AI as an inflection point driving Construction Productivity

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ORACLE

ORACLE
Construction and
Engineering

"Deliver on the promise of AI to transform how we design, build and operate critical assets, while managing exposure to risk for our customers."

Why Oracle?

ORACLE

"Oracle is well on its way to being not only the world's largest cloud application company but also one of the world's largest cloud infrastructure companies."

SAFRA CATZ
CEO, Oracle

Oracle announces US$ 14 billion investment into AI and Cloud in Saudi Arabia

MARCH 18, 2025

Oracle Invests $5 Billion to Fuel UK's AI-Driven Future

Oracle to invest $6.5bn in AI and cloud computing in Malaysia

The tech giant plans to open a cloud region to help boost the country's digital economy, where the government wants to enhance its AI capabilities and to create 3,000 smart factories by 2030.

UK Construction Spend - £200Bn/annum

Public & Private combined

UK Gov – Major Projects Portfolio

GMPP summary for projects reporting monetised benefits

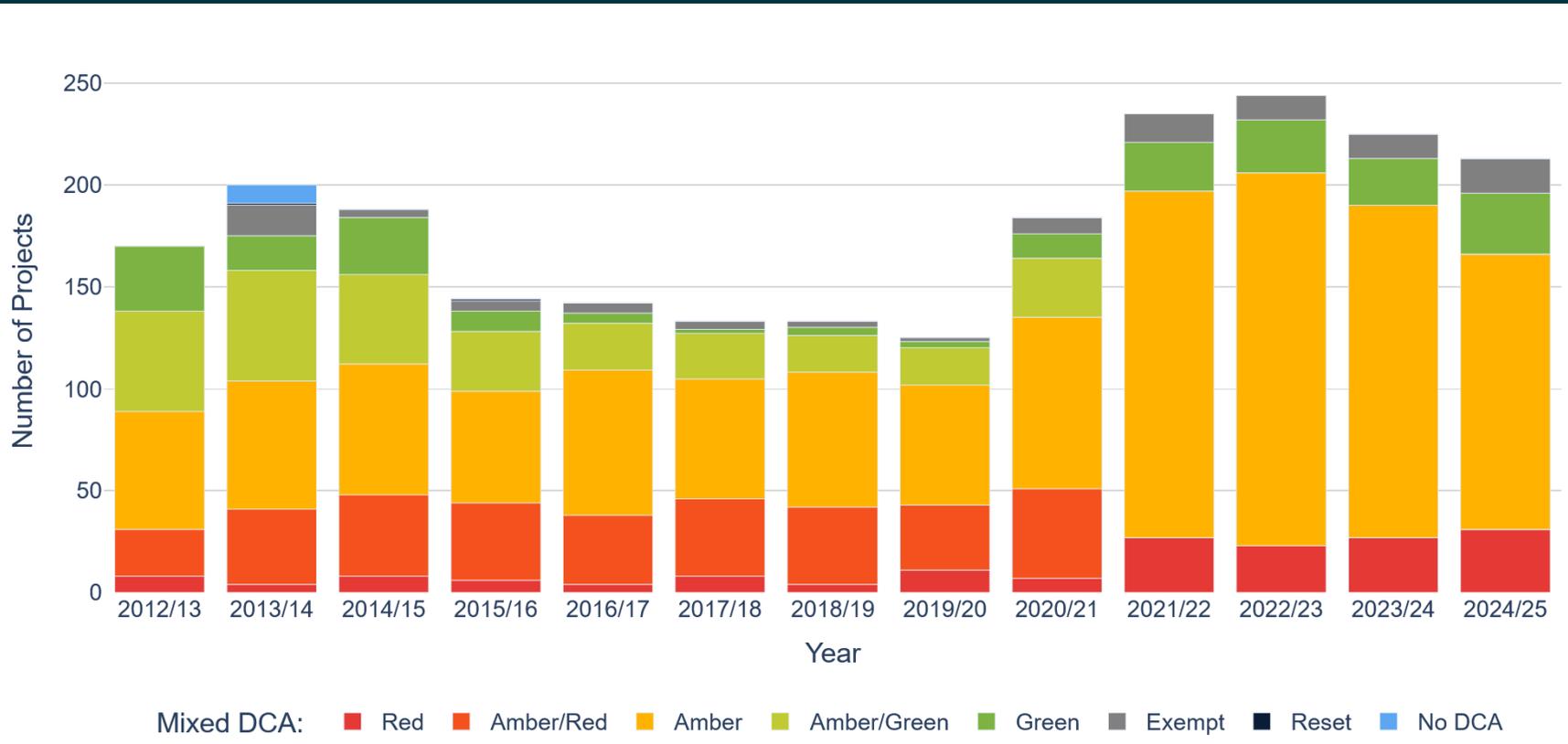|	Government Major Project Portfolio	213 projects	£996 (bn) whole life cost	£742 (bn) whole life benefits
	Infrastructure and Construction	68 projects	£433 (bn) whole life cost	£384 (bn) whole life benefits
	Military Capability	45 projects	£327 (bn) whole life cost	£22 (bn) whole life benefits
	Government Transformation and Service Delivery	76 projects	£200 (bn) whole life cost	£294 (bn) whole life benefits
	ICT	24 projects	£36 (bn) whole life cost	£42 (bn) whole life benefits

