: Breakdown by Barriers Collected.
- Income Tax Paid by Segment: Breakdown by Segment.
- Income Tax Paid by Country: Breakdown by Country.

Fraud & Investigations | Utilizing data to transform processes

Waranty claims

AUTOMATED COGNITIVE CONTRACT MANAGEMENT (CCM) WORKFLOW

Suspicious behavior

ATTENTION POINT

Year	Total Amount Paid (M€)	Paid Outliers (k€)
2019	5.7M€	1.2 M€
2020	6.8M€	225 k€, 1.54 M€
2021	7.1M€	256 k€, 1.53 M€

Claims Table

	Total	Outliers	(%) outlier/to
Amount Paid FR	12.4 M€	3.07 M€	24.8%
Amount Paid MAT	6.2 M€	1.20 M€	19.5%
Tot Amount Paid	18.6 M€	4.27 M€	23.0%

Data classification

Box Plot

To identify excessive (outliers) working hours spent for each claim.

Network Analysis

Causal Part: CABLE (76911)
Product Division: TRUCK
Product Line: Medium and Heavy Trucks
Causal Part: SET OF WIRINGS (6802555019), FR

Deviations

Excessive working hours weights corresponds to the highest paid amount

Unusual repaired part weights for a third of the value, the **repetitive combination of repaired parts plus excessive working hours** represents a criteria for claim auditing

Claims Table

	Total	Outliers	(%) outlier/total
Amount Paid FR			24.8%
Amount Paid MAT	Replaced		19.5%
Tot Amount Paid			23.0%

Investigations

5-digit Component	Product Division	Product Line	Distributor	Country	Outliers Amount (k€)	Amount Paid (k€)	Outliers Amount (%)	Outliers MAT (k€)	Outliers FR (k€)
76911	TRUCK	Medium and Heavy Trucks	VIC SA (12329)	France	49 k€	80 k€	62%	21 k€	46.9 k€
76914	TRUCK	Medium and Heavy Trucks	HARRIS TRUCK & VAN LTD (8884)	United Kingdom	39 k€	40 k€	98%	36 k€	3 k€
76911	BUS	BUS-CITYBUS	SPL SECUR (38888)	France	37 k€	129 k€	29%	17 k€	35.3 k€
76911	TRUCK	Medium and Heavy Trucks	CARTWRIGHT FLEET SERVICES (34843)	United Kingdom	34 k€	113 k€	30%	14 k€	32.6 k€
76911	TRUCK	Medium and Heavy Trucks	WALTON SUMMIT TRUCK CENTRE LIMITED (8888)	United Kingdom	33 k€	84 k€	40%	6 k€	27 k€
76911	TRUCK	Light Commercial Vehicles	IVECO RETAIL (81109)	United Kingdom	31 k€	45 k€	70%	23 k€	28.7 k€

Process transformation

SOLUTION ENGINEERING

- Engineering outlier identification for Economy
- Creation of Economy hour range reports
- Engineering of part-number unusual substitution

AI DATA PROCESS

INTERACTIVE DASHBOARD

- Creation of an interactive dashboard to explore anomalous behaviors
- Allow the user to define specific filter to pinpoint audit actions

NEW AUTOMATISM

- Identify automatic rules to put requests on hold and require extra information
- Develop a Natural Language Processing algorithm to reject non-meaningful comments

PROCESS SIMPLIFICATION

- Leverage the potential of computer vision models to determine the correct payment based on failure.

Contract Intelligence | Data-driven processing of contracts

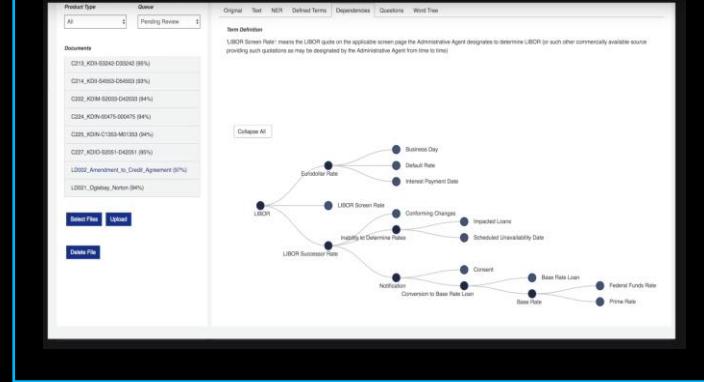
Ingestion of documents

This screenshot shows the 'Ingestion' tab of the Contract Transition Toolkit. It lists various documents and allows users to upload new ones. A preview of an 'Amendment No. 1 to Credit Agreement' by Adarco Inc. is shown, with options to 'Select File' or 'Upload'.

