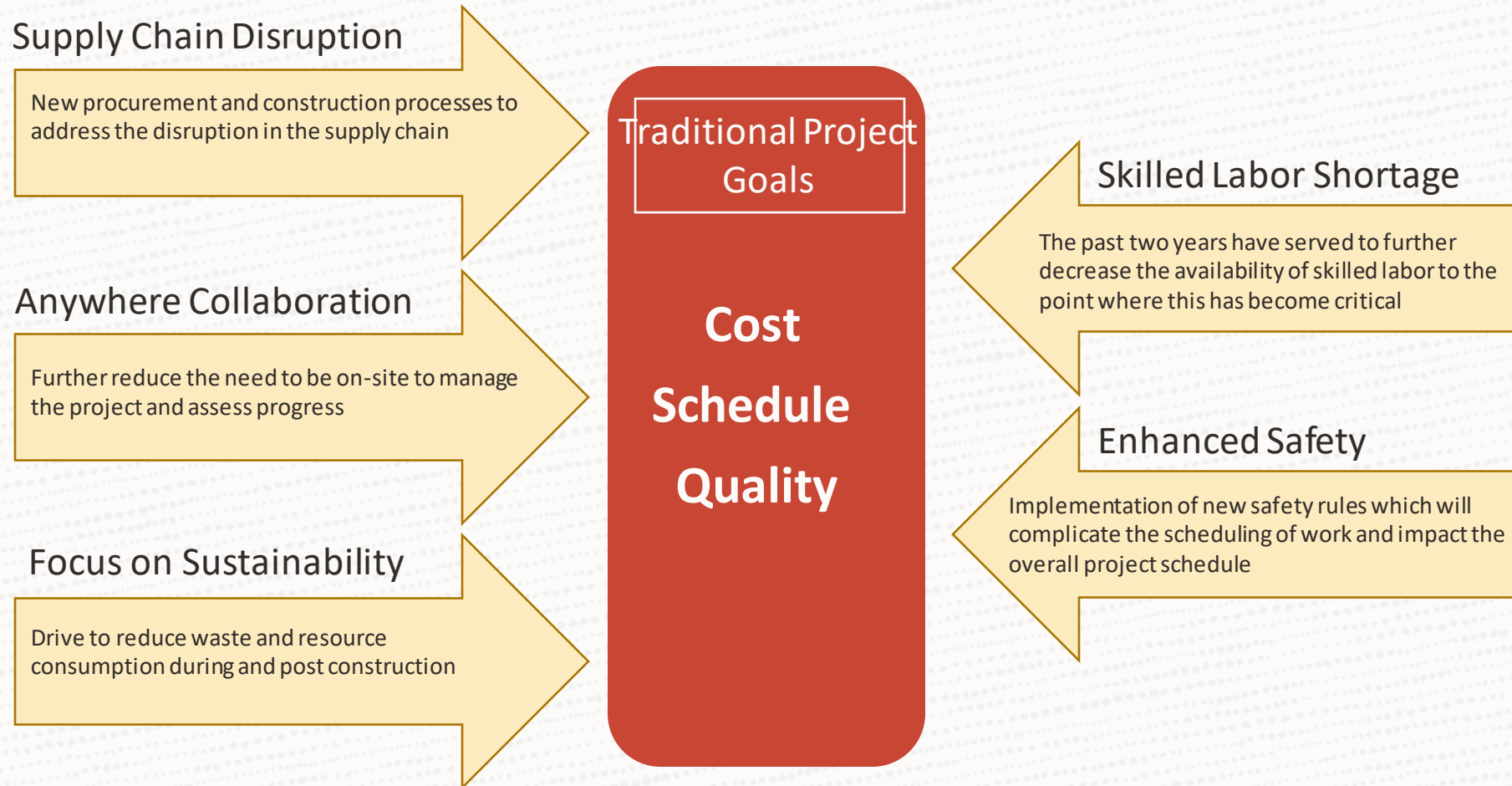




## How Construction Tech adds to effective decision making



# Forces driving technology change within the Construction Industry



# Industry innovation trends confronting the industry

## Align Trends to Technology



### Digital Twin

Adding a spatial dimension to most transactions and processes in the Plan-Build-Operate lifecycle

- BIM
- Model coordination
- xD scheduling
- VR/AR



### Digital field management

Move previously paper-based or siloed procedures to end-to-end connect processes

- Trusted CDE
- Mobility
- IoT
- AR



### Digital progress measurement

Capture and digitally share project progress across the extended team

- Drones
- Jobsite reality
- Autonomous equipment
- VR/AR



### Health & Safety

Always a focus, COVID as increased the urgency and complexity of delivering on worker safety

- Facility visualization
- Wearables/IoT
- Autonomous equipment
- Off-site construction
- Connected tools



### Productivity improvement

Increase the output of the jobsite and office workers

- BIM
- IoT
- Off-site construction
- Connected tools



### Resource & supply chain management

Increase the availability, reliability, quality of resources and materials on the project

- Predictive analytics
- Integrated procurement
- IoT Platform
- Trusted CDE
- 5G



### Project optimization

Improve the ability to deliver on schedule and within budget.