NISTA annual report 2024-2025

National Infrastructure and Service Transformation Authority (NISTA)
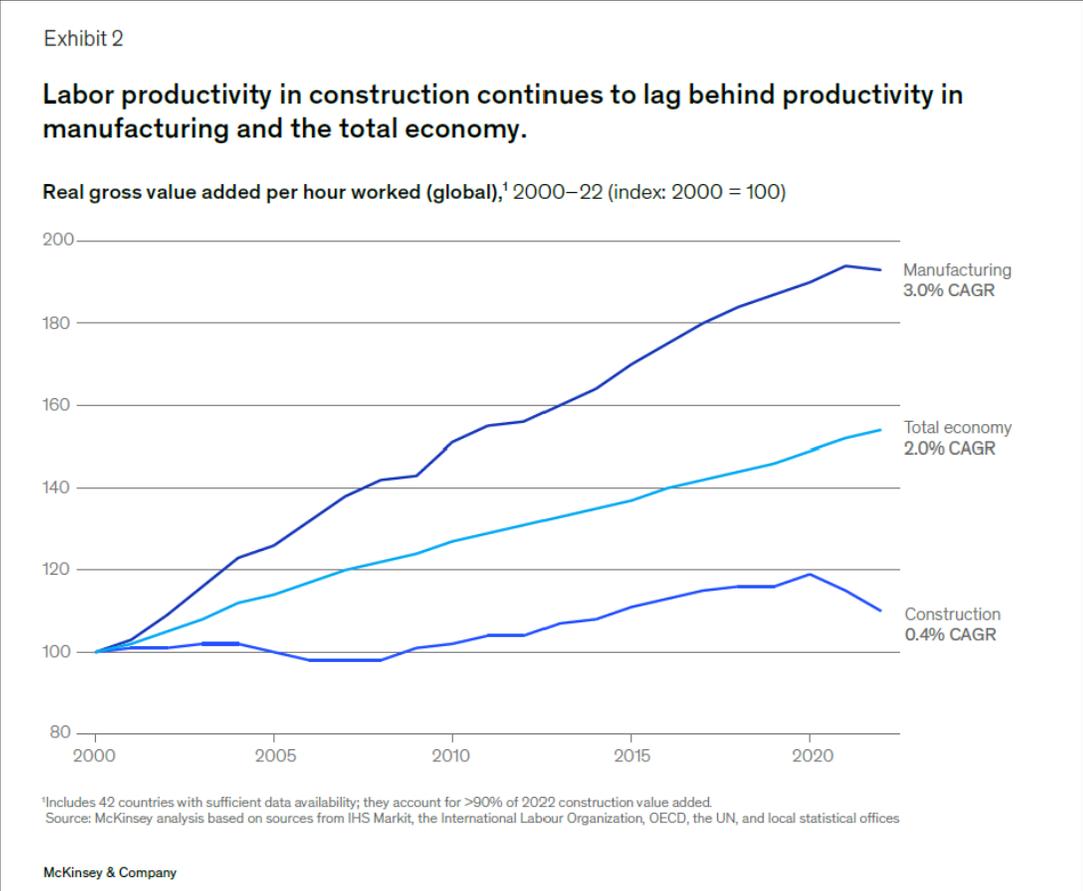
Delivery Confidence

GMPP delivery confidence over time
DCA analysis 2013 - 2025

NISTA annual report 2024-2025

Delivery Confidence Assessment (DCA)

Productivity is a significant factor

Productivity

Exhibit 2

Labor productivity in construction continues to lag behind productivity in manufacturing and the total economy.

Real gross value added per hour worked (global),[1] 2000–22 (index: 2000 = 100)

- Manufacturing 3.0% CAGR
- Total economy 2.0% CAGR
- Construction 0.4% CAGR

[1]Includes 42 countries with sufficient data availability; they account for >90% of 2022 construction value added.
Source: McKinsey analysis based on sources from IHS Markit, the International Labour Organization, OECD, the UN, and local statistical offices

McKinsey & Company

UK construction productivity grows at the annual rate of 0.3%

What is the promise of AI for Construction?