Detected entities & terms

This screenshot shows the 'Detected Terms' tab of the Contract Transition Toolkit. It displays a list of documents and a detailed legend for entity detection, including tags like 'adjective', 'adverb', 'auxiliary', 'complement', 'determiner', 'interjection', 'noun', 'numeral', 'particle', and 'pronoun'.

Entity relationship



Term amendments

This screenshot shows the 'Term Amendments' tab of the Contract Transition Toolkit. It displays a comparison of two versions of a document, highlighting changes in red and blue, with annotations for specific terms like 'Interest Rate' and 'Interest Rate A'.

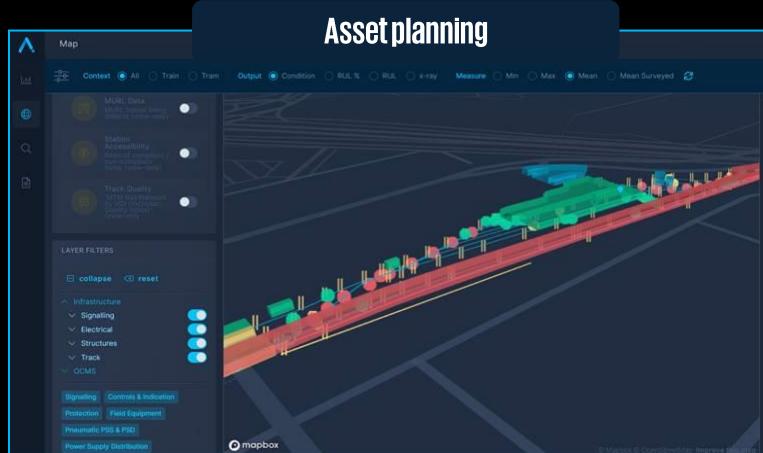
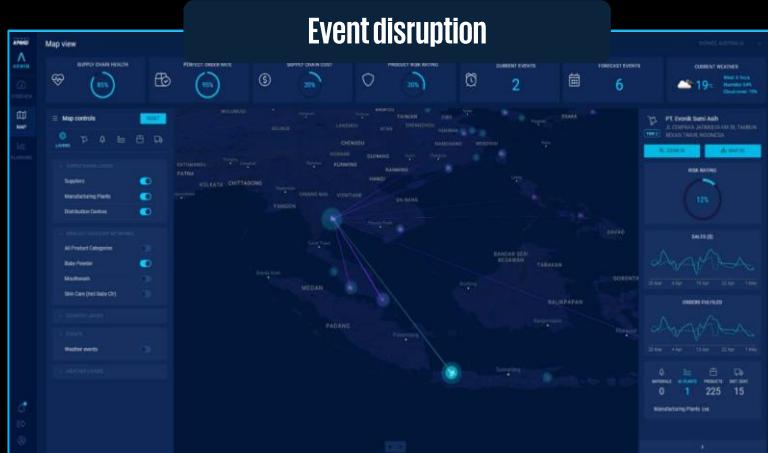
Workflow & Approvals

This screenshot shows the 'Workflow & Approvals' tab of the Contract Transition Toolkit. It displays a summary of contract information, contract amounts, and impacted contractual clauses.

Management Statistics



Scenario Analysis | Optimize and plan for better handling of disruption



KPMG Technology

Emerging Technology | AI | Automation | Data & Analytics

Artificial Intelligence | Adoption Challenges

Key learnings | To get real value from adoption you need to avoid typical pitfalls