- Predictive analytics
- Integrated platform
- IoT Platform
- xD Scheduling



### Sustainability

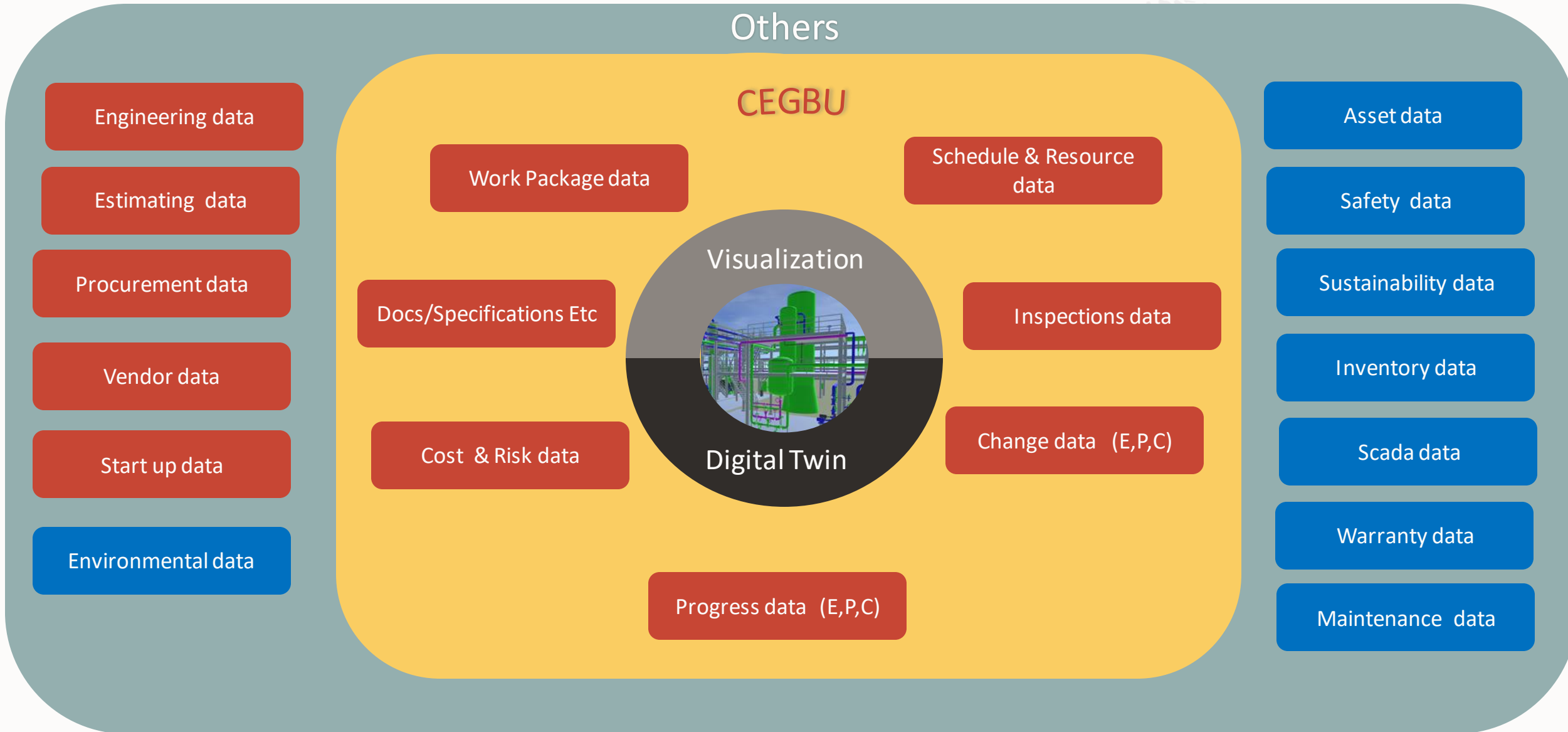
Apply green technology and techniques both during construction and during post-construction facility management

