ORACLE

The future of Generative AI in Oracle Construction & Engineering

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AI is a hot topic

- **Chat GPT fastest product to 1M users in history**

ChatGPT Sprints to One Million Users

Time it took for selected online services to reach one million users

Service	Launched	Time
Netflix	1999	3.5 years
Kickstarter*	2009	2.5 years
Airbnb**	2008	2.5 years
Twitter	2006	2 years
Foursquare***	2009	13 months
Facebook	2004	10 months
Dropbox	2008	7 months
Spotify	2008	5 months
Instagram***	2010	2.5 months
ChatGPT	2022	5 days

* one million backers   ** one million nights booked   *** one million downloads
Source: Company announcements via Business Insider/Linkedin

statista

AI is a hot topic

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- Making the cover of business week: Will it kill us all?

Businessweek
June 19, 2023

OK, Computer

Welcome to the AI revolution, Silicon Valley's latest world-changing obsession

AI is a hot topic

- **Chat GPT fastest product to 1M users in history**

- **Making the cover of business week: Will it kill us all?**

- **Oracle's best quarter ever thanks to... AI**

BARRON'S

TECHNOLOGY | EARNINGS REPORT

Oracle Stock Extends Its Rally. Earnings Got a Boost From AI.

By Eric J. Savitz Follow Updated June 12, 2023 6:00 pm ET / Original June 12, 2023 1:00 am ET

"Oracle's Gen2 Cloud has quickly become the number 1 choice for running Generative AI workloads,"
Oracle Chairman and CTO, Larry Ellison, Q4 FY23 Results

AI is a hot topic

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- Oracle's best quarter ever thanks to… AI

- **And… AEC executives are focused on it…**

Figure 9: Industry executives' perception of the future landscape (within 5 years)
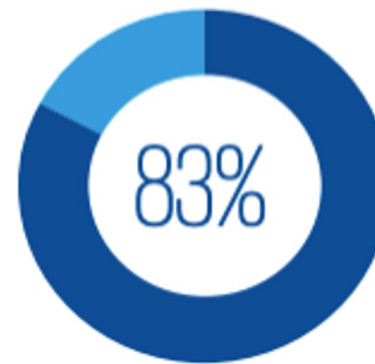
83% Feel organizations will be data-driven, including routine use of data analytics and predictive modeling for project planning and monitoring

KPMG
Future-Ready Index
Leaders and followers in the engineering & construction industry
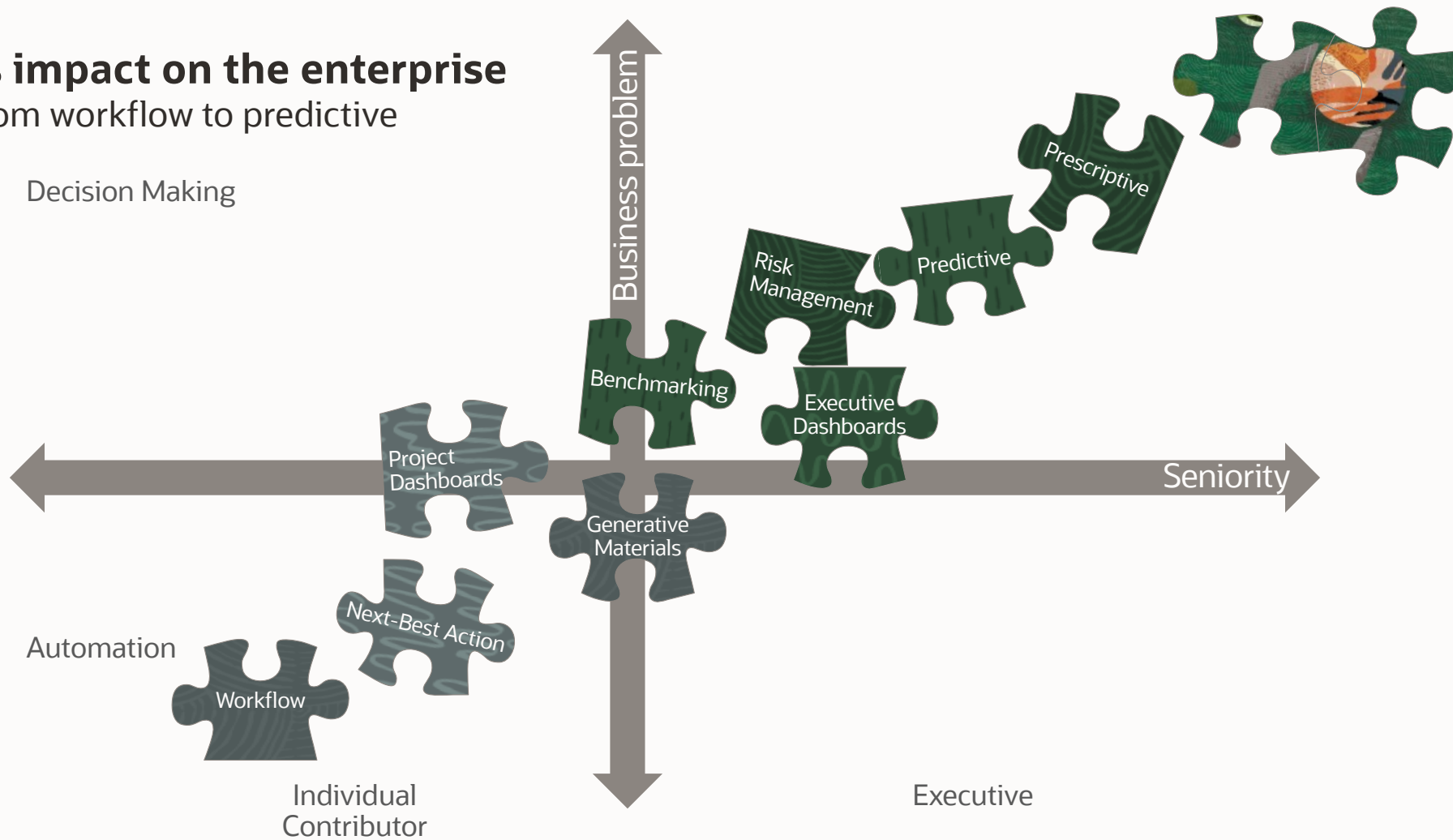Global Construction Survey 2019