Missing overall strategy for deployment

**Functional priorities
& focus in the
deployment**

**Data quality,
governance &
risk controls**

**Timeframe to
production
& ROI**

**Architecture &
ecosystems**

**Value-focus
vs “adoption”**

Expectations | Upskilling | Change | Adoption

Holistic view of different platforms and orchestration of GPT & AI technologies

Successful adoption depends on your approach to Responsible AI

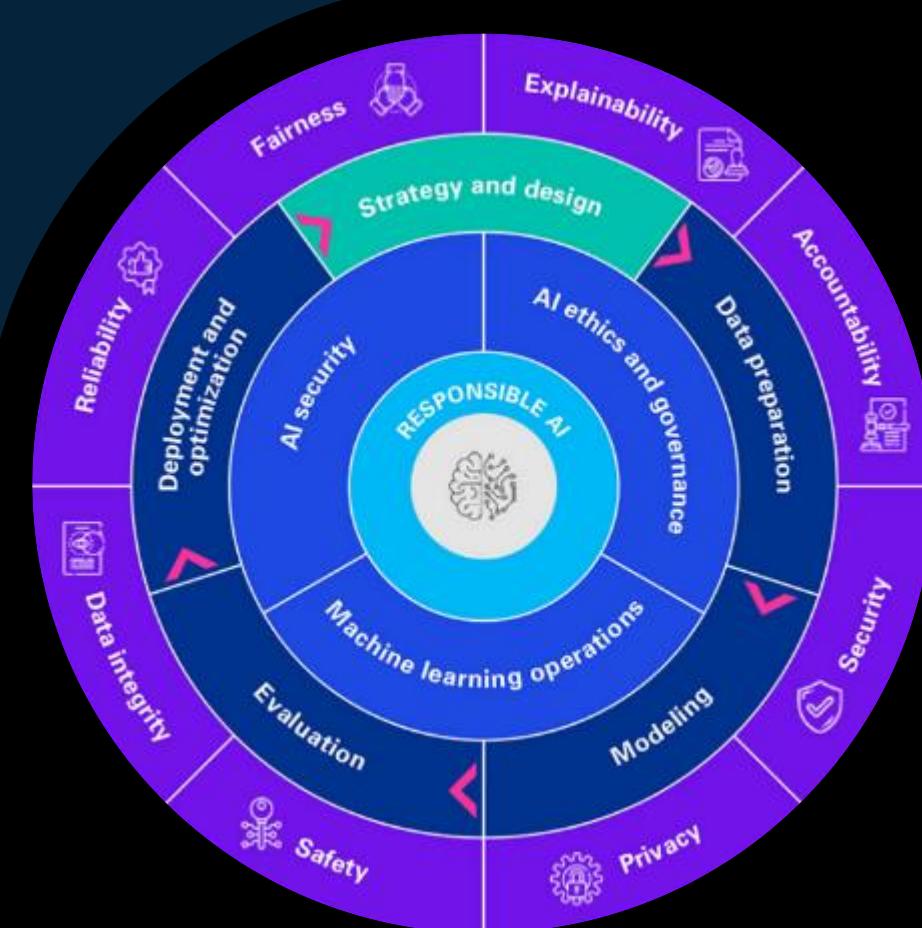


Responsible AI framework

Responsible AI involves a set of frameworks, controls, processes, and tools to guide AI systems being designed and deployed in a trustworthy and ethical manner so that companies can accelerate value.

Responsible AI is a complex business, regulatory, and technical challenge, and you must put responsible AI into practice.

- 01 → Fairness
Help enable models to be free from bias and remain equitable.
- 02 → Explainability
Help enable the understanding and documentation of AI algorithms.
- 03 → Accountability
Help establish mechanisms to drive ownership and responsibility across the AI/ML lifecycle.
- 04 → Security
Safeguard against unauthorized access, corruption, or attacks.
- 05 ← Privacy
Help drive compliance with data privacy regulations and consumer data.
- 06 ← Safety
Safeguard against a negative impact to humans, property, and environment.
- 07 ← Data integrity
Help embed trust with data quality, governance, and enrichment steps.
- 08 ← Reliability
Help enable the performance of AI systems at the desired level of precision and consistency.