Profitability

- Resource and Waste optimization
- Contract comprehension and management
- Audit systems
- Predictive

Efficiency

- Scheduling Optimization
- Data summarization
- Knowledge transfer
- Less manual workload
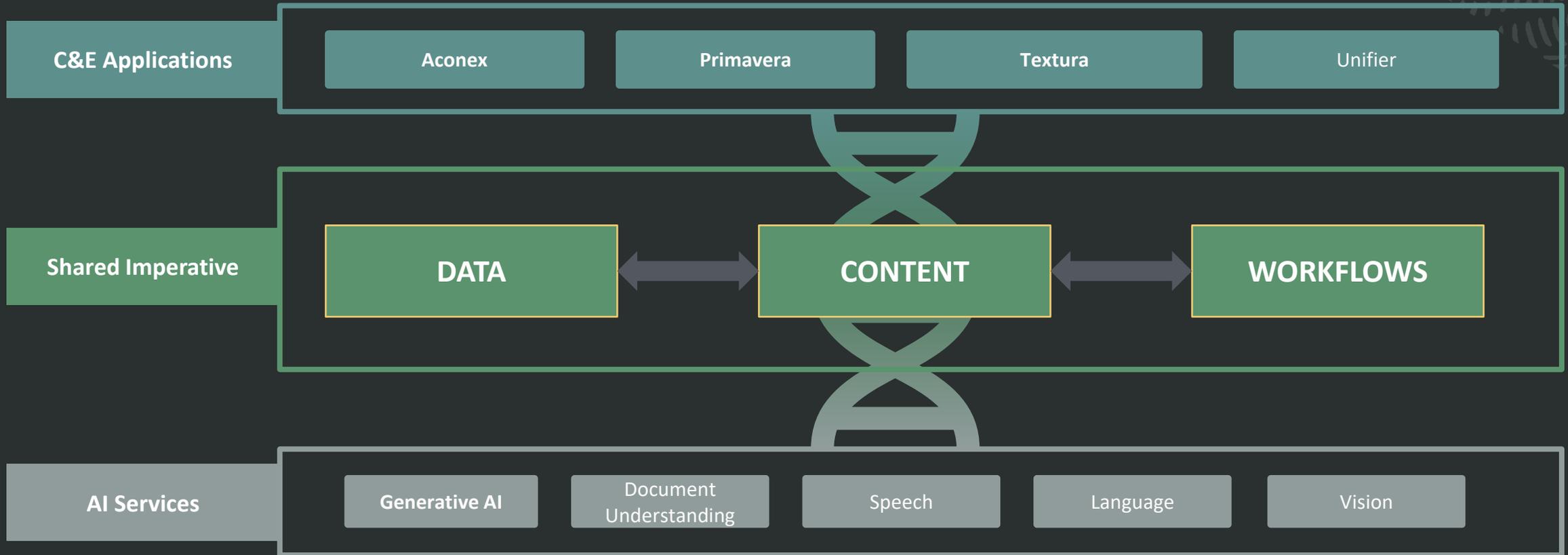- Upload checking document quality

Safety

- Always-on Safety Monitoring
- Reduction in incidents

Security & Risk

- Connected but secure
- Authorized tools
- Robust recovery
- Threat mitigation

Where technology meets Industry expertise

C&E Applications	Aconex	Primavera	Textura	Unifier

Shared Imperative	DATA	⟷	CONTENT	⟷	WORKFLOWS

AI Services	Generative AI	Document Understanding	Speech	Language	Vision

Oracle 26AI Db released at AI world

Why Oracle

Best Technology

Oracle Cloud Infrastructure

- Highest performance
- Built-in security
- Lowest complexity
- Chosen by leading LLM providers

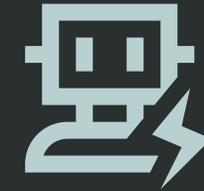## Enterprise Data

Unified Application Data

- Trusted systems of record
- Enriched with industry context
- Data security carries through AI
- Integrated application suite

Embedded AI

AI for Applications

- Fastest time to value
- Human in the loop
- Enterprise-grade guardrails

Extensible AI

Customization

- Extend Oracle foundation models
- Select a preferred LLM
- Build your on GenAI workflows

The Data Journey

Prescriptive Data

6. Prescriptive

What should be done when it happens again?

E.g. Recommendations, optimizations

Integrated Data

5. Predictive

What's likely to happen next?

E.g. Forecasting, simulations, Machine learning

4. Diagnostic

Why are they happening?