- IoT sensors
- Modular construction
- Electric equipment





# The Typical Asset Lifecycle data problem ....



# The Evolving World Of Platforms

## Point Solutions Solved Targeted Pain Points

- ✓ Basic Efficiencies
- ✓ Std Workflows



Individuals &  
Departments

## First Gen Platforms Connected Teams

- ✓ Faster Decisions
- ✓ Fewer Errors



Project  
Teams

## Intelligent Platforms Empower & Synchronize

- ✓ Unlock Data
- ✓ Automate Processes



Highly Responsive  
Ecosystems



# NOT ALL ORGANIZATIONS ARE THE SAME. WHAT'S THE RIGHT LEVEL OF SOPHISTICATION FOR YOUR CUSTOMER?

## INCREASING BENEFITS PROFILE

- Lower TCO
- Agile / Lean Operations
- Lower Risk Profile
- Insight Driven



**MANUAL**

- Spreadsheets & office-based products
- Manual processes



**SILOED**

- Organization-centric systems
- Basic file transfer for "collaboration"
- Manual processes



**FORMATIVE**

- Collaboration limited to key parties on projects
- Docs & correspondence captured in common environment
- Most processes isolated to a single platform



**ADVANCED**

- Neutral, cloud platform with adoption across all project participants
- Common data structure
- Support for Mobile & BIM
- Processes measured for efficiency gains & early warning to bottlenecks



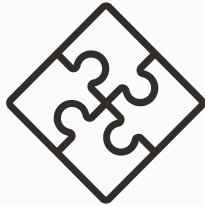
**TRANSFORMING**

- Data-centric platform with focus on process performance & project consistency
- Lead and lag indicators are tracked across the project life cycle
- Benchmarking and analytics drive process innovation and adaptation



# Oracle Smart Construction Platform

Drive performance, predictability, continuous improvement



## Connect

Teams are **connected** across processes and data



## Empower

Team members are **empowered** with data and intelligence to make informed, proactive decisions



