interfacing.

Artificial Intelligence

for Quality, Compliance & Digital Transformation

SCOTT ARMSTRONG

CEO

Connect on LinkedIn

https://www.linkedin.com/in/**solution**

Multi-Category Leaders

Industry Leader
25+ years Experience
Analyst Recognized

Scalable
1M+ Users
46 countries

Supported
Global Offices
(24 x 7 Support)

Secure
ISO 27001 Certified
& GDPR Compliant

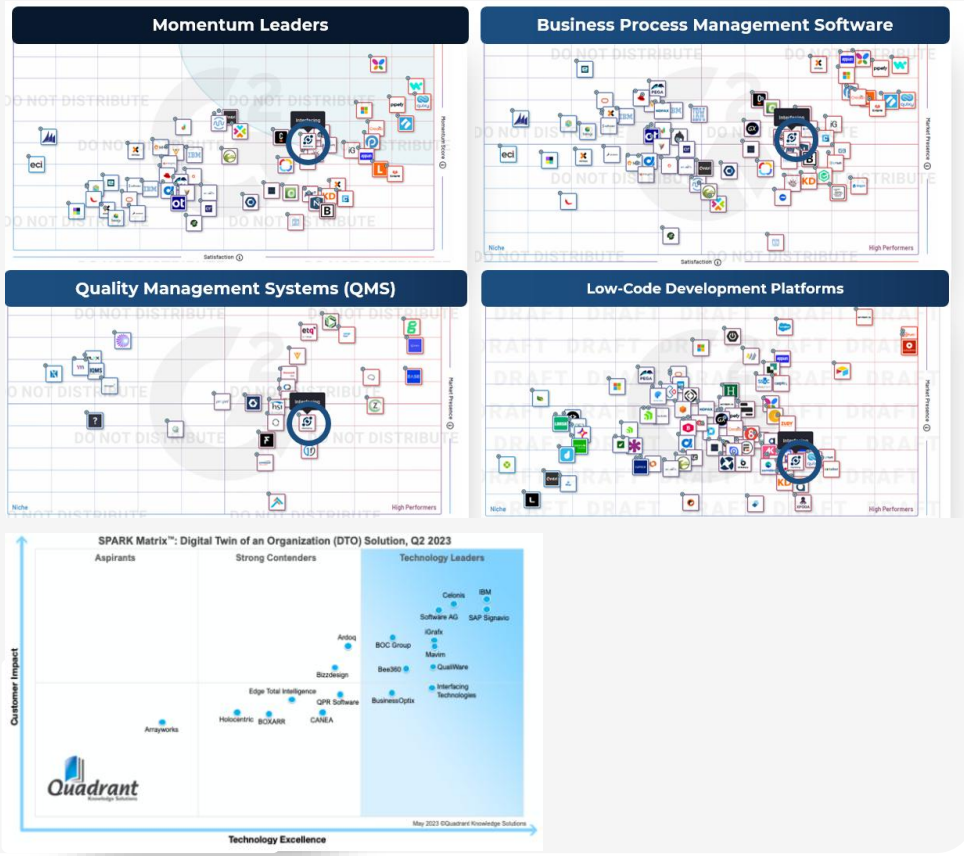
Validated
Computer System
Validated (CSV)

Gartner®

Digital Twin

Enterprise Business Process Analysis
Operational Intelligence
Business Operating Systems

Quadrant Knowledge Solutions



AI PUBLIC SECTOR KEY STATISTICS

01 **70%** of governments worldwide have launched or are developing national AI strategies. (*OECD*)

02 **56% of public sector organizations** in the **U.S.** reported already piloting or deploying AI solutions. *(Deloitte Center for Government Insights)*

03 The **U.S.** federal government planned **$1.7 billion in AI R&D investments in 2024**, with a strong focus on defense, cybersecurity, and health. *(White House R&D Budget 2024)*

04 **Canada**, as of 2023, invested **$443.8 million** in its Pan-Canadian AI Strategy to support responsible AI in public services.

Highlights & Concerns

Challenges & Concerns

43% of public sector executives say **lack of AI talent** is the biggest barrier to adoption.
(PwC Global Digital Government Survey)

60%+ of citizens expressed **concern about transparency and accountability** in government AI use.
(Ipsos MORI / World Economic Forum)

Only 22% of public sector AI projects reach full-scale deployment.
(McKinsey 2023 AI Public Sector report)

48% of public sector organizations cite data **security and privacy** as their top concern when adopting generative AI technologies.

Geographic Highlights

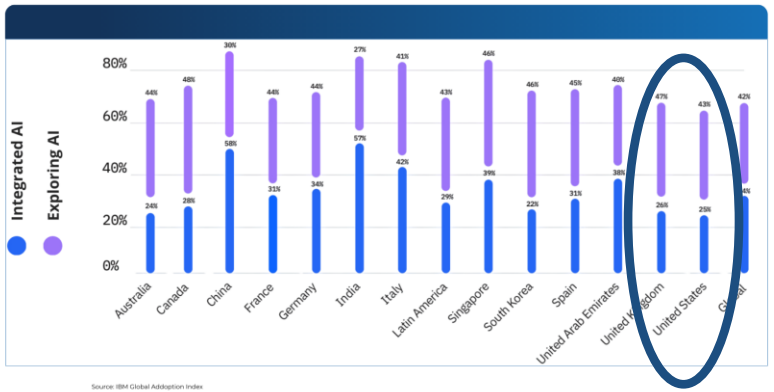
Singapore leads globally in deploying AI for smart city infrastructure, real-time transport optimization, and public health.

Estonia has deployed over **80 AI applications** in government since launching its AI strategy, including automated decision-making for unemployment benefits and court scheduling.

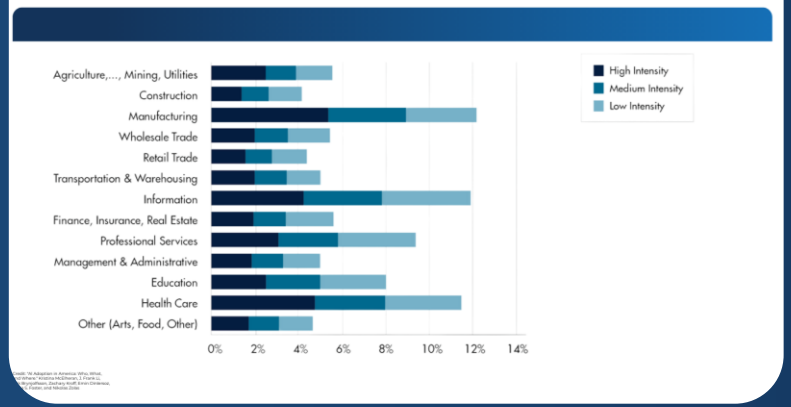
UAE announces **FREE ChatGPT** Plus Access for all citizens!

AI IMPORTANT STATISTICS

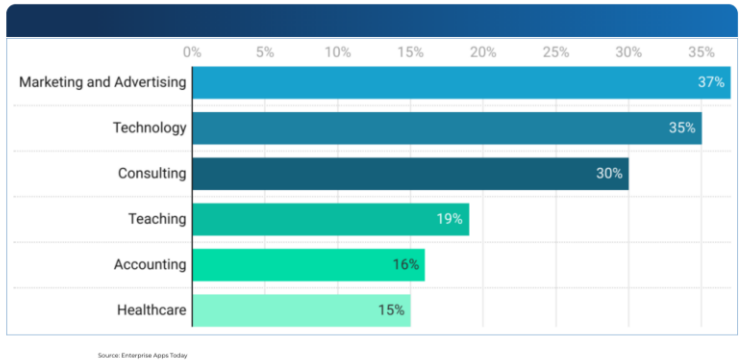
AI Adoption rates around the world



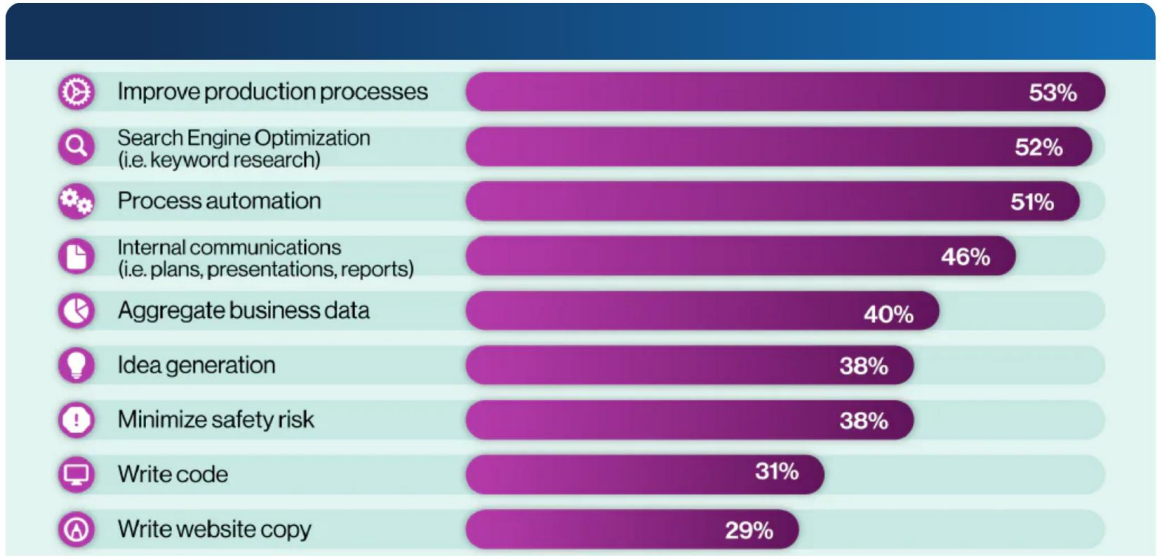
AI Use Intensity and Testing Rates by Sector



Adoption rate of genrative AI adoption in the workplace in the United States 2023, by industry