E.g. Root-cause analysis, What-ifs, exploratory analysis

3. Holistic

What are all the things that are happening now?

E.g. integrated insights across systems

Siloed Application Data

2. Reflective

What has typically happened in the past?

E.g. Baselines, benchmarks, lessons learnt

1. Descriptive

What is happening now?

E.g. Reports and dashboards

Structured data	Structured and unstructured data

DATA: Leveraging the Common Data Environment

C&E Applications	Aconex	Primavera	Textura	Unifier

AI Capability	Chat	Document Understanding	Workflow Agentic	Predictive	Vision

Data Repository

95 M documents uploaded annually

6000 terabytes of files

8000+ years of project data

Drawings, models, contracts, RFIs, documents...
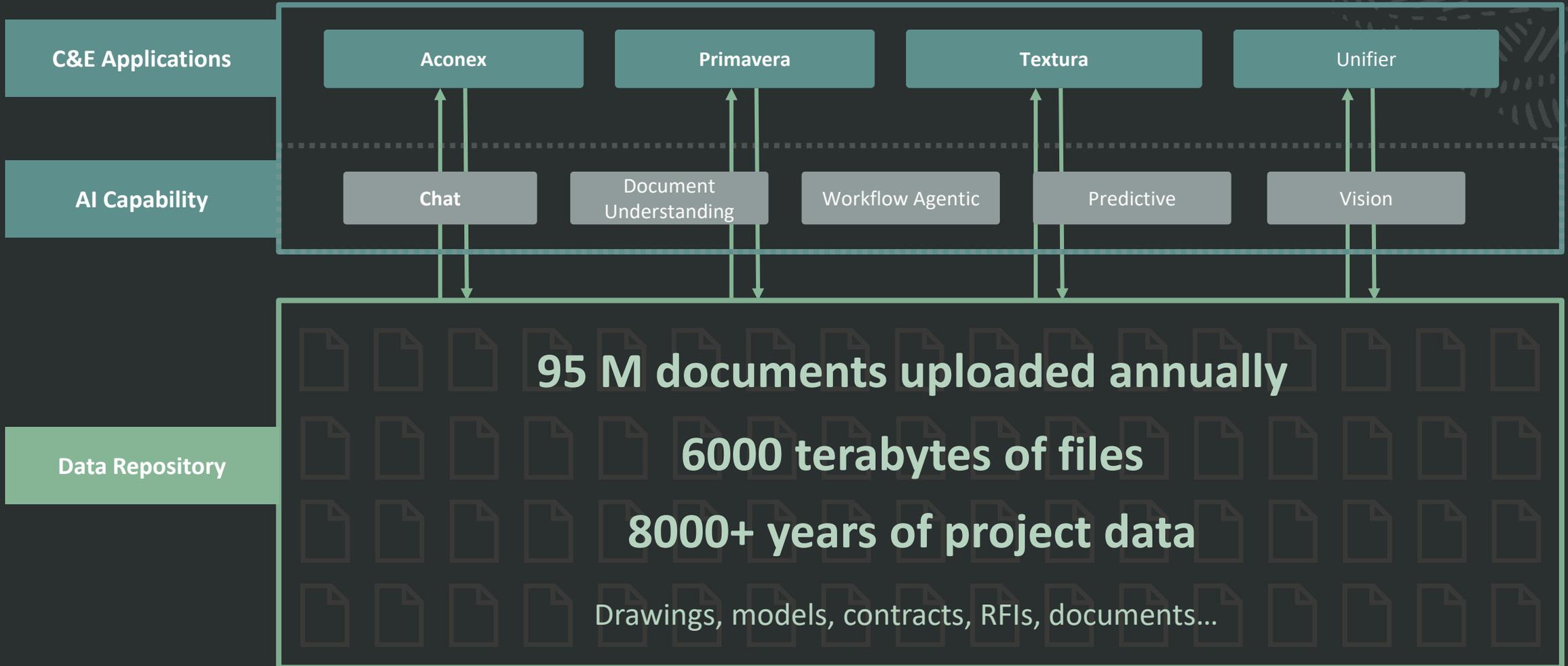
CONTENT: Evolution of Generative AI