But what is "AI"
For enterprise?

Because AI isn't just one thing...

There are many uses...

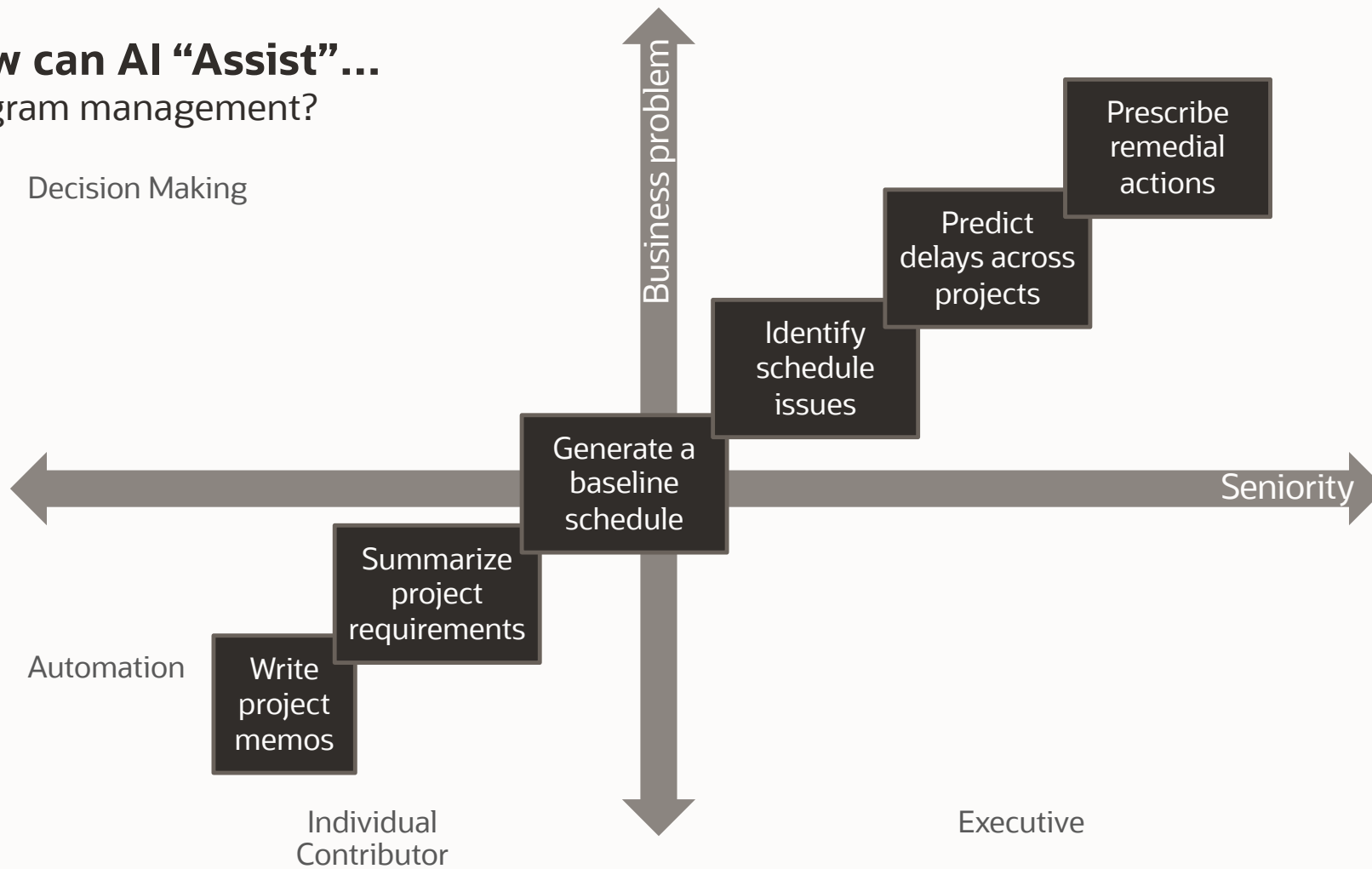**AI's impact on the enterprise**
is from workflow to predictive