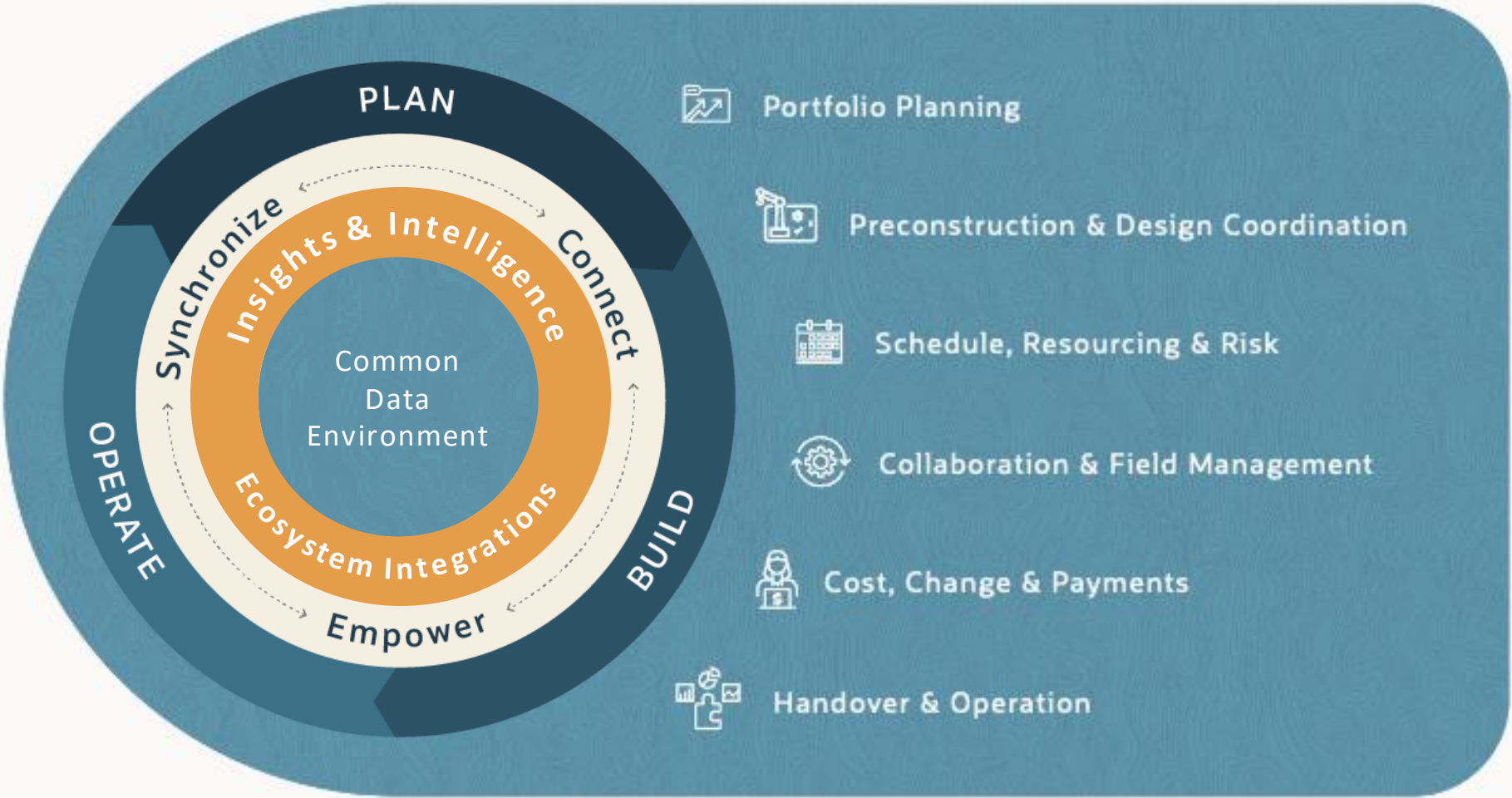
## Synchronize

Activities, people, and resources are **synchronized** throughout the project lifecycle