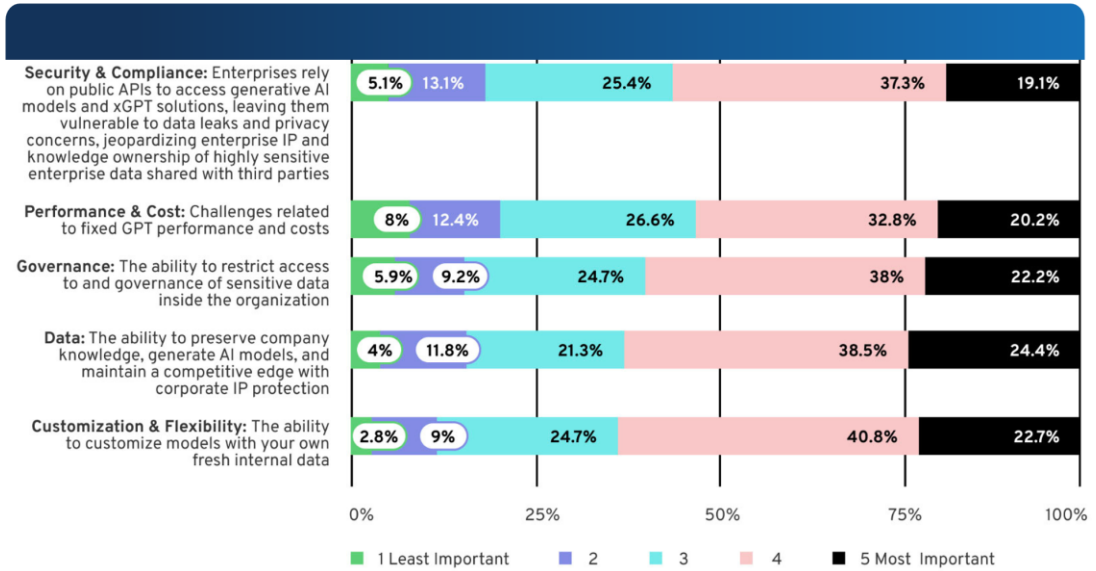


Percentage of business owners who are using AI in this way



Source: Forbes

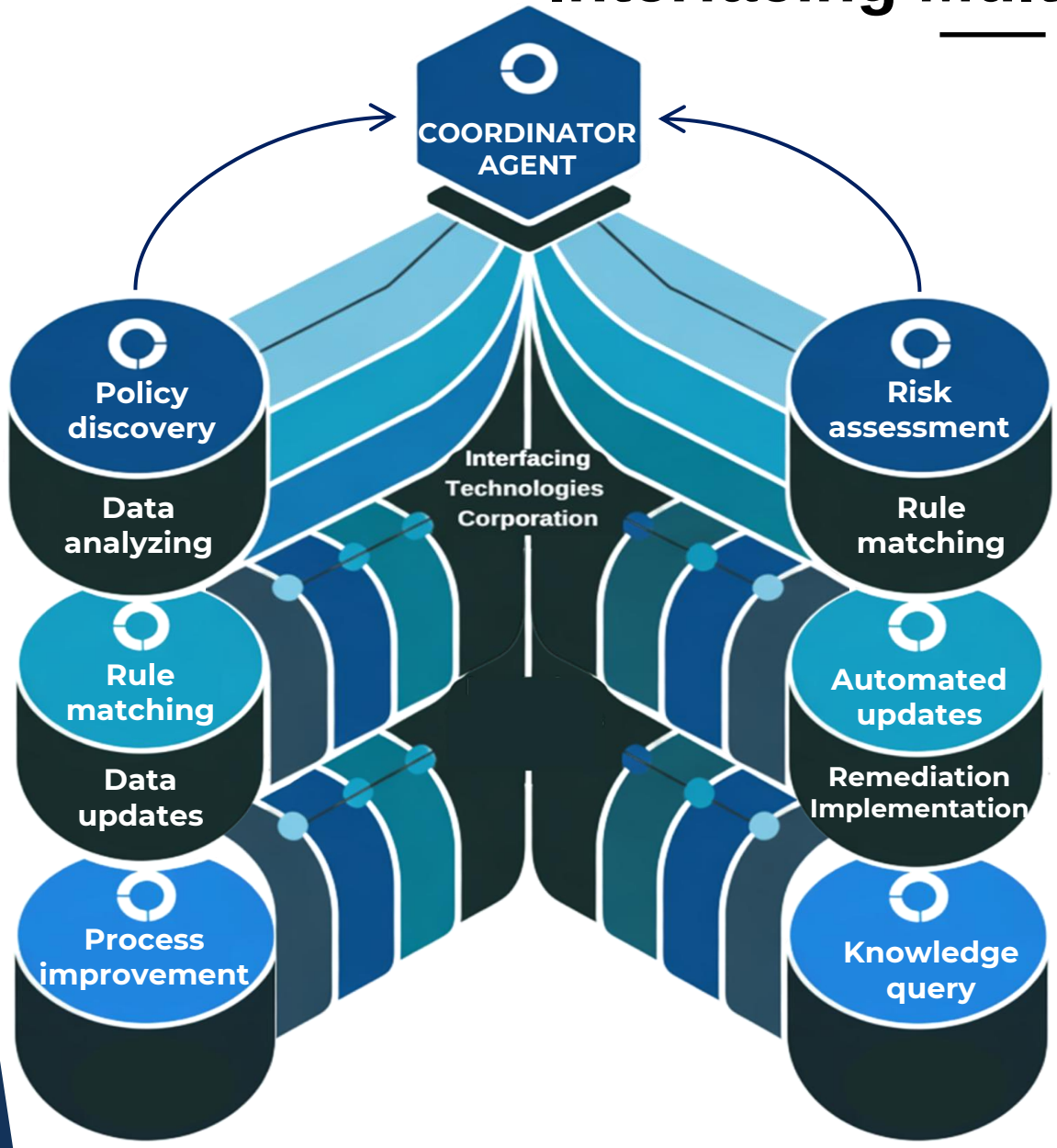
Key challenges/blockers in adopting generative AI/LLMs/xGPT



AI Evolution

	Primary Function	Learning Approach	Autonomy Level	Key Limitations
Traditional AI	**Pattern recognition**, prediction, classification	Supervised learning from labeled data	Low – relies on predefined logic and rules	Rigid, narrow scope, lacks adaptability
Generative AI	**Content generation** (text, images, code, etc.)	Trained on massive unstructured datasets using deep learning (e.g., transformers)	Moderate – generates content from prompts	Can hallucinate, lacks true understanding
AI Agents	**Execute structured tasks** based on logic or goal	Rule-based logic or integration with LLMs for guided reasoning	High – can perform multi-step tasks independently	Limited contextual understanding
Agentic AI	**Autonomously pursue goals**, plan, and adapt	Combines LLMs with planning, memory, reasoning, and reinforcement feedback	Very High – proactive, self-correcting, adaptive over time	Potential for unpredictable behavior

Interfacing Multi-Agentic AI



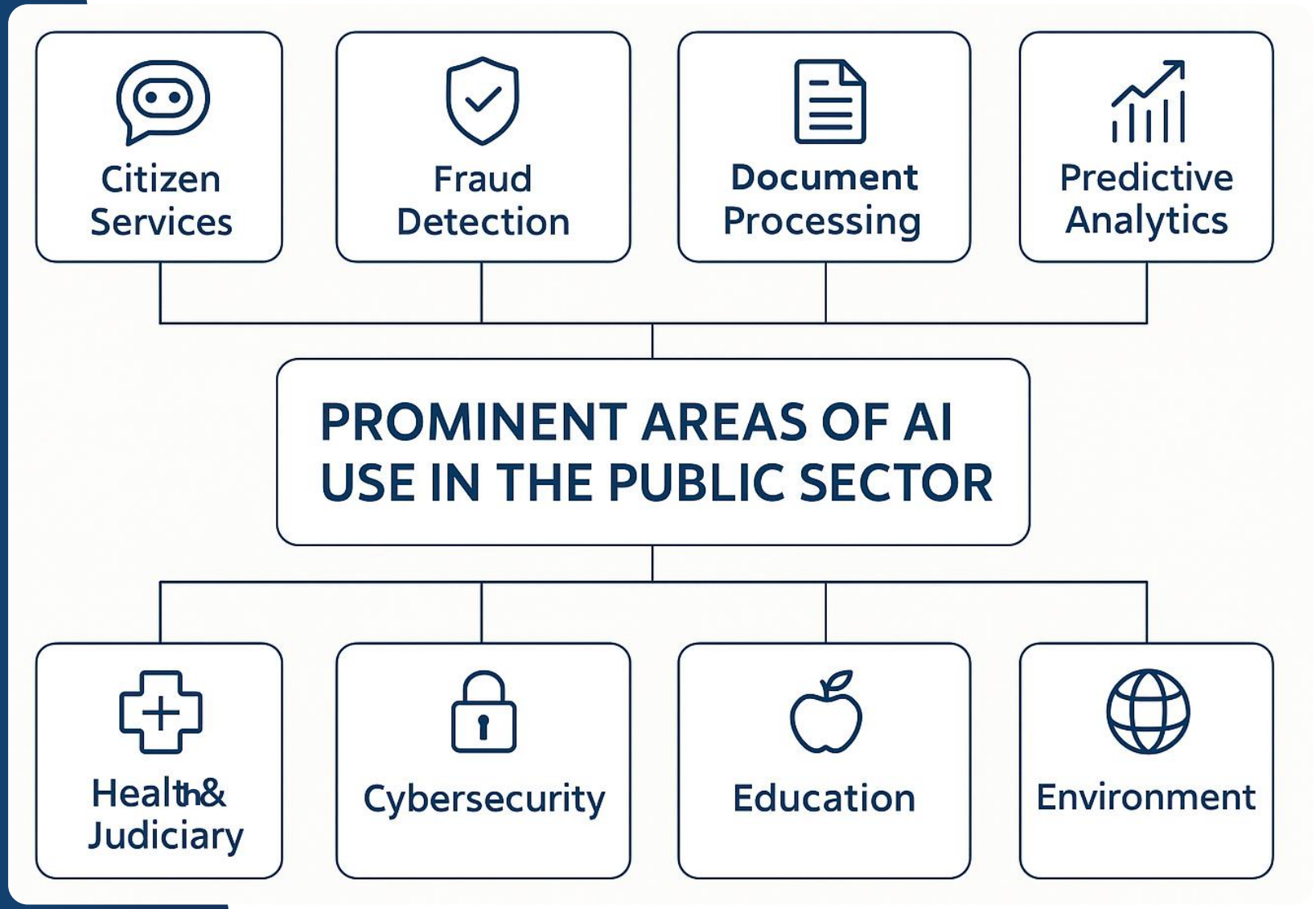
Agents

- Process Improvement Agent
- Process Automation Agent
- Process mining Agent
- Predictive Simulation Agent
- Compliance Agent
- Quality Agent
- Training Agent
- Audit Agent
- Task analysis & execution agents

Tech

CHALLENGES	SOLUTIONS
Lack of Context Standardization for LLMs	**MCP** Standardizes context delivery to LLMs
Communication Barriers Between Heterogeneous Agents	**ACP** Provides a RESTful, SDK-optional interface
Absence of Unified Agent Collaboration Standards	**A2A** Introduces a multimodal communication standard
Internet-Agnostic Agent Communication	**ANP** Facilitates internet-based agent collaboration

AI Key Use Cases



AI Key Public Sector Key Use Cases

Category	Sample Use Cases	How AI Can Help	Examples
Citizen Services	Chatbots, help desks, appointment booking	Automate repetitive queries, guide users, reduce call center load	**Virtual assistants** (CRA, HMRC), chatbot portals
Fraud Detection	Tax, welfare, procurement audits	Detect anomalies, flag suspicious claims in real-time	AI tax **audit** targeting (IRS), benefit fraud detection
Document Processing	Legal forms, immigration, licensing	Extract key data, classify documents, accelerate approvals	**OCR** for immigration forms, NLP-based license processing
Predictive Analytics	Fire, police, hospitals, urban planning	Forecast demand, optimize staffing, pre-position resources	**Predictive** fire risk maps, hospital surge planning
Health & Judiciary	Case management, judgment suggestions	Sort legal cases, assist with diagnosis, automate scheduling	Estonia's AI **judge** pilot, AI for **X-ray** triage in hospitals
Cybersecurity	Threat detection, anomaly monitoring	Identify patterns of attack, flag suspicious access, prioritize responses	National AI **security ops** centers, phishing detection bots
Education	Personalized learning, intervention tools	Adapt content to student pace, identify at-risk learners	AI **tutors**, learning analytics dashboards
Environment	Climate analysis, pollution monitoring	Analyze satellite/environmental data, model emissions or risks	AI for deforestation **detection**, smart air quality systems

Quality Objectives

Area	Objective	How AI Helps
Regulatory Adherence	Ensure alignment with legal and industry-specific regulations (e.g., ISO, FDA, GDPR).	AI can **parse regulations**, **map controls**, and **monitor changes** and automate complex rule interpretation.
Process Standardization	Establish repeatable, auditable, and efficient workflows.	AI **detects process variations,** recommends **best practices**, and automates SOP updates.
Continuous Improvement	Drive organizational growth through ongoing analysis and refinement of processes.	AI provides **real-time insights** from operational data and identifies areas for **optimization**.
Risk Mitigation	Identify and proactively address risks that could affect product, service, or operations.	AI **predicts risks** using historical trends and triggers alerts for early intervention.
Documentation Control	Maintain accurate, accessible, and updated records for audits and accountability.	AI **auto-classifies**, indexes, and version-controls documents while ensuring **audit readiness.**
Employee Accountability	Promote awareness and ownership of compliance and quality at all organizational levels.	AI agents provide **contextual policy & process guidance** and **training** reminders based on employee actions.
Customer Satisfaction	Deliver consistent and high-quality outputs that meet or exceed expectations.	AI **detects quality trends**, feedback patterns, and flags potential issues before they escalate.