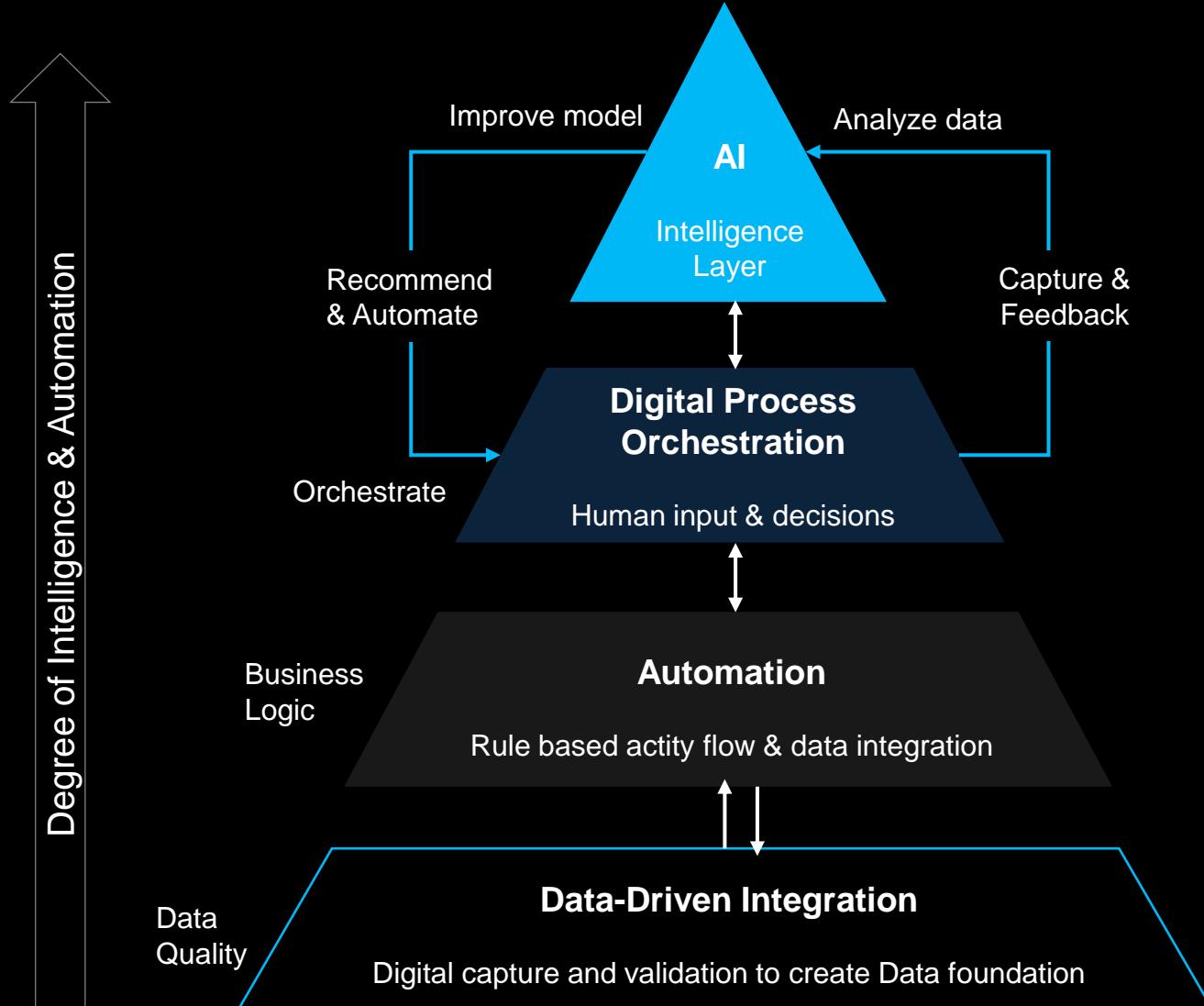


Buy, Build or Configure the Capability? Based on your choices you will have different strategic impact, speed and competence requirements

	Where	Applied	Impact	Competence	Speed
Integrated	Existing Products	Generic	Broad	Configure	Re-active
Service / Solution	Add-on Service	Narrow	Deep	Assisted	Proactive
Platform	Custom Capability	Core business	Strategic	Extensive	Focused

Capability needs to be built based on maturity and data foundation

You need to have the right fundamentals to increase Process Intelligence



Level 3: Intelligent Process Integration

- Intelligent processing based on unstructured data, human experience and data collection over time in order to improve both quality of recommendations (Insight) offered to humans, and the potential for automation

Level 2: Digital Process Platform

- Human input and decisions are executed in a «fit for purpose» Digital Process. This allow for both convenient manual execution, augmented support and an integrated feedback loop to improve future automation

Level 1: Rule Based Automation

- Eliminate simple and rule based manual work that has pre-determined rules, activities, and data collection requirements. Utilise modern micro-services, APIs or RPA to automate flow

Level 0: Digital Capture & Data foundation

- Ensure that your digital core applications contains high quality records. A necessary prerequisite for increasing maturity and increased digital capability. Utilize digital capture and constraint.