Decision Making

Business problem

Seniority

Benchmarking

Risk Management

Predictive

Prescriptive

Project Dashboards

Executive Dashboards

Generative Materials

Automation

Next-Best Action

Workflow

Individual Contributor

Executive

How can AI "Assist"…
Program management?

Decision Making

Business problem

Automation

Seniority

Prescribe remedial actions

Predict delays across projects

Identify schedule issues

Generate a baseline schedule

Summarize project requirements

Write project memos

Individual Contributor

Executive

But is AI an existential threat?
Well… let's ask AI, is it a Chihuahua or a Muffin?

Source: https://www.metamaven.com/chihuahua-vs-muffin-comparison-computer-vision-apis/

Yes, but AI beats humans at specific tasks!
Let's look at chess… Grandmasters + AI beat AI alone

After chess-playing AI programs became widely available, the combination of humans and chess-playing programs performed better than either did individually.

Forbes, 1/7/2022: Why Computer-Assisted Humans Are The Best Chess Players And What That Means For Technology Operations

Our mission is to help people see data in new ways, discover insights, unlock endless possibilities.

And Oracle is best positioned to deliver on the potential of AI for E&C

It's our overall mission…
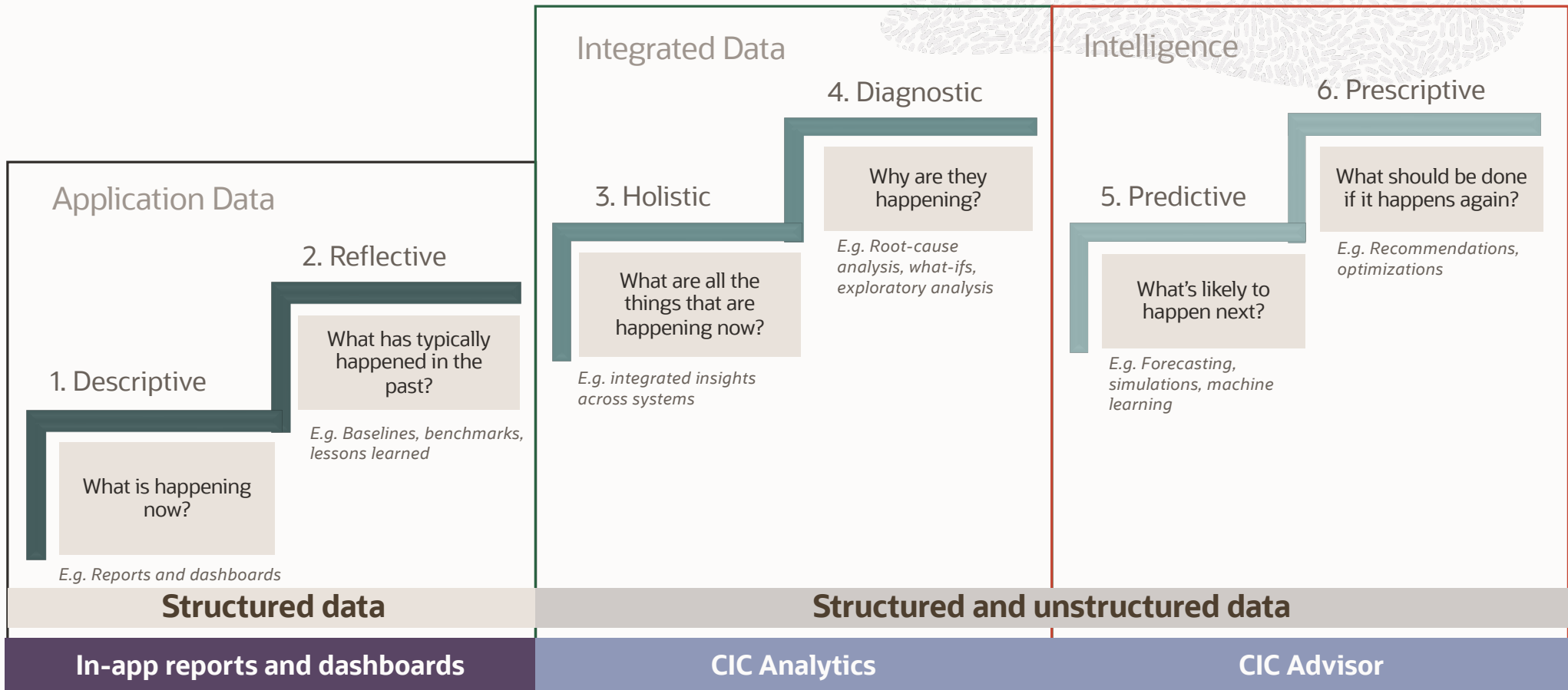
Oracle's market-leading analytics and AI products

Tuned for construction and capital project delivery

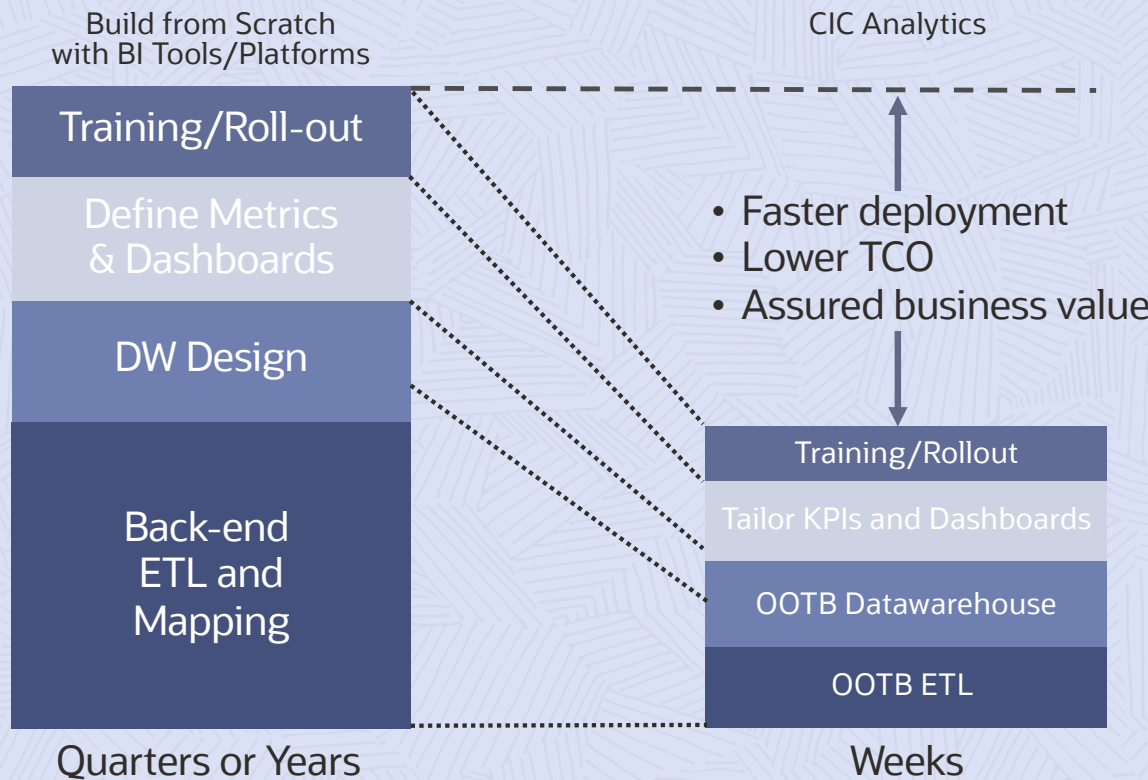Built with Oracle's military-grade security and privacy