The Journey to 2030

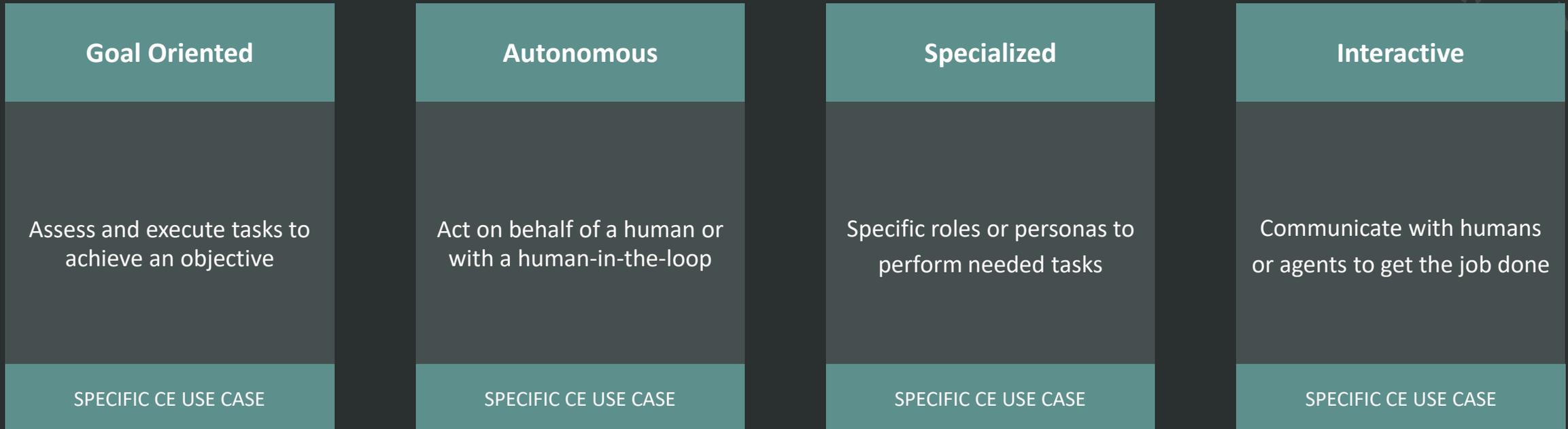| Language	Contextual	Action Taking	Reasoning
Interacts with humans using human language	Always-on, sensing and reacting to data from their environment, even as it changes	Acts autonomously, with a human guiding and approving in key moments	Creates action plans, identifies next steps, makes judgment calls; Enables process orchestration involving multiple AI agents
SPECIFIC CE USE CASE	SPECIFIC CE USE CASE	SPECIFIC CE USE CASE	SPECIFIC CE USE CASE

Generative AI capabilities are on a spectrum and build upon one another to enable more sophisticated use cases

GO KART →————————————————————→ **RACE CAR**

WORKFLOWS: Evolution of Agentic AI

The Journey to 2030

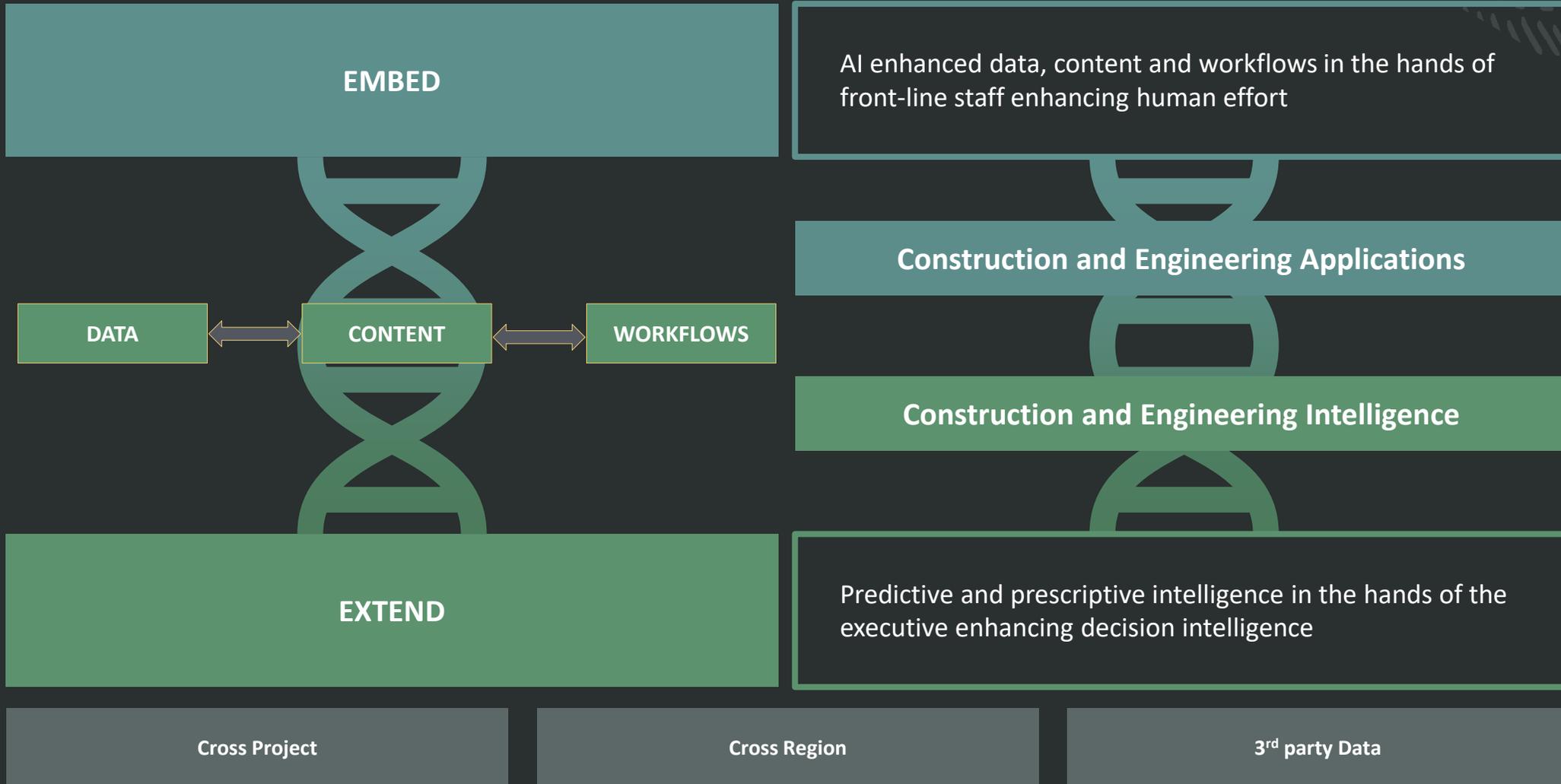| Goal Oriented	Autonomous	Specialized	Interactive
Assess and execute tasks to achieve an objective	Act on behalf of a human or with a human-in-the-loop	Specific roles or personas to perform needed tasks	Communicate with humans or agents to get the job done
SPECIFIC CE USE CASE	SPECIFIC CE USE CASE	SPECIFIC CE USE CASE	SPECIFIC CE USE CASE