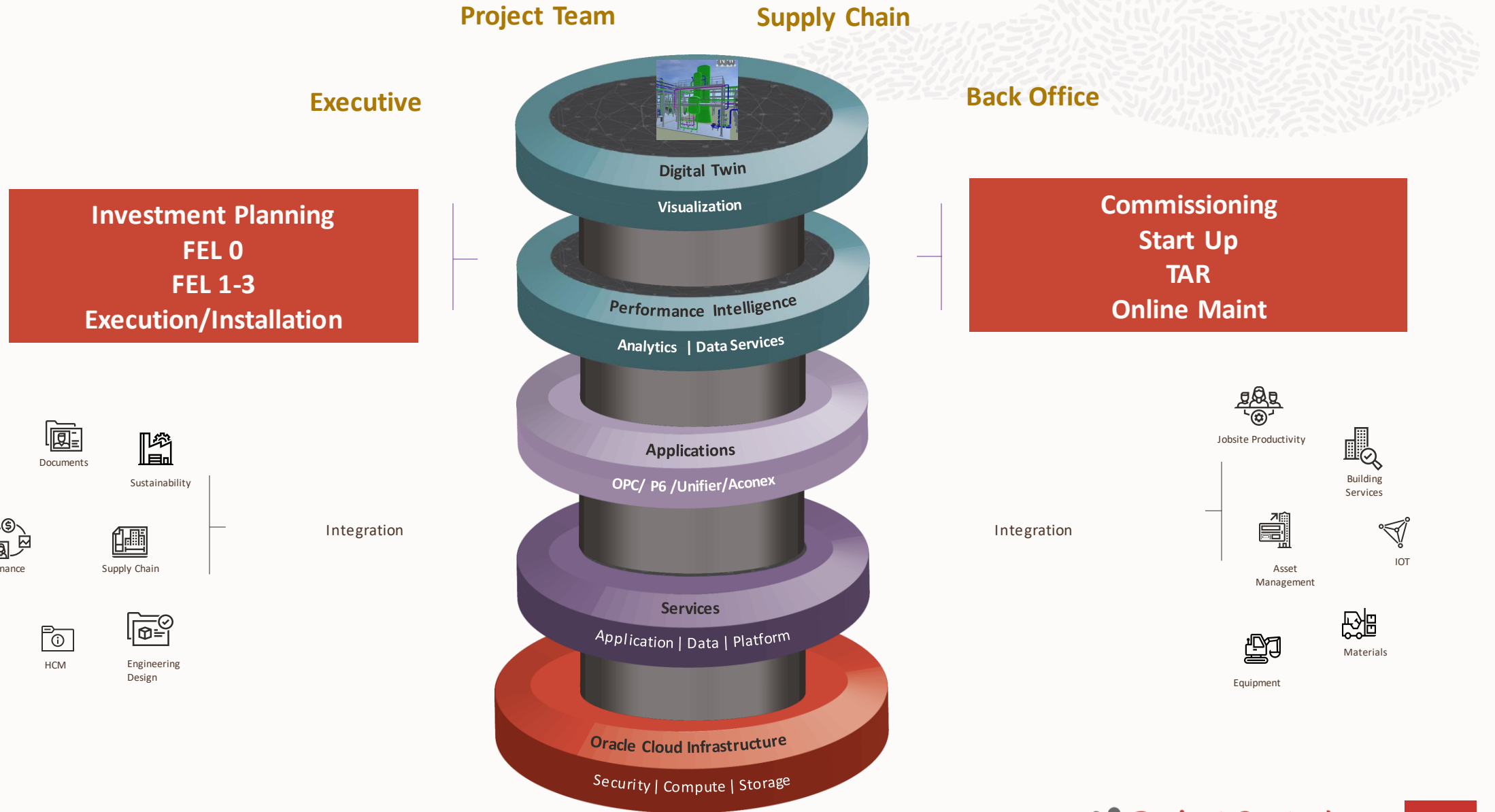
# Oracle Smart Construction Platform

New platform capability





# Smart Construction Platform



# Smart Construction Platform



The Lobby

Application Switcher

A square icon with a brown wood-grain texture. The word "Aconex" is centered at the bottom in white text.

Aconex

A square icon with a green wood-grain texture. The text "Textura Payment Management" is centered at the bottom in white text.

Textura Payment Management

A square icon with a purple wood-grain texture. The text "Primavera P6 & Primavera Cloud" is centered at the bottom in white text.

Primavera P6 & Primavera Cloud

A square icon with a grey background and a pattern of small black dots. The text "Unifier Essentials" is centered at the bottom in white text.

Unifier Essentials

A square icon with a dark blue background and a pattern of white lines forming a network or map. The text "Preconstruction" is centered at the bottom in white text.

Preconstruction

Application Integrations

Aconex – Primavera Cloud (Schedule)

Unifier – Primavera Cloud (Cash Flow)