ORACLE
INTEGRATION CLOUD

ORACLE
ORACLE ANALYTICS CLOUD

DISA
DEFENSE INFORMATION SYSTEMS AGENCY
The IT Combat Support Agency

The Data and Intelligence Journey

Application Data

1. Descriptive

What is happening now?

E.g. Reports and dashboards

2. Reflective

What has typically happened in the past?

E.g. Baselines, benchmarks, lessons learned

Integrated Data

3. Holistic

What are all the things that are happening now?

E.g. integrated insights across systems

4. Diagnostic

Why are they happening?

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

Intelligence

5. Predictive

What's likely to happen next?

E.g. Forecasting, simulations, machine learning

6. Prescriptive

What should be done if it happens again?

E.g. Recommendations, optimizations

Structured data

Structured and unstructured data

In-app reports and dashboards

CIC Analytics

CIC Advisor

We already have Power BI/Tableau/Qlik/etc.

Build from Scratch
with BI Tools/Platforms

CIC Analytics

| Training/Roll-out |
| Define Metrics & Dashboards |
| DW Design |
| Back-end ETL and Mapping |

Quarters or Years

- Faster deployment
- Lower TCO
- Assured business value

| Training/Rollout |
| Tailor KPIs and Dashboards |
| OOTB Datawarehouse |
| OOTB ETL |

Weeks

Faster Time to Value and a Lower Cost of Ownership

- ~ 1+ years of development effort to design the DW/DL
- Requires a SQL developer(s), Business Analyst(s), BI platform/tool administrator(s)
- Dashboard/report requirements are constantly changing requiring changes to the DW/DL
- Costs lots of time and money to plan, design, build and maintain

Construction Intelligence Cloud

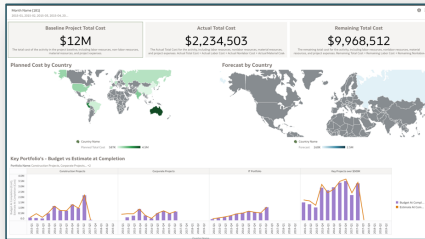**Insights and intelligence**

CIC Analytics	CIC Advisor	CIC Newmetrix
Descriptive Analytics	**AI-Powered Prescriptive / Predictive Intelligence**	
Pre-built data connectors & dashboards to track project performance	Predict delays to reduce schedule & workflow risk	Monitor projects to reduce safety risks & predict incidents

Lobby and application switcher

Primavera Portfolio	Pre-construction	Unifier	Primavera Schedule	Aconex	Textura	Other data sources and applications

Platform Services

Oracle Cloud Infrastructure

Construction Intelligence Cloud - Analytics
Pre-built data connectors & dashboards to track project performance
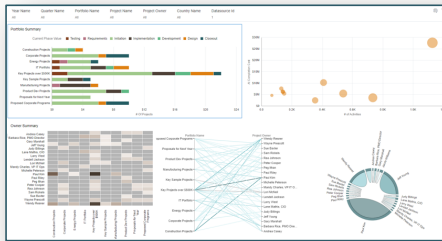
Portfolio Analysis
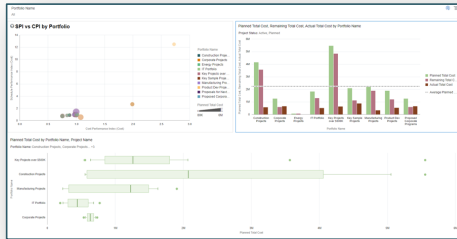
Project Performance