Quality Challenges

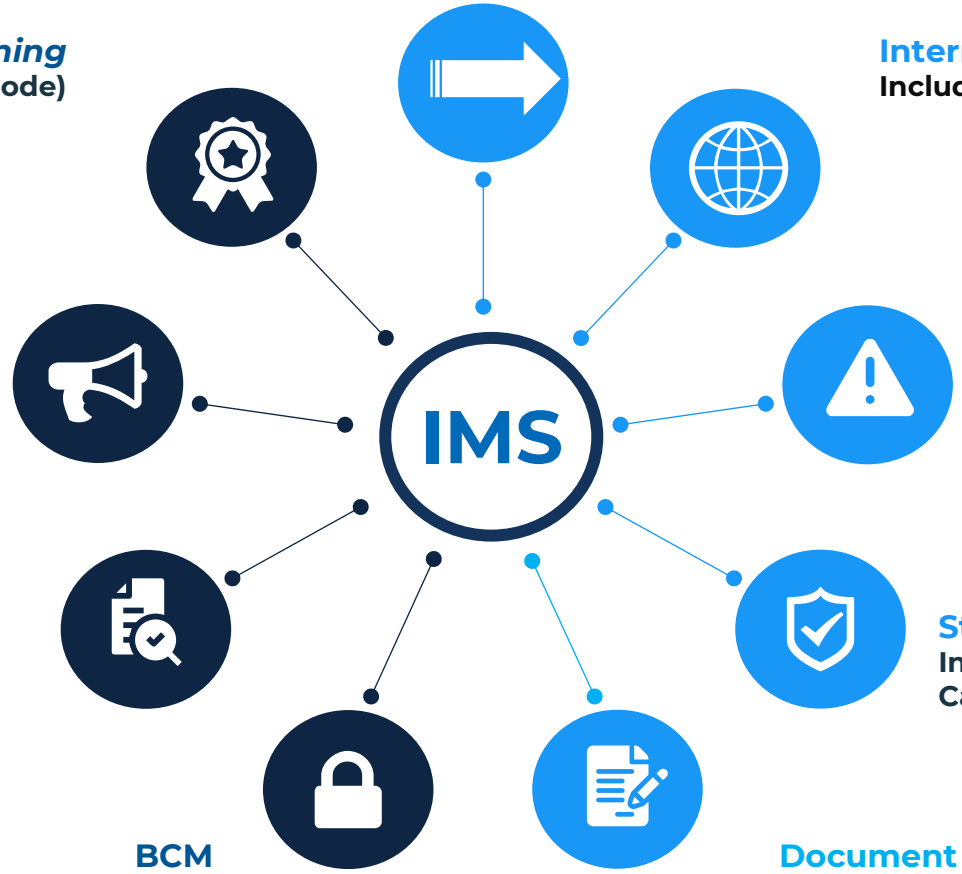
Challenge	Description	How AI Helps
Regulatory Complexity	Navigating overlapping and constantly evolving standards across regions.	AI can **auto-parse regulations**, **compare frameworks**, and **flag compliance gaps** using NLP and rule engines.
Data Silos & Fragmentation	Difficulty in consolidating quality/compliance data from disparate systems.	AI can unify and **normalize data** from multiple systems into a **centralized, searchable** knowledge graph.
Manual & Paper-Based Processes	Error-prone, inefficient, and hard to audit or scale.	AI-powered automation **digitizes workflows & forms**, **extracts data from documents**, and enforces process rules.
Cultural Resistance	Lack of employee engagement or resistance to change hampers adoption.	AI agents provide **in-context training, guidance**, and nudges to support change management.
Limited Visibility	Inability to monitor quality/compliance in real time or across global units.	AI provides real-time dashboards, **predictive alerts**, and **performance analytics** across the enterprise.
Skills Gaps	Lack of internal expertise on standards (e.g., ISO 9001, 27001) or GxP requirements.	AI **copilots and assistants** offer **just-in-time compliance** support and automate complex rule interpretation.
Audit Readiness	Struggles to maintain traceability, version control, or access logs during audits.	AI **ensures continuous logging**, automated version control, and instant audit trail generation.

Interfacing Integrated Management System (IMS)

Process Management, Roles and Responsibilities
Includes Procedures, Process-based Digital SOPs, Option for BPMN, RASCI-VS, Role Mgmt, Asset Mgmt, Localization & Variance

Training
(Built on top of the Low-Code)

Internal Policies, Standards and Regulations
Include Ability to Fragment Regulatory Requirements



Inspection & Audit
(Built on top of the Low-Code)

Risk & Control Management
Includes Controls (Risk Mitigations)

eQMS Quality
Includes CAPA, Quality Events, Incidents, Supplier Mgmt, Product Mgmt, QMR, etc.
(Built on top of the Low-Code)

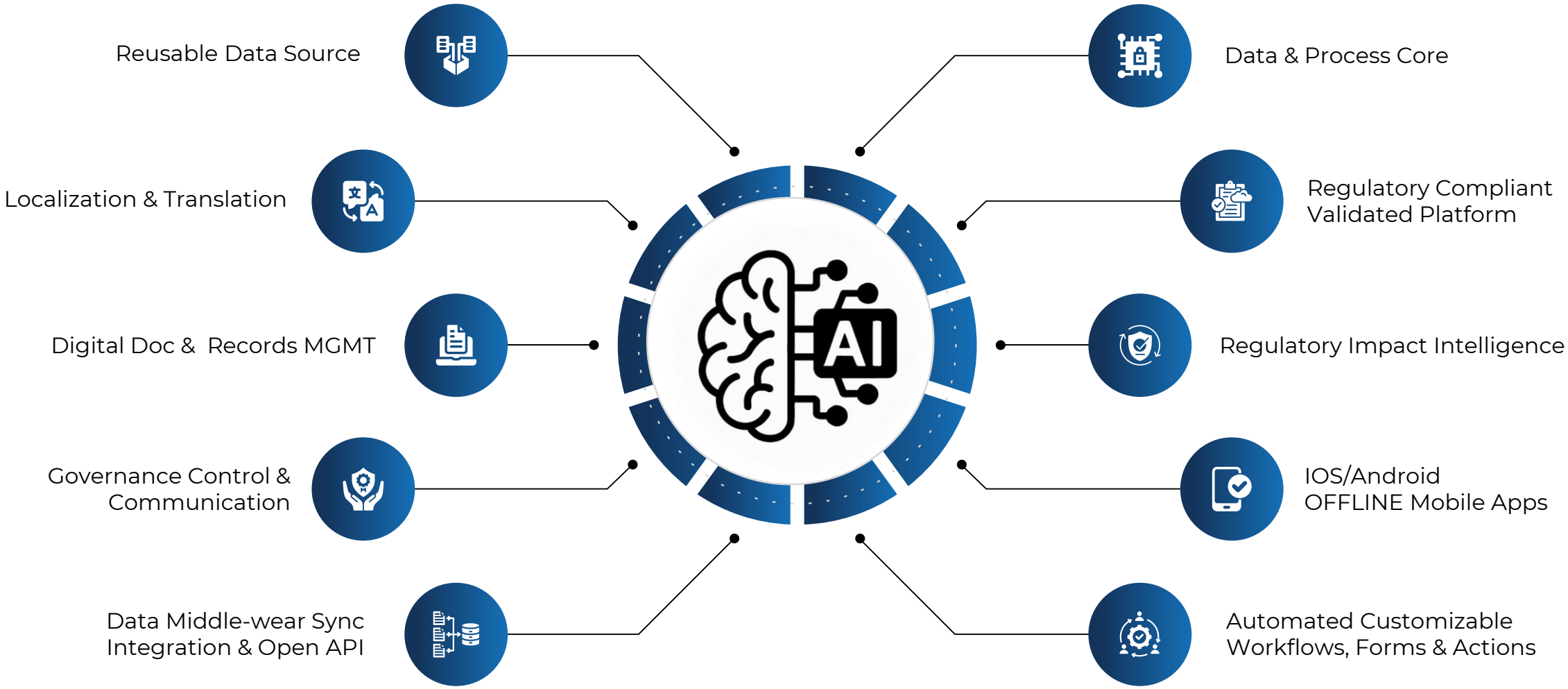
Strategic Alignment & IT Governance
Includes Performance Metrics (KPI, KRI, KCI, Objectives), Capabilities, Master Data, Glossary, IT Assets ISMS

BCM
Includes BIA, BCP, DR, Action Item Mgmt,
(Built on top of the Low-Code)

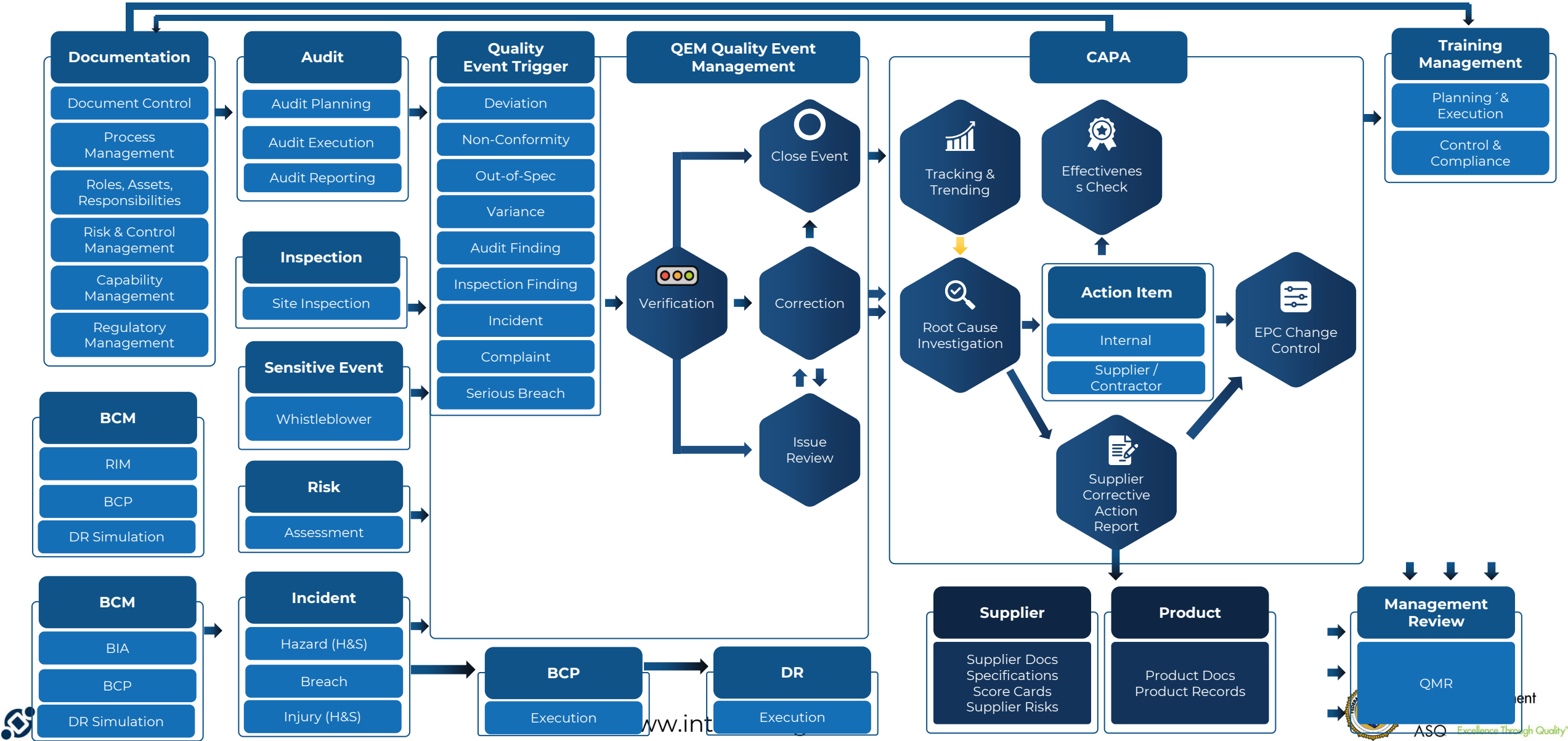
Document Control (DMS)
Includes Versioning, Change Tracking, Records, Projects, E-Signature, Archive