Construction Intelligence Cloud

CIC Analytics

CIC Advisor



# Oracle Smart Construction Platform

Drive performance, predictability, continuous improvement

## Applications

- Owners & Delivery Teams
- Global best of breed
- Partner network



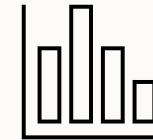
## Interoperability

- Optimized re-engineered process
- OOTB integrations



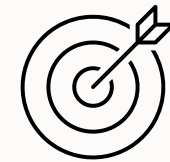
## Data & Technology

- Designed for data
- State of the art technologies

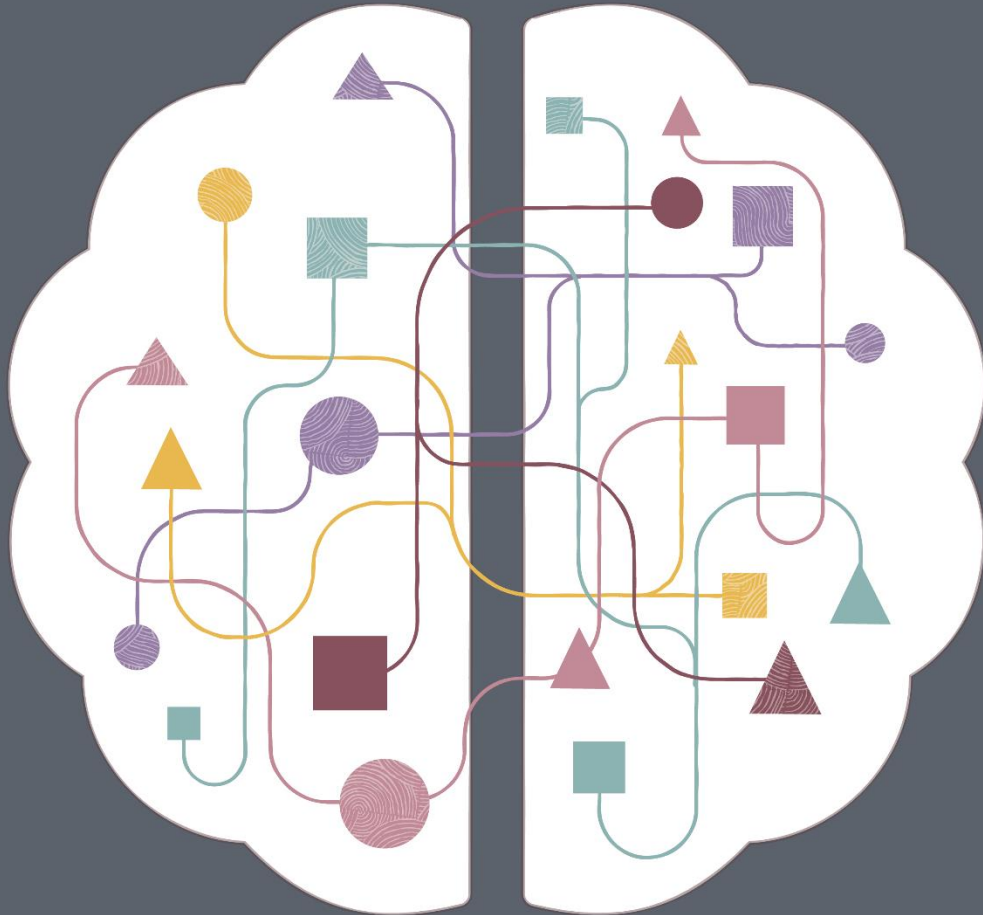


## Enterprise Impact

- Enable enterprise digitalization
- Innovation labs & ecosystem
- Security & performance



# Oracle Industries Innovation Lab Mission



Enable Oracle to **collaborate** with **customers** and **partners** across industries to co-innovate, experiment, and bring to life the power of transformative technologies.