INTELLIGENCE

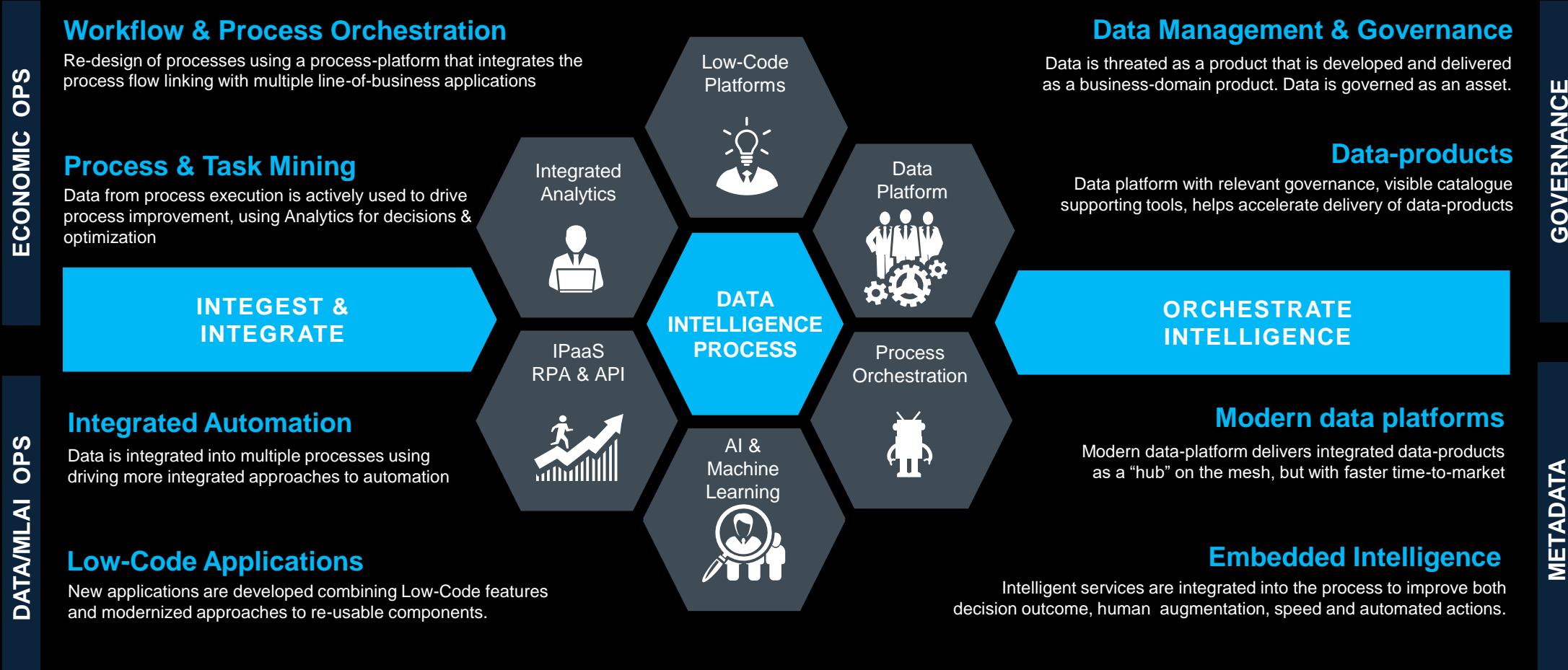
PROCESS

AUTOMATE

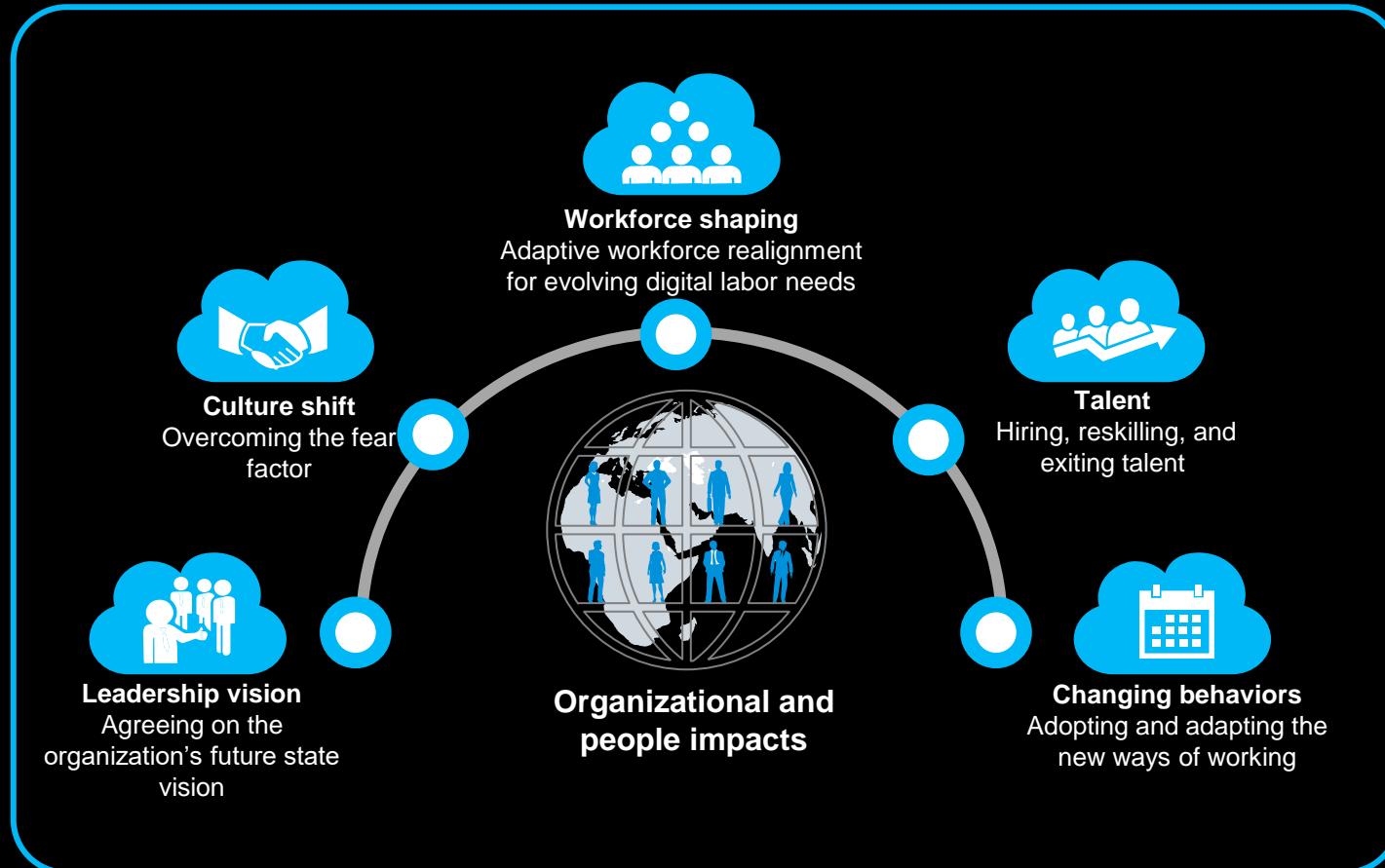
DATA

Your IT strategy must look at the Ecosystem around Data & Process

Data-as-a-Product | Domain Driven Design | Governance | Data-Platforms



Our skillset must change along with our ways of working



Are you achieving your 20%?

Experimentation before perfection

The rate of change is high, and we need to adopt alongside with it, experimenting in parallel

What skills will we need

Changing the way we work in a much larger scale, we will need “broader” adoption skills to achieve benefits

Cultural change

Implementations will be iterative and constantly evolving to develop optimal workforce productivity and ROI