AI, Mobile, Dashboards, Analytics & Reporting

AI – DATA - PROCESS



End-to-End Data Reuse



Automated Governance Workflows

Periodic Review Cycle

Version Revision

Assign Changes to Implementer

Change Log & Notify Author

Author applies CR

Automated Triggers for Workflows based on Types / UDAs / hierarchy

Change Request (CR) / Improv.

Object Owner Reviews & Approves CR

Serial & Parallel Endorsement & Approval Workflows

Attestation

Publish Major (+1.0) or Minor (+0.01)

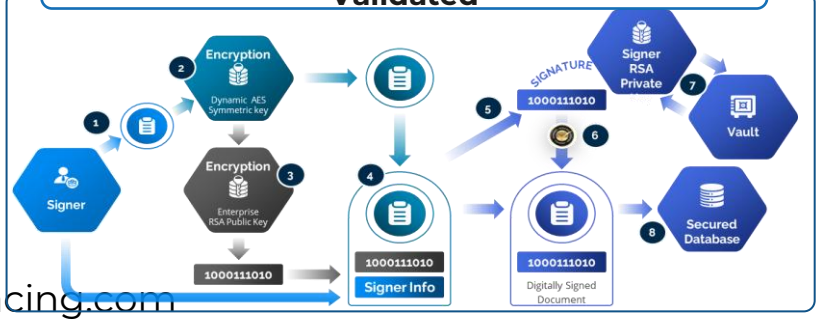
Notify Impacted Employees

Employees must Confirm they Read and Understood changes

Microsoft Teams

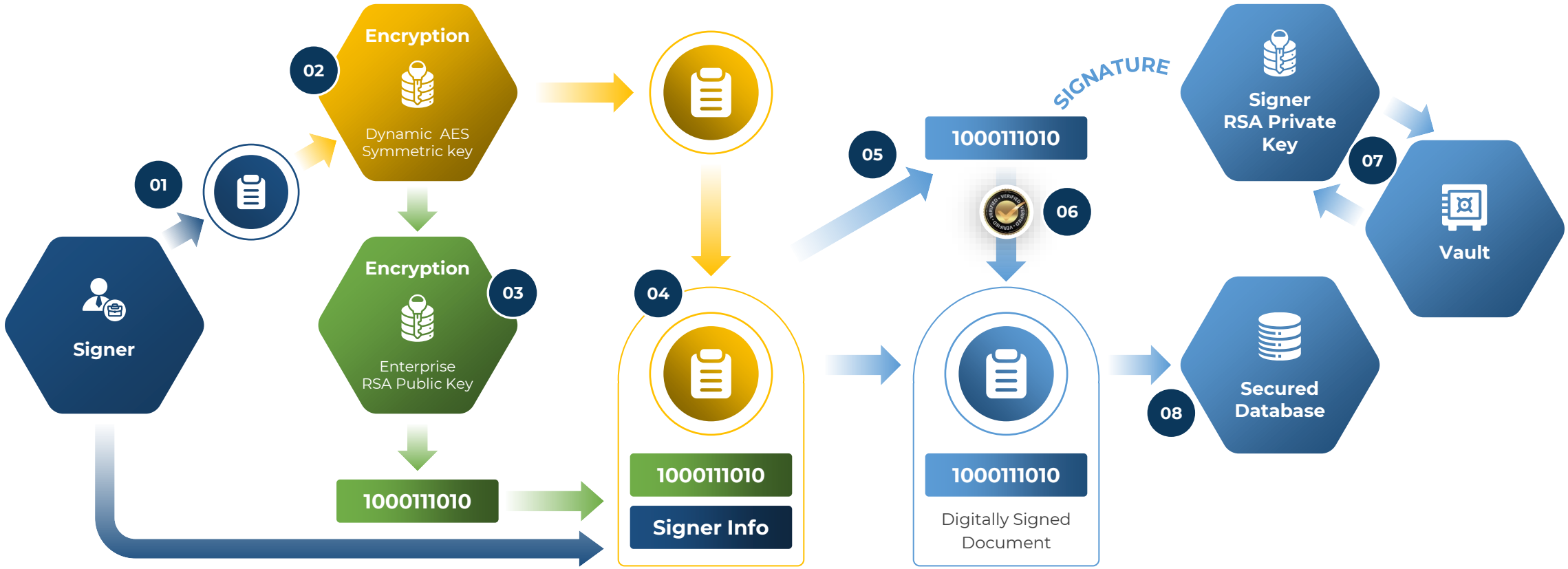
Employee Collaboration

21 CFR Part 11 Compliant / Annex 11 System Validated



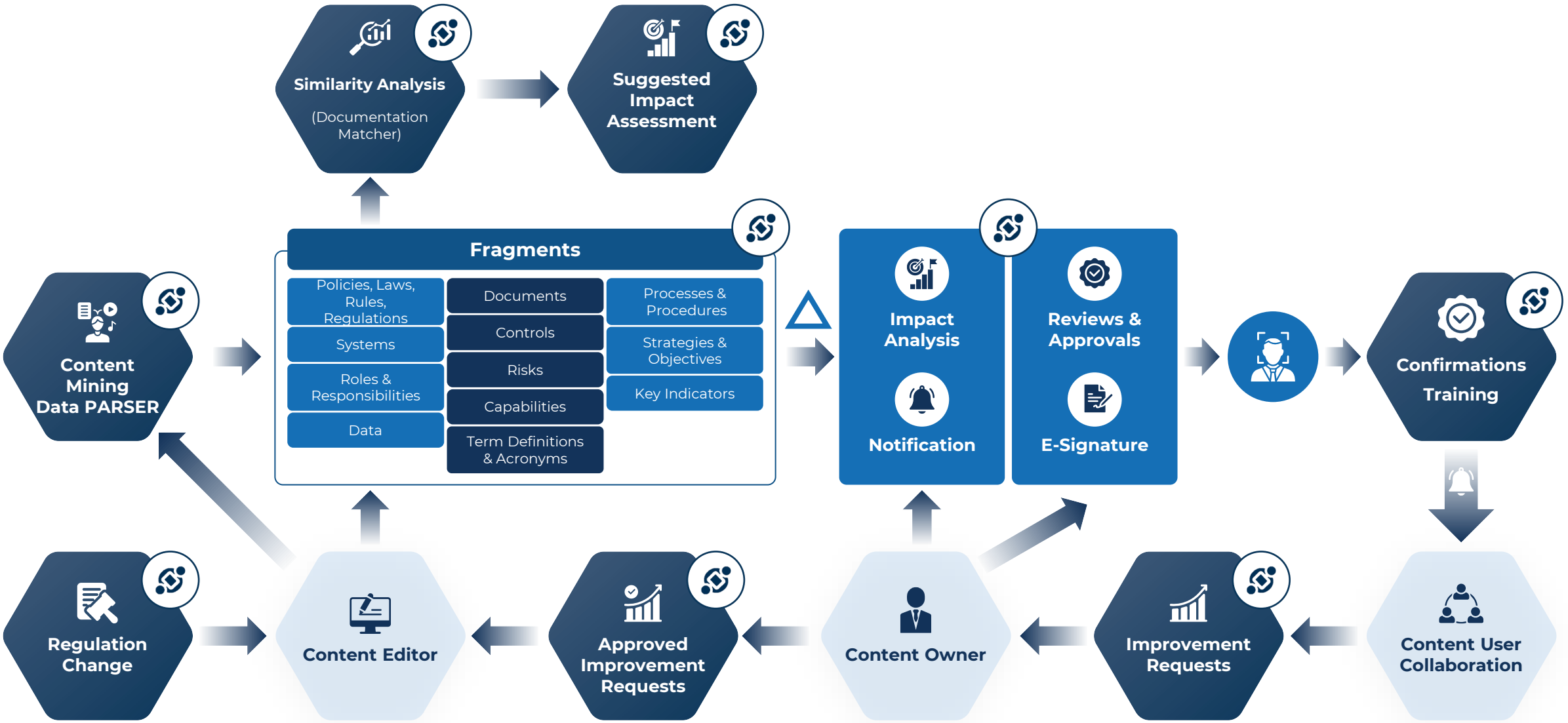
MFA & Digital Signature (21 CFR Part 11 Compliant)

CFR Part 11 Computer System Validated (CSV)



- Digital Signature Approval Workflow w User Specific encrypted private key
- Enforce revision schedules
- 2 level Multi-Factor Authentication (MFA) for logon, admin & approvals
- Report end-user policy read acceptance confirmation
- Report all training attendance
- Maintain all Deleted Records for Retention Period (7-13 years)
- Retention Archive Audit Reporting
- Log all content changes (audit log)
- Log all admin changes
- Version control with restoration
- # of views, for how long, by who

Regulatory Intelligence Workflows



3rd Party System Data Integrations

Visio

MS Visio Import/Export

Excel

MS Excel Import/Export

MS Word, PDF & Image Parser Input & Document and/or Image Output

documentum

Office 365

SharePoint

File links, URLs & App links

YouTube

vimeo

MP4 VIDEO

Import, Embed Rich Content

MS Bot application – Synchronization

Microsoft Teams

Office 365

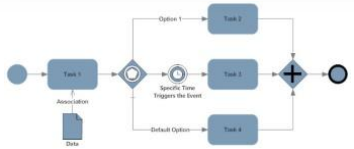
REST API (SWAGGER)