Agentic AI capabilities are on a spectrum and build upon one another
to enable more sophisticated use cases

GO KART → **RACE CAR**

The democratization of decision intelligence

EMBED

AI enhanced data, content and workflows in the hands of front-line staff enhancing human effort

DATA ↔ **CONTENT** ↔ **WORKFLOWS**

Construction and Engineering Applications

Construction and Engineering Intelligence

EXTEND

Predictive and prescriptive intelligence in the hands of the executive enhancing decision intelligence

Cross Project

Cross Region

3rd party Data

Embedded in the Field: CE AI use case by product

What we're focused on now

Content: Language and Context

Unifier workflow summarization	**Platform File Service** file summarization*
Unifier business process summarization*	**Aconex** mail & document summarization
OPC help document assistant*	**SCP/ Aconex** help document assistant
OPC RFP summarization*	**Aconex** smart metadata *

Workflow: Action taking and Reasoning

|	
Textura compliance review automation	**Unifier** Data visualization graph recommender*
Textura general contractor chatbot	**OPC** schedule generation*
Textura subcontractor chatbot*	**OPC** form designer*
Aconex agentic Mobile chatbot	**Aconex** automatic Configuration

*active development

Extending the Executive: Construction and Engineering Intelligence

PREDICTIVE / PRESCRIPTIVE
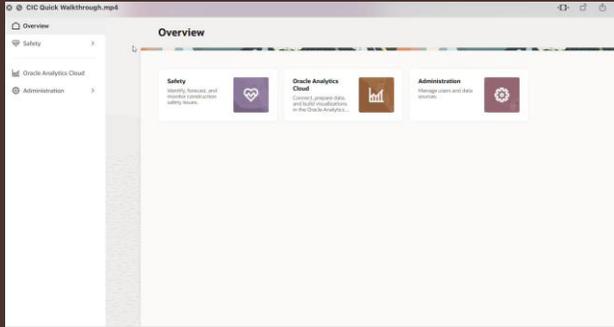
DESCRIPTIVE

Construction and Engineering Intelligence:

Leveraging Oracle technologies for data aggregation, transformation, visualization, and predictive intelligence.
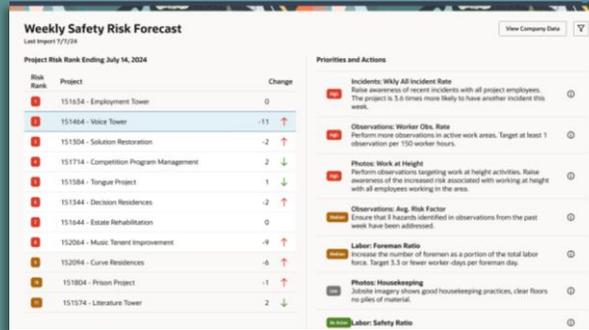
Construction and Engineering Advisor:

AI powered predictive intelligence & recommendation models to proactively optimize the safety

Construction and Engineering Analytics:

AI powered analytics dashboards to track KPIs, trends, identify outliers, providing insight across construction projects.