Schedule and Cost KPIs

Descriptive Analytics

Common Data Environment

Primavera P6 EPPM, Primavera Cloud, Unifier, Aconex, 3rd Party Applications

Construction Intelligence Cloud – Advisor: Schedule
Predict delays to **reduce schedule risk**
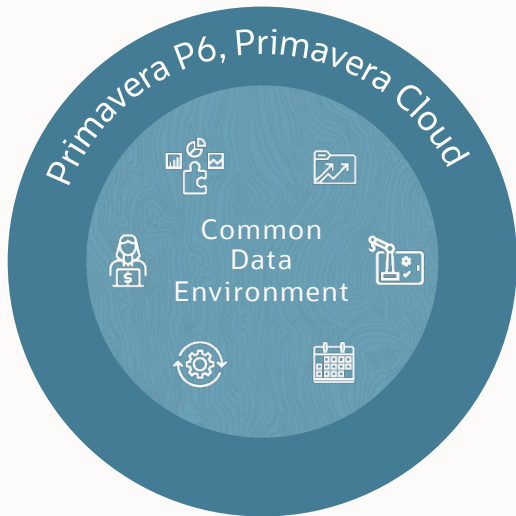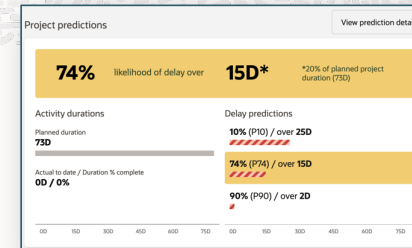
Predict delays and prevent schedule overruns

Primavera P6, Primavera Cloud

Common Data Environment

AI-Powered Predictive & Prescriptive Intelligence

Learn from the past, apply it to the present

Re-train models suited to your organization

Construction Intelligence Cloud – Advisor: Workflow
Predict delays to **reduce workflow risk**
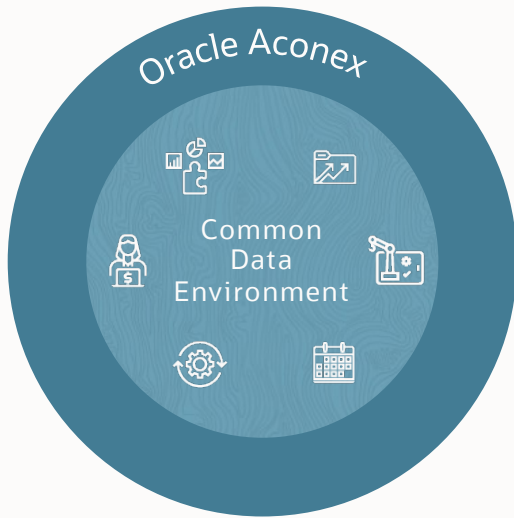
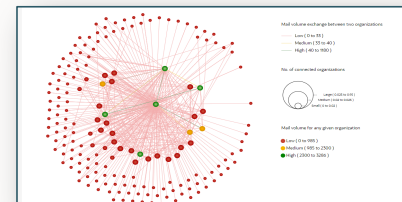Identify potential litigation or disputes and take corrective actions
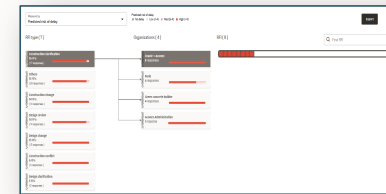
RFI delay predictions

Identify supply chain bottlenecks and downstream impacts

Oracle Aconex

Common Data Environment

AI-Powered Predictive & Prescriptive Intelligence
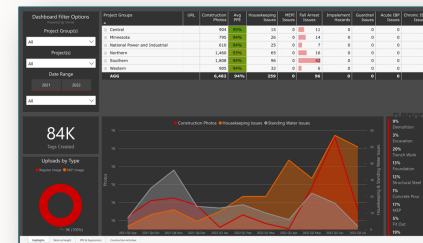
Construction Intelligence Cloud – Newmetrix: Safety
Monitor projects to **reduce safety risks & predict incidents**
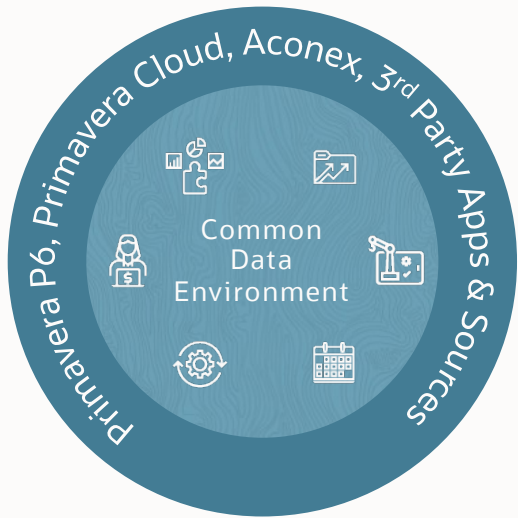
Safety monitoring uses computer vision AI to identify safety risk trends
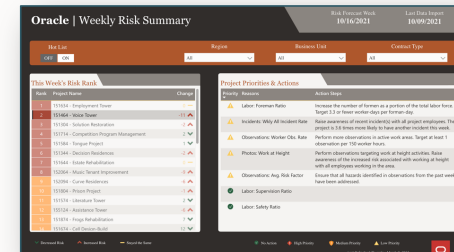
Predictive analytics ranks projects weekly by safety incident risk