Bi-directional Middleware Sync

Jira

essential project

BPMN 2.0 Import/Export / ARIS XML / iGrafx XML



REST (100% API Dev Guide), DB Master Data Import

SAP

IBM maximo

ORACLE E-BUSINESS SUITE

salesforce

SMTP Email Notifications & Task assignment

ADFS, SSO, SAML2, AD Sync Authentication

Azure

okta

AD FS

Analytics, Dashboarding & Reporting

COGNOS

Google Analytics

Business Objects

Discover, Analyze, Improve, Automate

Data Mining & Migration

Current State Modeling & Documentation

Governance & Regulatory Compliance Requirements

Migrate. Discover & Create

Analyze

Measure Performance

Future State Requirements

Analyze & Improve

Automation & Monitoring

Change Management

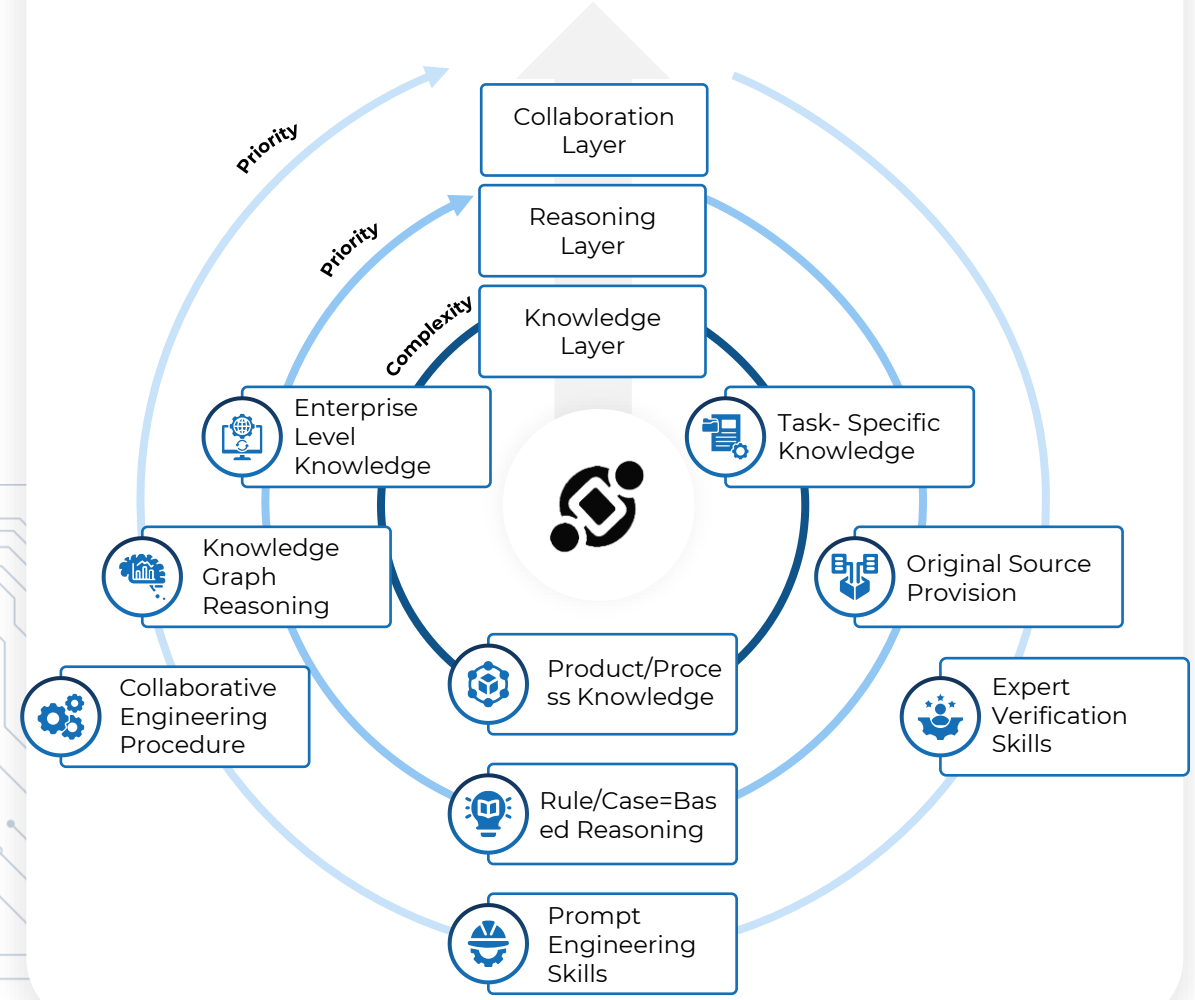
Governance & Continuous Improvement

Automate, Govern & Improve

Watch Video

www.youtu.be/In8p-plWmOw

COMPLEXITY LAYERS



Summary of Differences

Layer	Function	Focus	Examples
Knowledge	Stores and organizes data	What the AI knows	Knowledge Graphs, Ontologies
Reasoning	Processes and infers decisions	Why/When decisions are made	Expert Systems, Bayesian Networks
Collaboration	Enables communication and teamwork	How AI interacts	Chatbots, Multi-Agent Systems

AI MODEL TYPES USED

Deep Learning Transformer Models

Transformers are deep learning models designed for sequence processing.

Agentic AI

An interactive experience that combines the real world and computer-generated content.

Computer Vision

This technology enables computers to 'see' and interpret visual information.

Vector Search

A method of information retrieval where documents and queries are represented as vectors instead of plain text. (Semantic vs. Keyword)

NLP

NLP is all about helping computers understand and respond to human language.

Retrieval Augmented Generation

Enhances LLMs by incorporating external data sources to provide more accurate and relevant responses

Generative AI

Can generate new content, including text, images, and videos, based on learning from a dataset

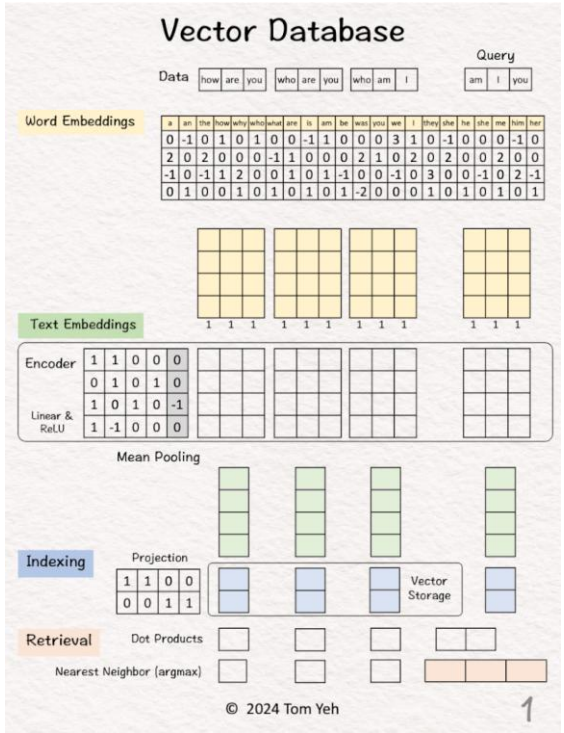
Retrieval Augmented Generation

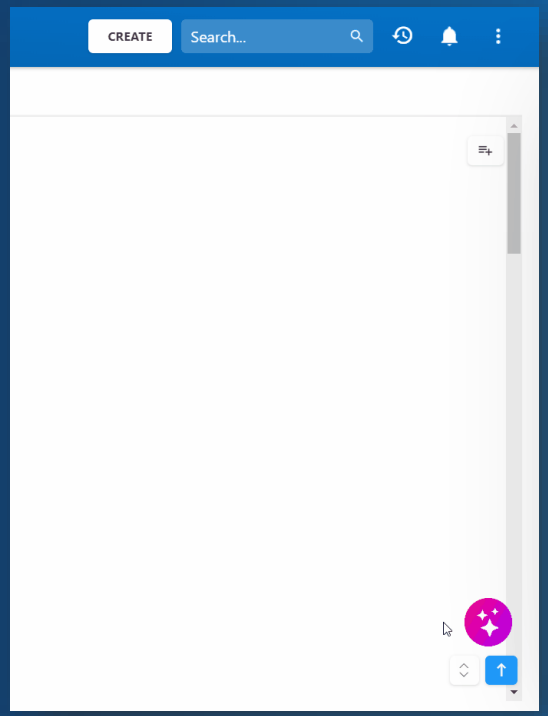
Enhances LLMs by incorporating external data sources to provide more accurate and relevant responses

Vector Search

A method of information retrieval where documents and queries are represented as vectors instead of plain text. (Semantic vs. Keyword)

Vector search is a method of information retrieval where documents and queries are represented as vectors instead of plain text. A technique that uses dense embeddings (vector representations of text or other data) to find items that are semantically similar to a query. It is particularly effective in tasks requiring factual accuracy and context-driven generation.





DEMO

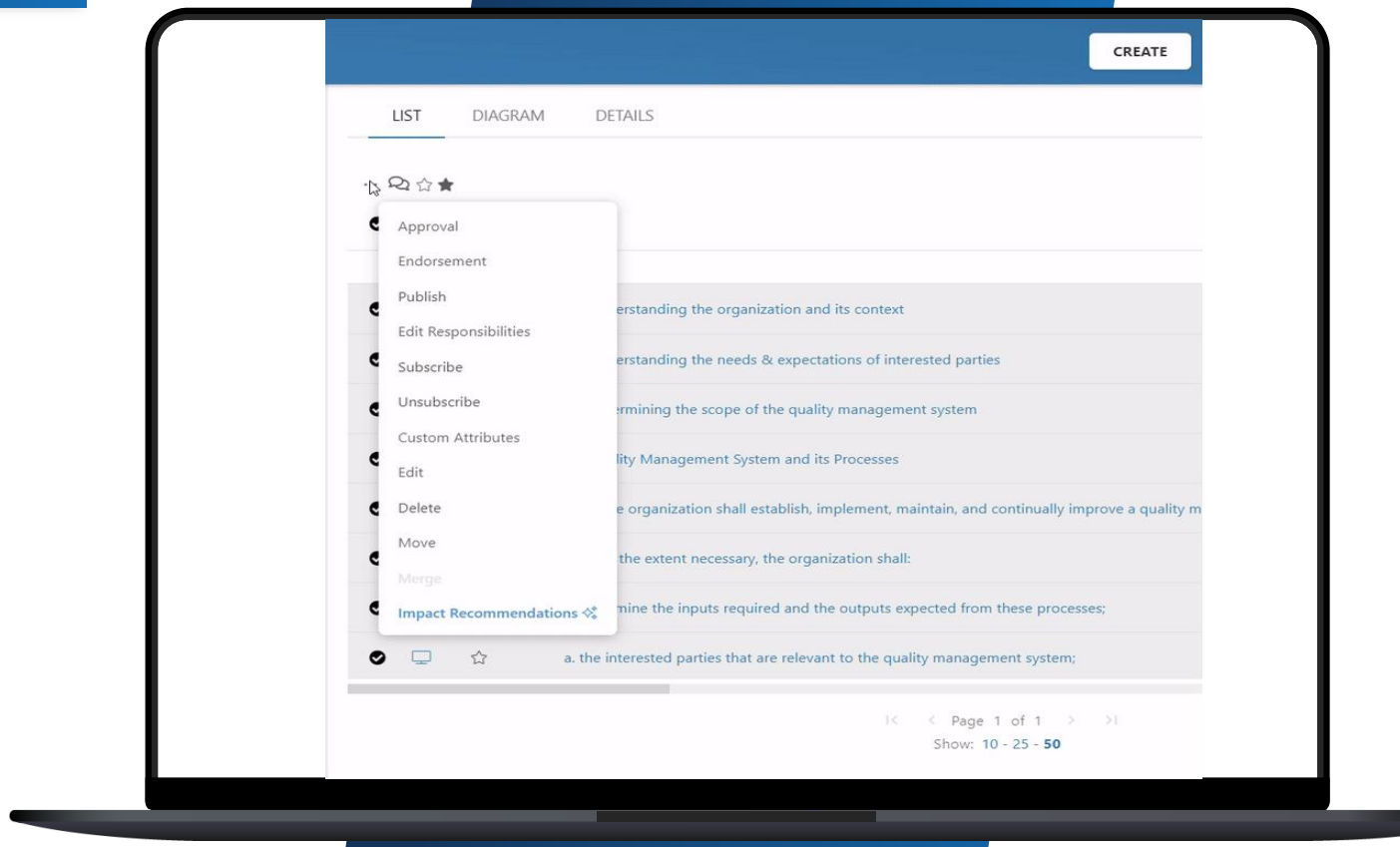
- AI ChatBot Policy & Process

Agentic AI

Can generate new content, including text, images, and videos, based on learning from a dataset

Process Improve, Compliance & Impact Assessments

A deep learning multi-model model that autonomously search, analyze and execute content improvements or execute tasks!