26-09-2022 Mon 10:54:23





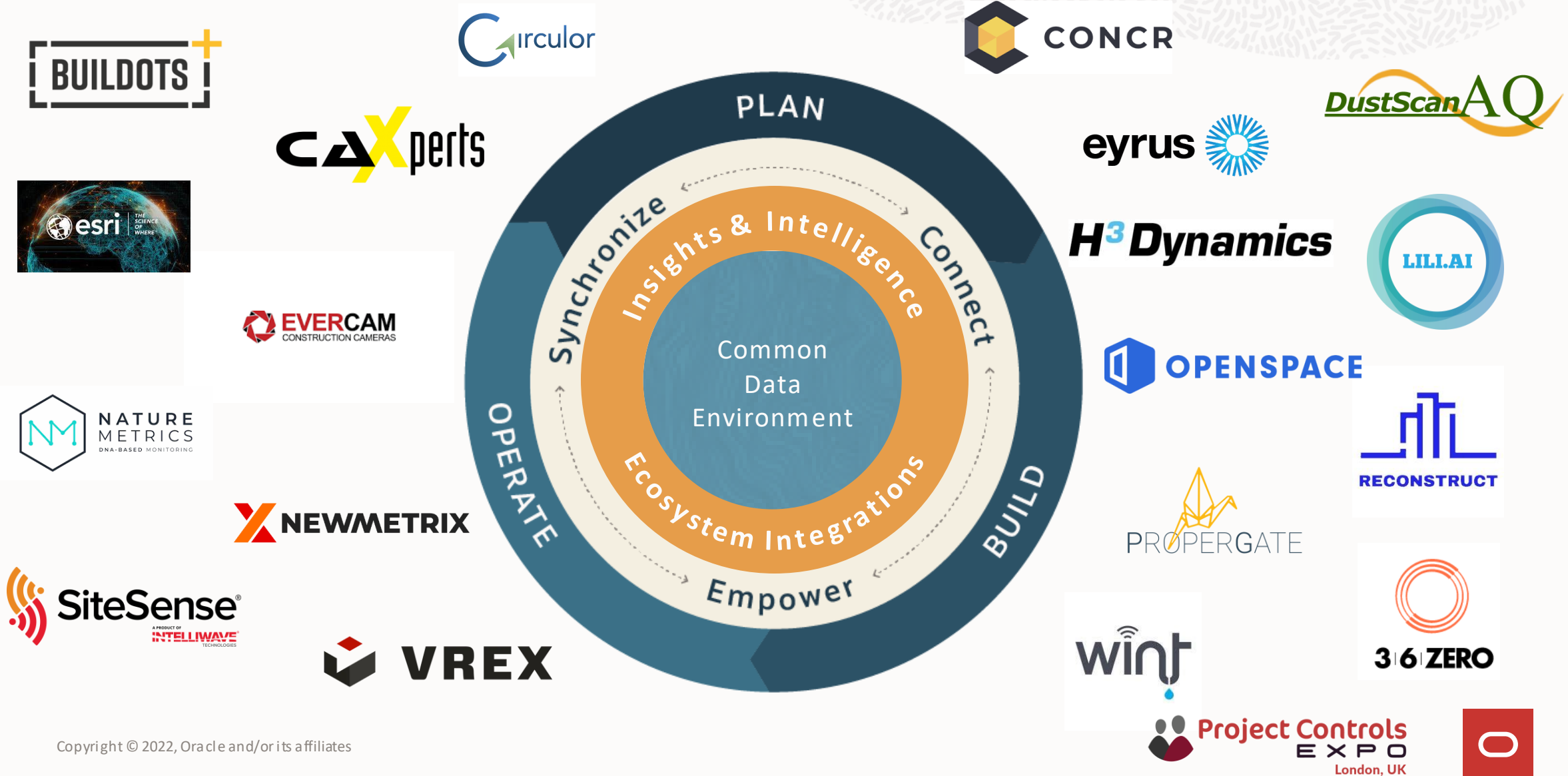
26-09-2022 Mon 11:53:19







# Oracle Innovation Approach





# ORACLE Industry Lab



# Sustainability Data ...

## Last mile logistics (Sustainability)

How material delivery and control can be effectively managed within a construction environment ensuring last mile logistics and sustainability etc

ORACLE Primavera P6 EPPM



## Biodiversity (Sustainability) a challenge to project moving forward

How biodiversity and its impact on an organisations ESG commitments . Both water and soil DNA tracing



## Carbon management (Sustainability) at the Project level

How carbon management can be applied across the construction lifecycle, tracking materials from inception to installation . In addition to tracking individual scope 1,2 & 3 emissions

ORACLE  
Primavera  
Unifier



## Real time air quality management (Sustainability)

Air quality monitoring can influence the sustainability metrics of the project, satisfy regulatory conditions and can also provide clear health & safety alerts to both the Site based delivery teams and external stakeholders

ORACLE  
Primavera  
Unifier



## Water leak management in construction & operations

How WINT's system detects and stops leaks at the source and in real-time, using artificial intelligence, advanced data analysis and pattern recognition.

ORACLE  
Primavera  
Unifier



# IoT Data ...

## Worker tracking for safety and security

Incorporating multiple form factors of IoT sensors provides flexibility when focused on capturing and managing worker tracking data. Learn the benefits of these multiple form factors for validating project performance, tracking compliance and ensuring worker safety.

**ORACLE** Primavera P6 EPPM



## Real time individual health and safety

Real time safety information , in addition to personnel utilisation within virtual zones .

**ORACLE**  
Primavera  
Unifier



## Managing the end-to-end supply chain

These days finding ways to improve the supply chain transparency is more critical than ever before. See how technology can be applied to improve the management of the full supply chain through delivery lifecycle for materials. Then, once the material is on-site it can be easily located for installation

**ORACLE**  
Primavera  
Unifier



# Data Visualisation ...

## Next generation project scheduling and risk management through applying spatial technology and AI/ML

For decades Oracle Primavera has been the leader in tools to manage complex schedules. In this experience Oracle's next generation scheduling tools for CPM, and lean scheduling and traditional risk management is introduced. Then, by visually the schedule spatially we show how non-obvious risks can be quickly identified. Finally AI/ML tools are applied to predict additional issues with the schedule.

**ORACLE**  
Primavera Cloud



## Construction management using 3D

See how understanding project issues and their speed to resolution can be improved through a tight connection between model visualization and the project controls application.

**ORACLE**  
Primavera  
Unifier





# Reality Data ...

## Next generation progress and quality management

Learn how the model, jobsite reality, and the project master schedule can be digitally combined to visualize project progress as compared to the plan and how the as-built aligns to the design intent.

**ORACLE**  
Aconex

**ORACLE**  
Primavera Cloud

**RECONSTRUCT**

## Fully automated progress tracking through AI computer vision

AI-based computer vision platform enables project teams to know what is happening on-site at all times by tracking progress automatically. A wearable 360 camera tracks each task and element including progress tracking, payments validation, and schedules.  
Robots.

**ORACLE** Primavera P6 EPPM

**BUILDOTS**

## Digital subcontractor draw management and validation

The subcontractor draw request process can be complex and time consuming. See how technology is applied to manage the overall process, ensure compliance, and through the use of jobsite reality quickly validated.

**ORACLE**  
TEXTURA

**OPENSOURCE**

## Real time project vision

See how the ability to bring all of a project reality capture solutions into one platform, along with their BIM model, that communicates with Aconex for project site documentation, and also uses A.I. to track all all Gate traffic onsite.