Primavera P6, Primavera Cloud, Aconex, 3rd Party Apps & Sources

Common Data Environment

AI-Powered Predictive & Prescriptive Intelligence

PROCORE   AUTODESK   SharePoint
StructionSite   box   EGNYTE

Predictive-Based Safety (PBS) Connects Analytics to Action

📊 INSIGHTS	👷 ACTION	💲 LOSS REDUCTION
Identify the riskiest projects.	Take specific actions to reduce identified risks.	Reduce incident rates and resultant losses.
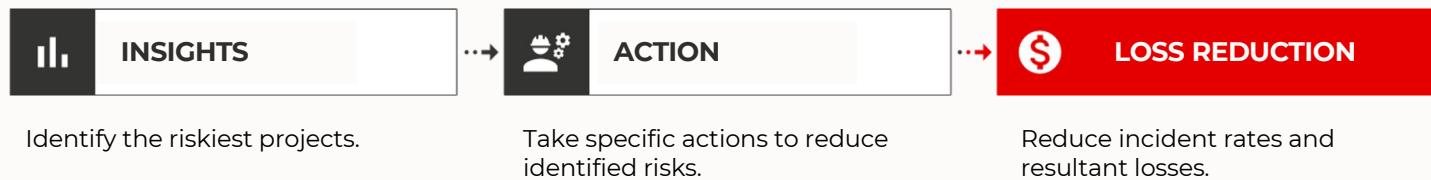
Newmetrix predictive models are able to identify which...

20%
...of your active projects will have over...

80%
...of your incidents...

Know **Where** to Focus Your Attention
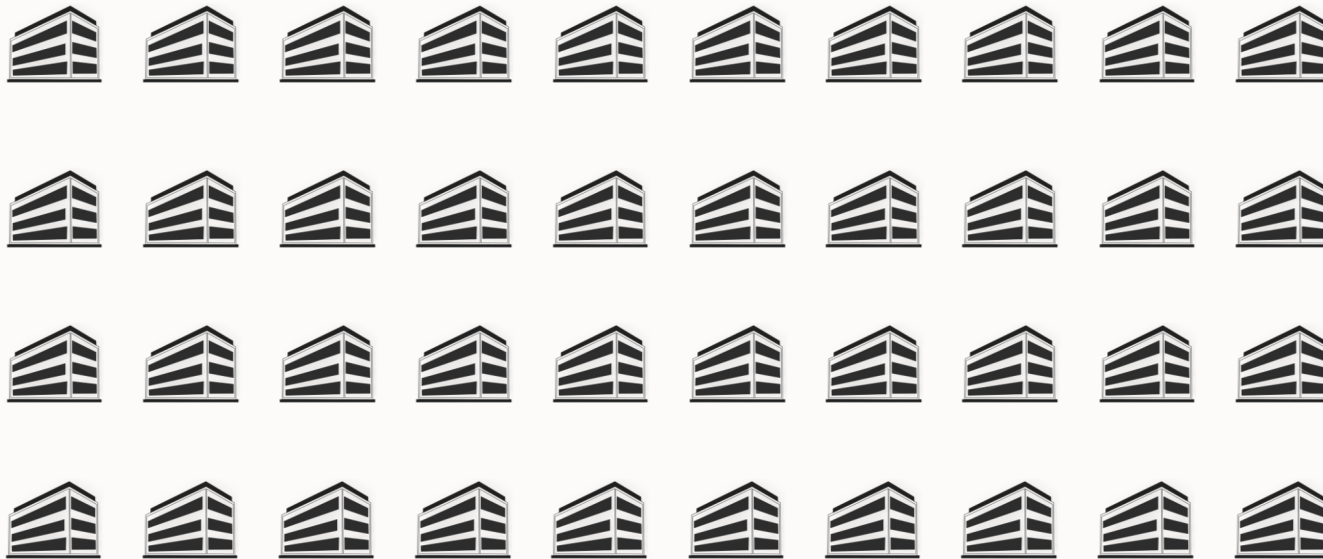
Focus on the Riskiest Projects