DEMO

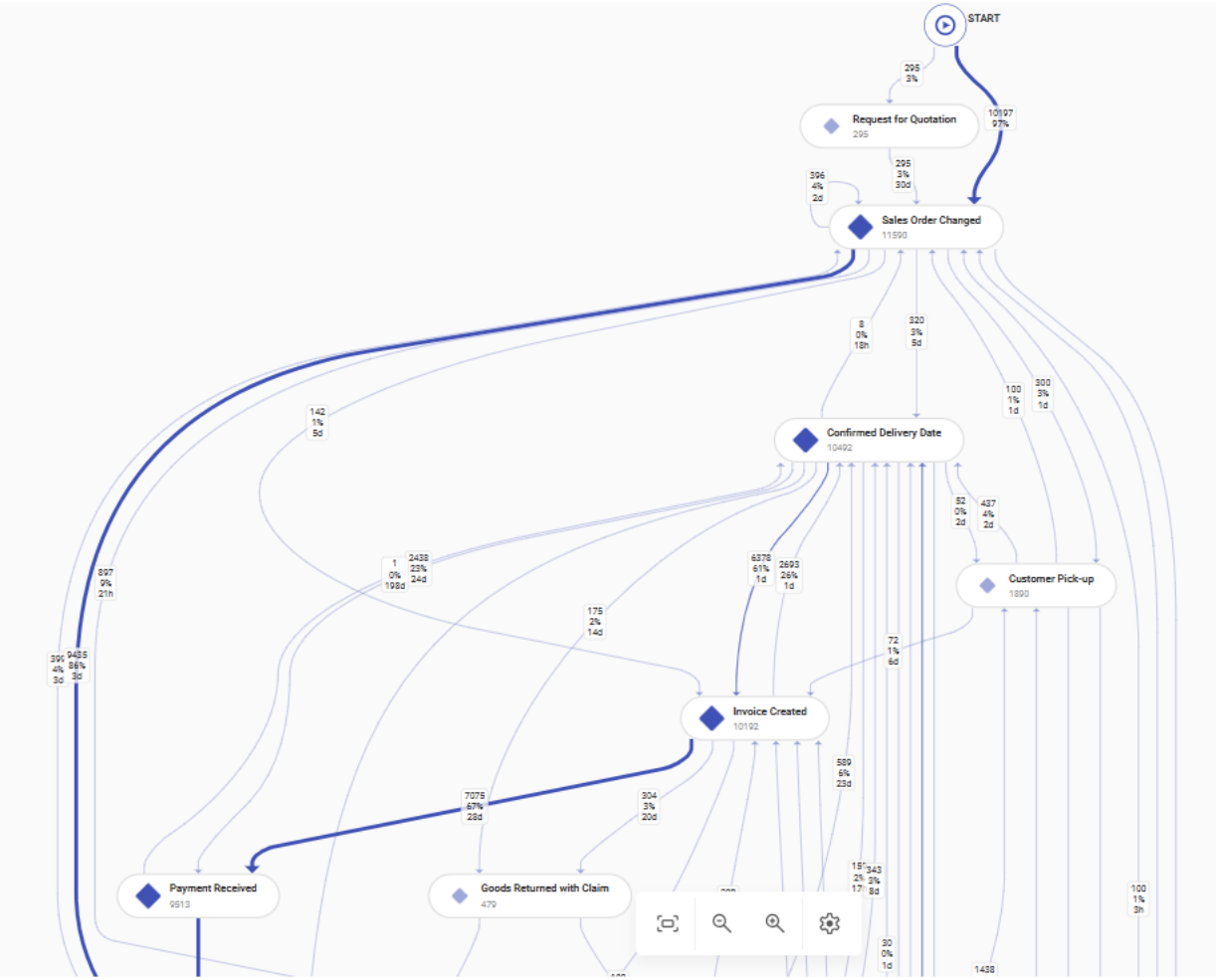
- Process Improvement
- Compliance Impact Recommendations

PROCESS MINING & Predictive Simulation

Transformers are deep learning models designed for sequence processing. D**o not process data sequentially,** they use **self-attention**, which allows them to analyze all elements in a sequence simultaneously. This makes transformers highly effective for long-range dependencies and complex patterns in event logs.

Deep Learning Transformer Models

Transformers are deep learning models designed for sequence processing.

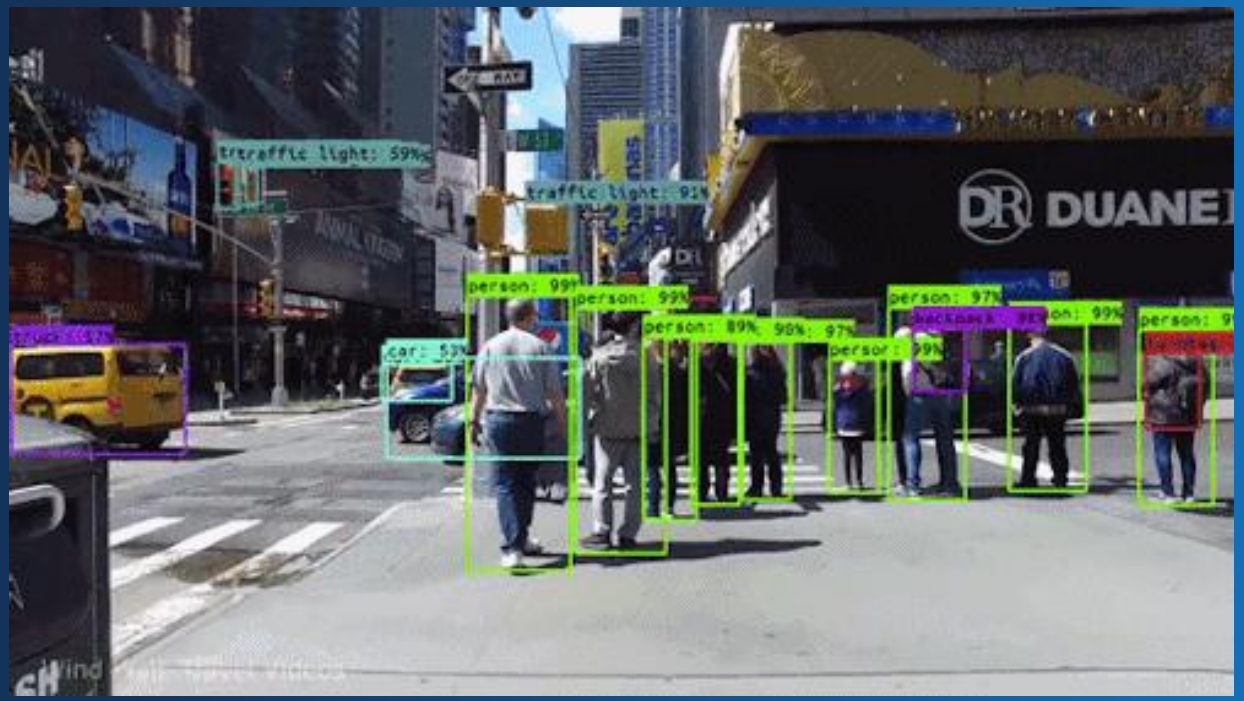


DEMO

- AI Process Mining
- AI Process Predictive Simulation

SHAPE DETECTION

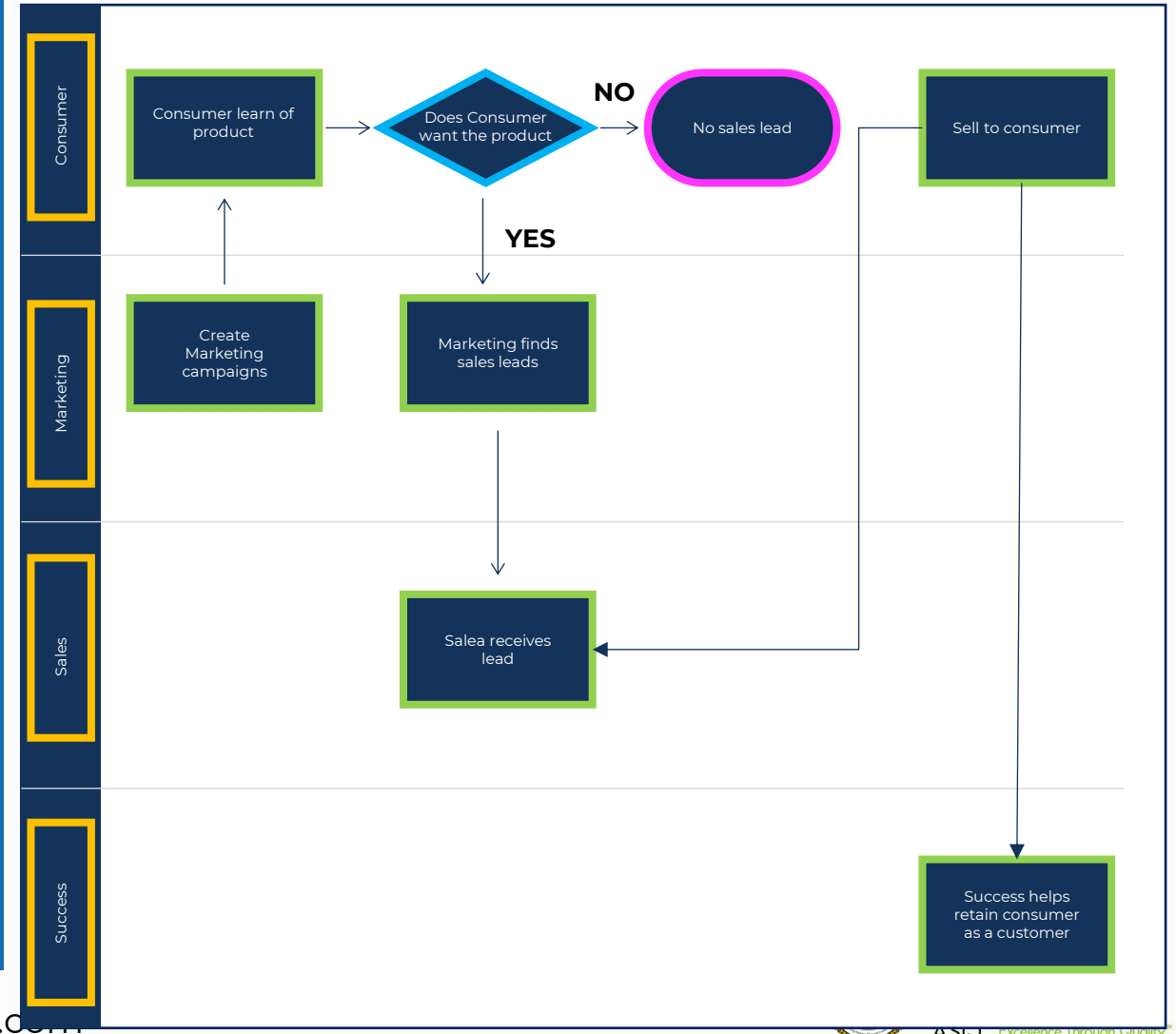
State-of-the-art object detection model designed to recognize and locate various objects in images or videos with high accuracy and speed, making real-time processing possible.