Transformation | Embed intelligence into platforms, processes and applications

PROCESS TRANSFOMATION

DECISIONS

Analytics Cognitive Support



Smarter and better decisions supported by advanced algorithms

EXPERIENCE

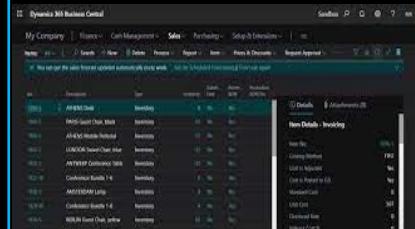
Applications Data-Driven Experiences



Proactive and deeply personal user experiences in data-driven applications

AUTONOMOUS

Automation Intelligent & Autonomous



Autonomous and robust automations that handle multiple types of data

SPEED

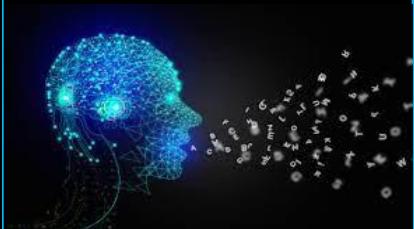
Accelerated Plattform Development



Faster development and advanced functionality with built-in features

EFFECIENCY

Assistants Agent Augmentation

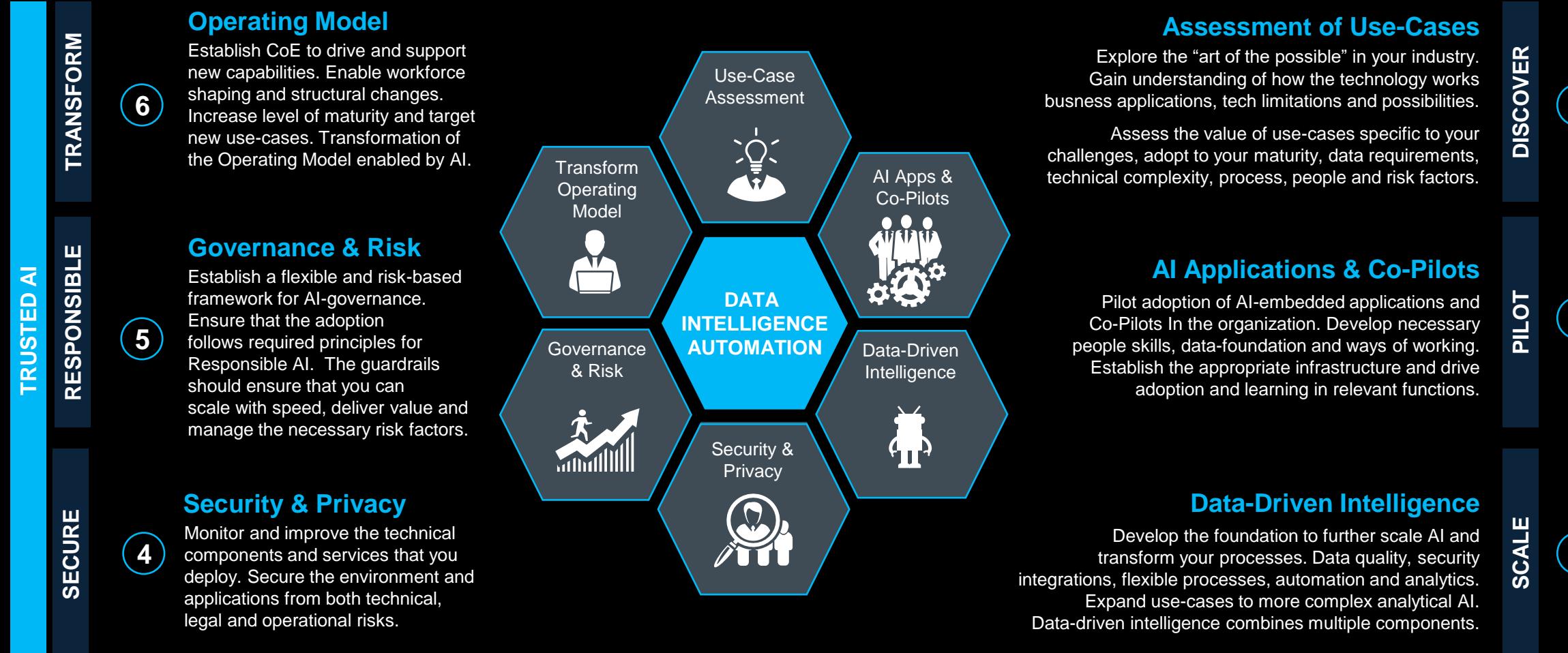


Knowledge support, intelligent execution and augmented actions

EMBEDDED AI IN THE OPERATIONG MODEL

AI Readiness | Develop AI capabilities holistically while balancing risk & value

Data Platform | Integration | Automation | Analytics | Intelligence



Data-Products | Orchestrated | Collaborate | Data Driven