Leveraging The Oracle Stack For C&E Customers

OCI Native (OCI)   **Autonomous Datawarehouse (ADW)**   **Oracle Analytics Cloud (OAC)**

Managing AI Risk

Data Privacy and Sovereignty

- What data is being sent to third-party or external servers (e.g., cloud-based LLMs)?
- Where is the data stored and processed (e.g., geographic region, compliance with GDPR, HIPAA, etc.)?
- Can we ensure data never leaves our network or VPC?

Model Inputs and Data Leakage

- Is any sensitive or proprietary information used as input to AI models?
- Can we audit or redact the data before it is processed by the AI component?
- Are inputs to the model logged or retained by the vendor?

Model Outputs and Integrity

- How is the accuracy and reliability of the AI output validated?
- Could the AI generate harmful or incorrect outputs (e.g., hallucinations) that impact business decisions?
- What controls are in place to detect or prevent prompt injection or output manipulation?

Model Retraining and Feedback Loops

- Does the vendor use enterprise data to retrain or fine-tune their models?
- Is there any risk of our data leaking into the model corpus used across customers (data poisoning)?

Managing AI Risk

Compliance and Auditability
- Can all AI-related actions and outputs be logged and audited?
- Is the AI component compliant with relevant regulations (e.g., SOX, FedRAMP, ISO 27001)?
- Are third-party sub-processors or model providers disclosed and compliant?

Isolation and Control
- Can the AI functionality be sandboxed or isolated from core systems/data?
- Can we toggle AI capabilities on or off at the feature or user level?
- Can we use our own AI model or endpoint instead of the vendor's default model (BYOM – Bring Your Own Model)?

Trust and Explainability
- Can the AI's decision-making process be explained or justified?
- Does the vendor offer interpretability tools or model explainability APIs?
- Can humans override or verify critical decisions made by AI?

Ongoing Monitoring and Updates
- How often are models and dependencies updated?
- What visibility do we have into changes that may affect behavior or security posture?
- Are updates tested for regressions or new vulnerabilities?

Primavera Unifier with NEC4 Configuration

Compliance, co-operation, and control built on top of the Unifier Accelerator, the out-of-the-box solution is part of a complete and flexible project controls offering.

Forms & Workflows

Access to standard NEC4 contract templates for ECC, ECSC, PSC, PSSC, TSC and TSSC

Alerts & Notifications

Never miss a deadline: auto calculated reply times with notifications and alerts

Dashboards & Reports

Comprehensive out-of-the-box dashboards & reports for cost, time and quality

Contract Cost

Detailed cost breakdown for activity, schedule, BoQ, compensation events and payments

Flexibility X,Y,Z Clauses

Update clause dropdowns and response times from the admin section on each contract

Portfolio Management

Manage contracts at the contract, project, and portfolio levels

Integrations

Dashboards

Reporting

NEC4

Forms & Workflows

Contract Cost

Alerts & Notifications

Flexibility & X,Y,Z Clauses

Dashboards & Reports

Portfolio Management

The C3 difference

Connected, Coherent, Controls

C3 is a **pre-configured** set of **best-practice** business processes and **integrated data structures** across **P6**, **OPC**, **Unifier** & **CEI** deployed for customers simultaneously via pre-integrated environments.
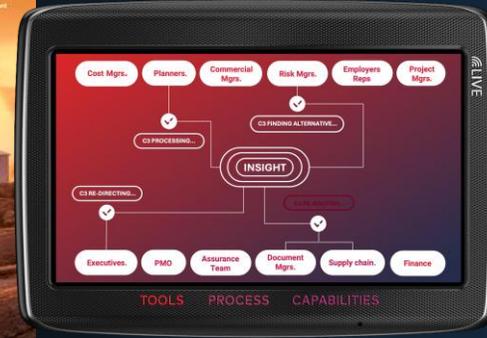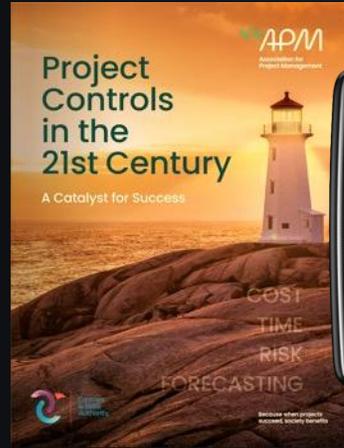
Sat-Nav for Projects – re-route easily when blocked