Computer Vision

This technology enables computers to 'see' and interpret visual information.

YoloV7



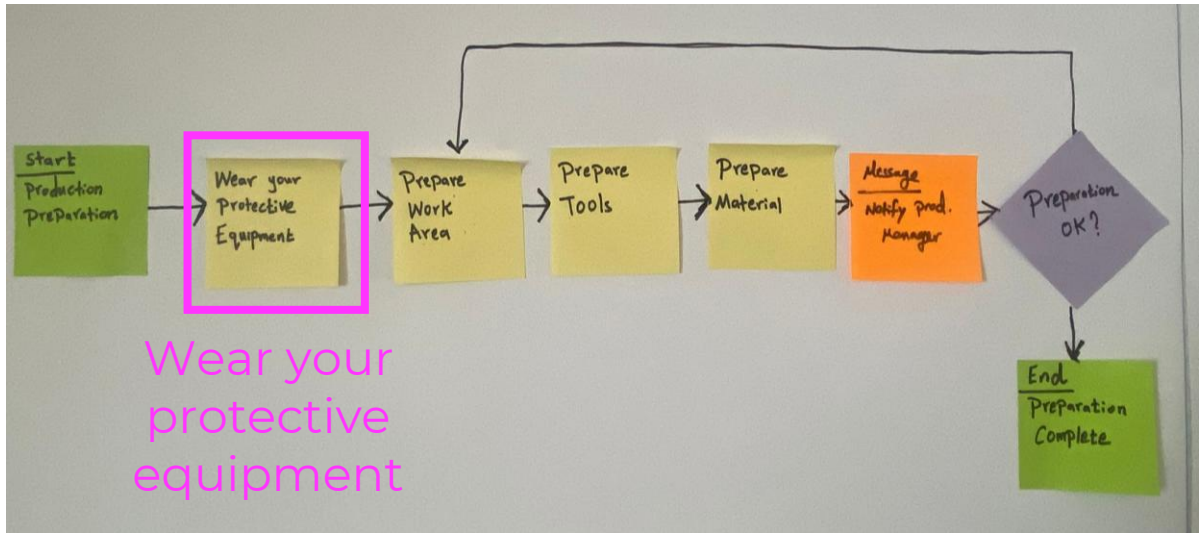
Text Extraction

A highly accurate text recognition model that can identify and extract text. By applying it to the regions of text identified by our shape detection model, we can accurately extract the textual data present in the graph

Computer Vision

This technology enables computers to 'see' and interpret visual information.

Paddle OCR



Optical

Optical

Character

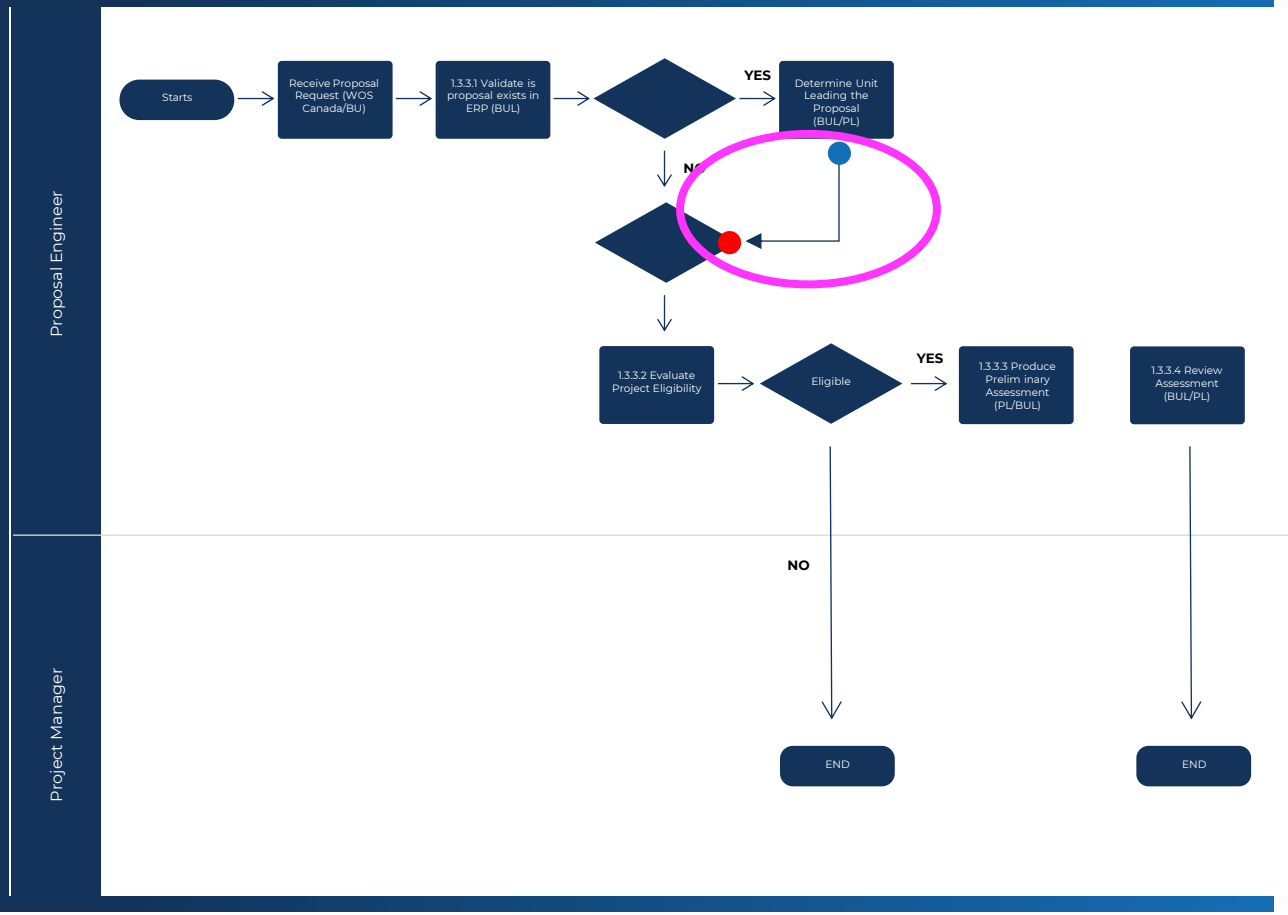
Character

Recognition

Recognition

Arrow Detection

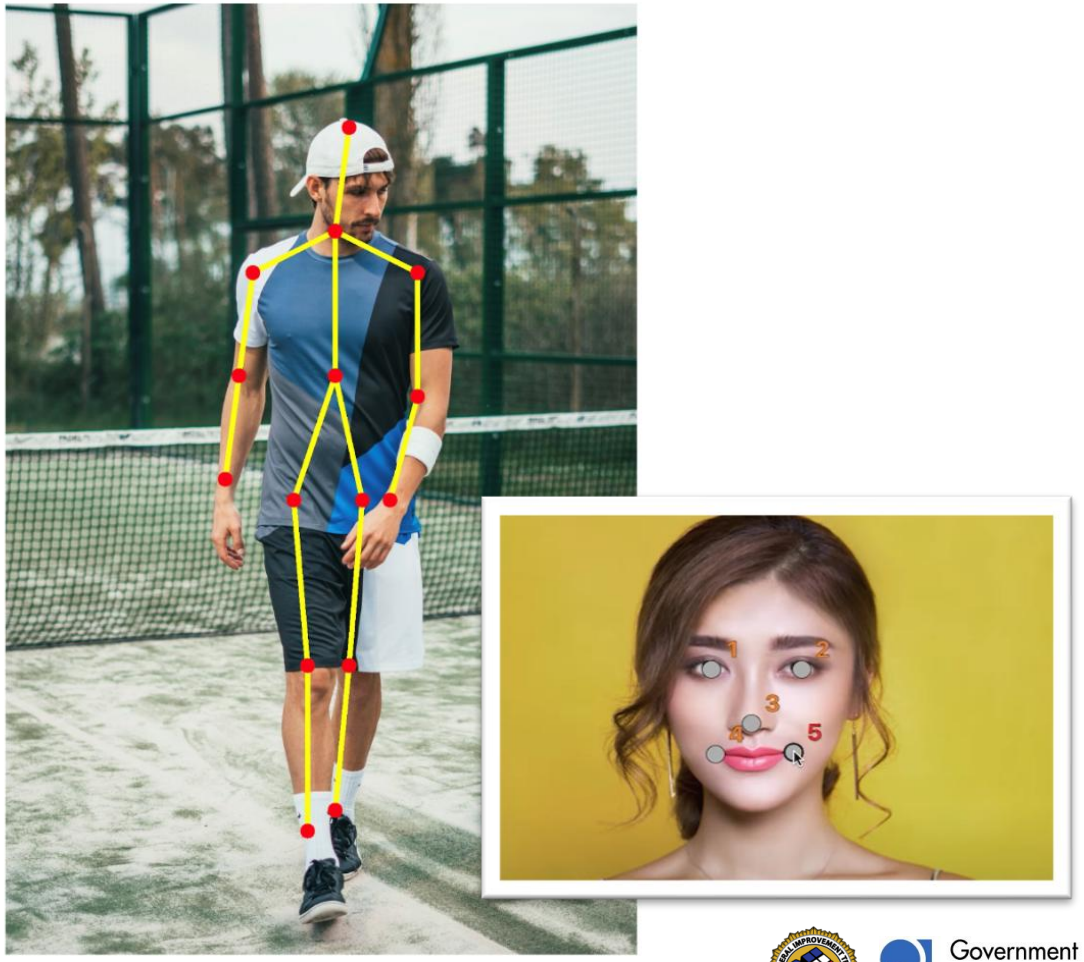
A highly accurate pose estimation model that can identify and locate keypoints in images.



Computer Vision

This technology enables computers to 'see' and interpret visual information.