**ORACLE**  
Aconex

**EVERCAM**  
CONSTRUCTION CAMERAS

# Other Data ...

## Autonomous Drones in Project and operation management

How drones can be influential in both progress etc within capital projects, and maintenance work order support within operations. Applicable to both Vertical high rise and linear projects



## Digital twin, collaborative design and as-built reviews using VR

Learn how through the use of immersive virtual reality technology connected to the industry's leading project controls applications project teams from geographically dispersed locations can come together, easily identify design and/or as built issues and manage their resolution



## NLP related to Projects

How NLP can be used against not only project documentation but also project emails to create alerts on subjects such as delay, litigation, risks etc

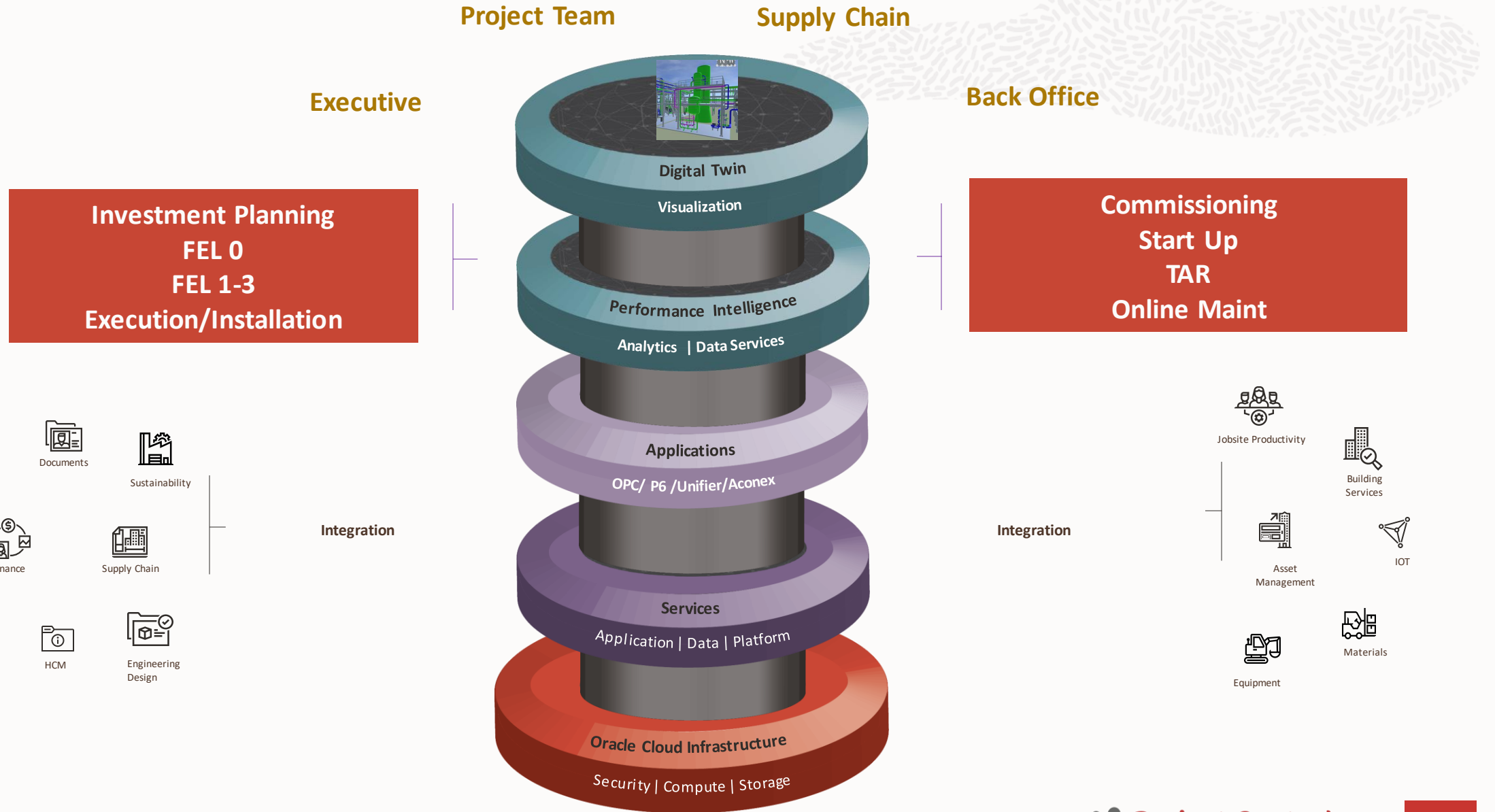


## Optimized concrete construction

How schedule can be influenced by real time sensors within Concrete, enabling ongoing construction to be optimised



# Smart Construction Platform



**Thank you  
&  
Safe Travels**