**Fully Integrated Systems** – no silos, seamless data flow

Next Gen Insights (CEI) – real-time answers on cost, risk, schedule

Better Estimates + Better Execution – tackles top 5 causes of failure

Rapid Deployment – from pilot to enterprise roll-out in 3–12 months

Scalable Impact – projects, portfolios and mega-programmes

People-First Adoption – adaptive training & role-based support
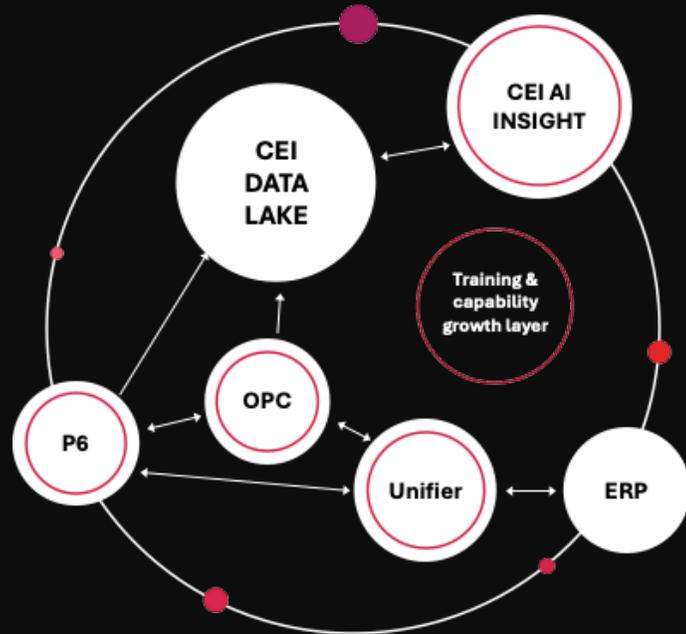
th3rdcurve | ORACLE

Breaking the cycle of project failure

Connected by design – best practice tools & process across your projects

Deployed rapidly, can be piloted on your projects within a matter of months

Generates precise data & insights – going beyond BI

Supports and trains your teams to be and feel better in their roles – Amplifying your teams' capabilities

UK Government & Defence Cloud (OC4)

- Two distinct, geographically separated regions make the UK Realm

- The two regions are interconnected via a highly resilient, private high-speed backbone.

- Dedicated to UK Government & Defence this Realm is accessible to Only UK Government and associated entities, as listed by Crown Commercial Services (CCS)

- All Oracle privileged access (both physical and logical) are restricted to UK Citizens, residents, and present in the UK with SC Clearance

Region # 2   Region # 1

■ Government Cloud Region   ■ Commercial Cloud Region

The realm supports the following UK, EMEA and UK Government specific compliance standards

Region Availability	Available	Available
Realm	OC4	OC4
Region Code	LTN	BRS
Region Identifier	uk-gov-london-1	uk-gov-cardiff-1
Canonical Name	UK Gov South (London)	UK Gov West (Newport)

Oracle Industry Innovation Labs

Chicago, **USA**

**Construction from
Owners & Builders perspective**

Construction immersion experiences leveraging Oracle products and 39 Innovation Partners

Sydney, **AU**

**Ecosystem Collaboration across
Safety, Compliance, Productivity**

5 Ecosystem immersion experiences

Customer visit scheduling has begun

Reading, **UK**

Sustainability, Multimodal

Focus on transportation, linear construction, and sustainability, including 18 Innovation partners

Potential Productivity Improvements from AI in Construction

Area	Example AI Application	Estimated Productivity Improvement (%)
Project Planning & Scheduling	Automated scheduling, risk mitigation	10–20% faster project delivery
Design & Engineering	Generative design, BIM clash detection	15–30% reduction in rework/delays
Site Operations & Safety	Drones, safety monitoring	10–20% fewer safety incidents; 10–15% time savings on inspections
Supply Chain & Resource Mgmt.	Material forecasting, inventory management	5–10% reduction in material waste
Administrative Efficiencies	Document management, contract analysis	20–30% reduction in admin workload
Quality Assurance	Image recognition for defects, predictive maintenance	10–20% reduction in errors and downtime
Collaboration & Knowledge Mgmt.	AI assistants, knowledge capture	10–15% savings in time searching for info and onboarding