YOLOV8-Pose



DEMO

- Video to Digital Process
- Image to Digital Process

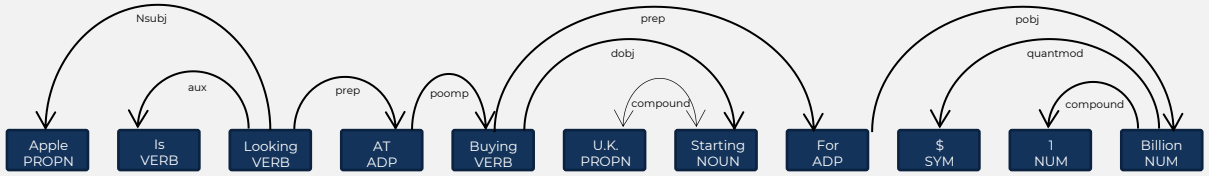
Data Semantics

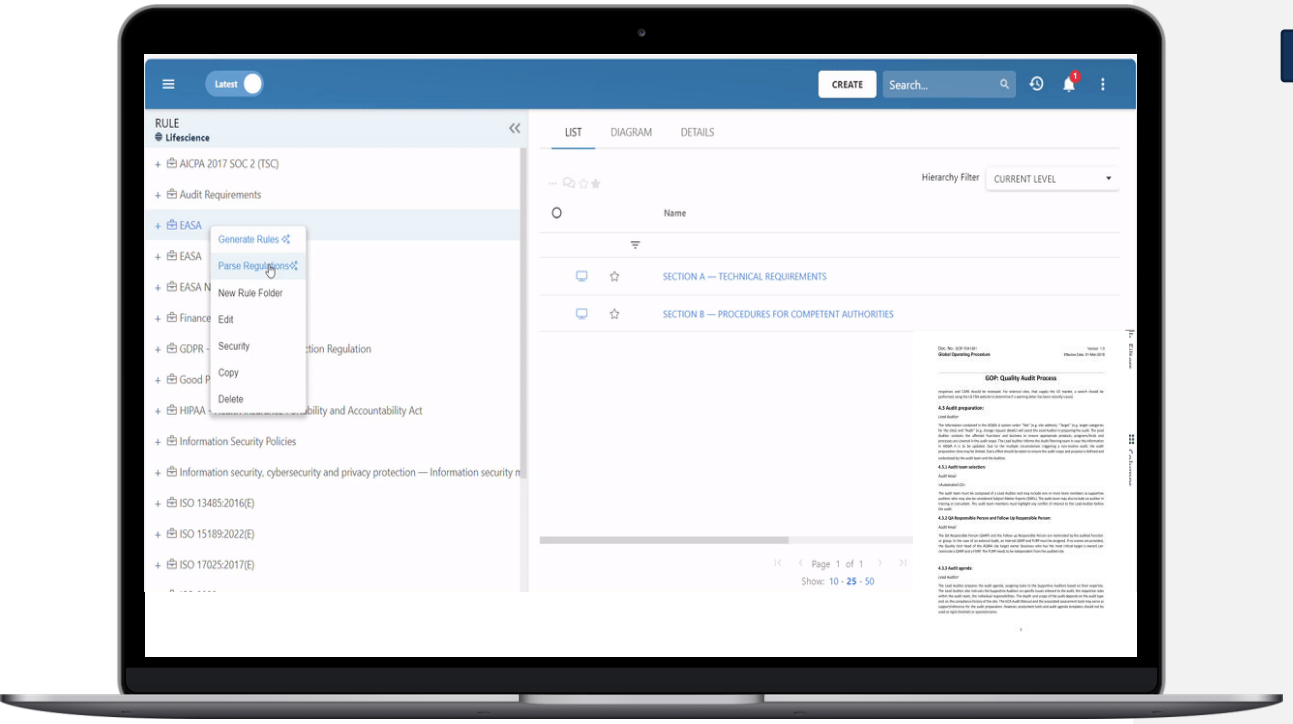
The science of word-meaning, a model that Analyzes and extracts data fragments from unstructured text based on Phrasal semantics / Sentential Semantics

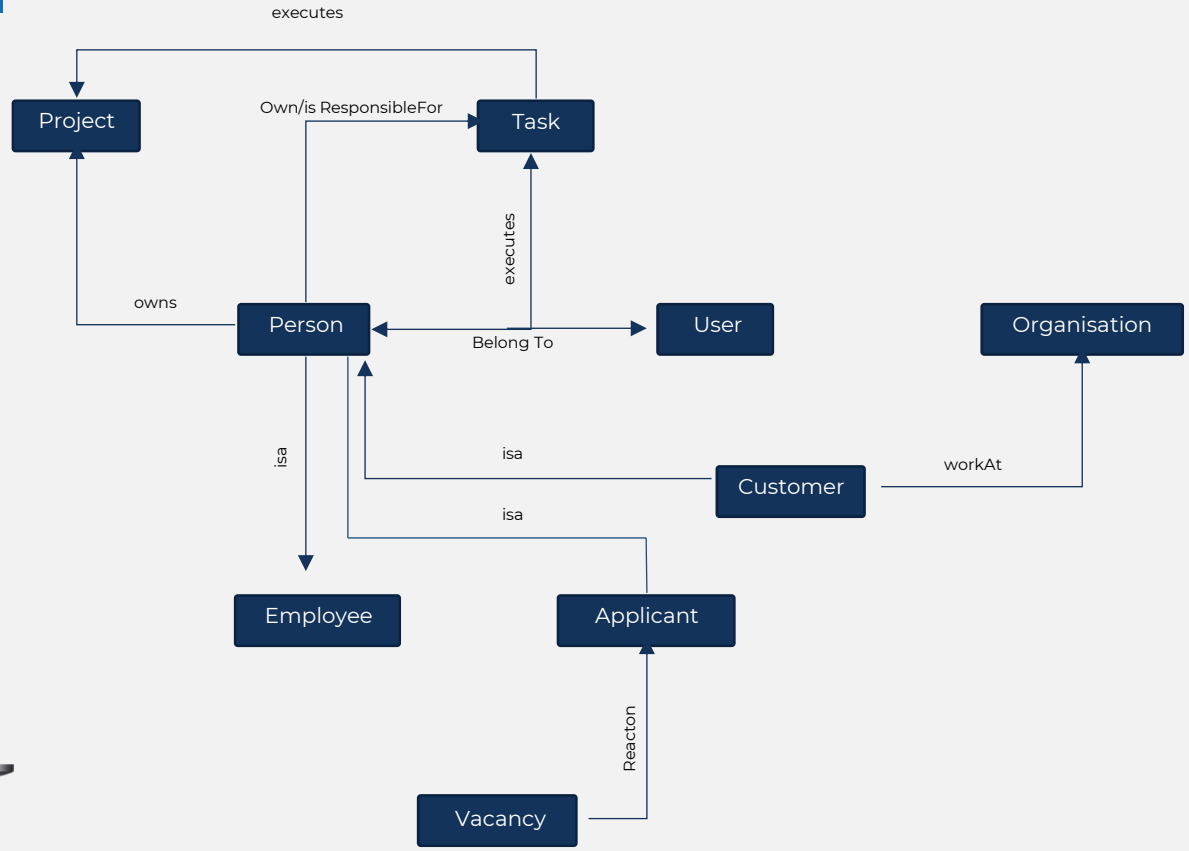
Natural Language Processing (NLP)

NLP is all about helping computers understand and respond to human language.

Spacy (NER model)







DEMO

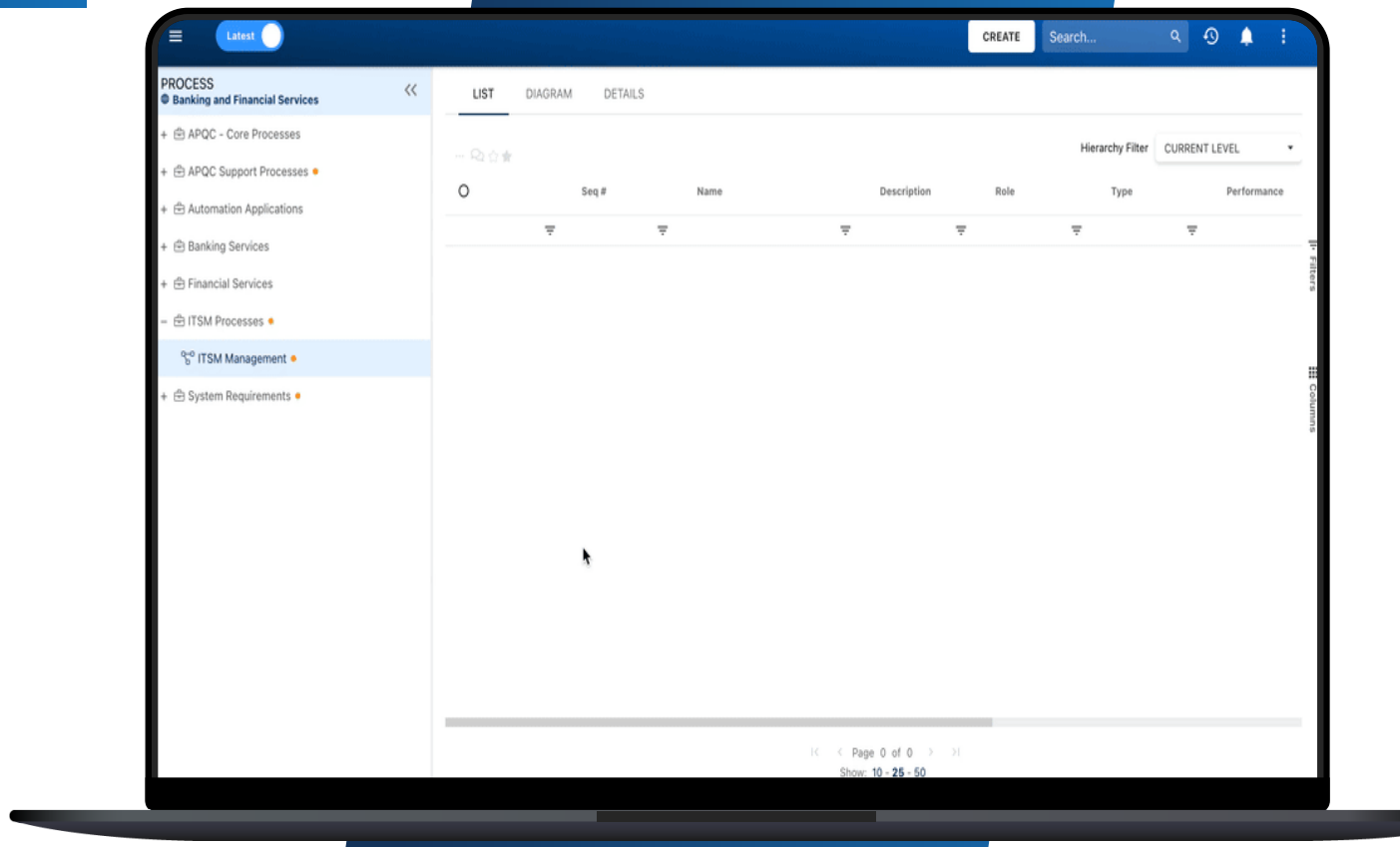
- SOP Unstructured File Document to Data (Digital Process)
- Image / PDF to Form / Document with metadata
- Regulation Document Fragmentation

Generative AI

Can generate new content, including text, images, and videos, based on learning from a dataset

Content Creation

A deep learning multi-model model that can generate your **processes**, **eForms**, full automated **applications**, procedures, documents, **risks, controls**, policies, regulations roles, assets, KPI & much more!



DEMO

- Process Generation
- Procedure Generation
- Word Doc Generation
- eFORM Generation
- Wiki & Table Generation
- Risk & Control Generation
- Regulation Generation
- Role Generation
- Process Improvement
- Automated Workflow (app) Generation

Augmented Reality

An interactive experience that combines the real world and computer-generated content. The content can span multiple sensory modalities,
including visual, auditory, haptic, somatosensory and olfactory: a combination of real and virtual worlds, real-time interaction, and accurate 3D registration of virtual and real objects.

AR / VR/ MR (computer vision)

An interactive experience that combines the real world and computer-generated content.


DLR
roof of Concept

Connect!

https://www.linkedin.com/in/solution

Try AI

https://www.interfacing.com/qms

Learn More (Webinar)

https://interfacing.com/business-transformation-webinars

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