Oracle | Weekly Risk Summary

Hot List	Region	Business Unit	Contract Type
OFF ON	All ⌄	All ⌄	All ⌄

This Week's Risk Rank

Rank	Project Name	Change	
1	151634 - Employment Tower	0	—
2	151464 - Voice Tower	-11	⌃
3	151304 - Solution Restoration	-2	⌃
4	151714 - Competition Program Management	2	⌄
5	151584 - Tongue Project	1	⌄
6	151344 - Decision Residences	-2	⌃
7	151644 - Estate Rehabilitation	0	—
8	152064 - Music Tenant Improvement	-9	⌃
9	152094 - Curve Residences	-6	⌃
10	151804 - Prison Project	-1	⌃
11	151574 - Literature Tower	2	⌄
12	155124 - Assistance Tower	-6	⌃
13	151874 - Frogs Rehabilitation	7	⌄
14	151674 - Cell Design-Build	12	⌄

Project Priorities & Actions

Please select a project from the list to the left.

⌄ Decreased Risk   ⌃ Increased Risk   — Stayed the Same

✓ No Action   ❗ High Priority   ❗ Medium Priority   ⚠ Low Priority

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13	151874 - Frogs Rehabilitation	7	⌄
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Project Priorities & Actions

Priority	Reasons	Action Steps
❗	Labor: Foreman Ratio	Increase the number of formen as a portion of the total labor force. Target 3.3 or fewer worker-days per forman-day.
❗	Incidents: Wkly All Incident Rate	Raise awareness of recent incident(s) with all project employees. The project is 3.6 times more likely to have another incident this week.
🛡	Observations: Worker Obs. Rate	Perform more observations in active work areas. Target at least 1 observation per 150 worker hours.
⚠	Photos: Work at Height	Perform observations targeting work at height activities. Raise awareness of the increased risk associated with working at height with all employees working in the area.
⚠	Observations: Avg. Risk Factor	Ensure that all hazards identified in observations from the past week have been addressed.
✅	Labor: Supervision Ratio	Increase employee presence on the project. Target 1 employee for every 14 worker-days (max).
✅	Labor: Safety Ratio	Increase the presence of safety staff on the project. Target a minimum of 1 safety rep. hour for every 6 worker-days reported on manpower logs (max).

⌄ Decreased Risk   ⌃ Increased Risk   — Stayed the Same

✅ No Action   ❗ High Priority   🛡 Medium Priority   ⚠ Low Priority

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And one more thing…

Press Release

Oracle to Deliver Powerful and Secure Generative AI Services for Business

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Oracle is uniquely positioned to deliver generative AI services spanning applications to infrastructure that help businesses solve today's most complex challenges

Oracle partners with Cohere to provide generative AI services

Austin, Texas—June 13, 2023

Oracle today announced its plans to develop powerful, generative AI services for organizations worldwide. Oracle will provide native generative AI services to help organizations automate end-to-end business processes, improve decision-making, and enhance customer experiences, in collaboration with Cohere, a leading AI platform for enterprise. Built on Oracle Cloud Infrastructure (OCI) and leveraging Oracle's unique Supercluster capabilities, Oracle generative AI services will span applications to infrastructure and aim to provide the highest levels of security, performance, and value in the industry.

Add Schedule

Add a schedule to track your work.

Add a schedule to ensure activities and tasks are well-coordinated.

Try Schedule AI Assist

Potential next steps on the Analytics and AI journey

	1) CIC Analytics	2) Newmetrix Predictive Safety	3) CIC Advisor Predictive Schedule	4) Strategic Collaboration
Action	Implement Analytics dashboards	Predictive Data Health Check	Early Access Program (EAP)	Join the Analytics and AI Working Group
Deliverable	• Software deployment tied into your Oracle data sources • Pre-built templates for key views and aggregate reports	• Benchmark report on data and safety metrics • Working predictive safety model & dashboard or • Working benchmark dashboard	• Schedule data review • Access to schedule predictive analytics • Analysis of your schedule data by area (configurable)	• Quarterly discussions • Review and provide input on product direction • Discuss advances in analytics amongst peers (2x year)

5) And now, Generative AI consulting projects with Oracle partner Cohere