ORACLE

Managing a Construction Site During COVID-19

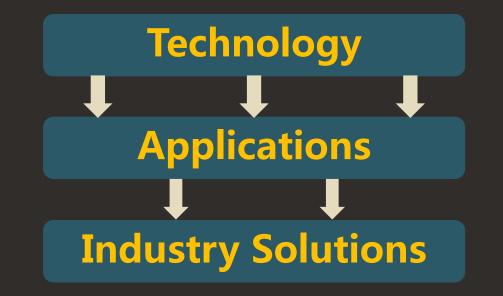
Innovation in Action

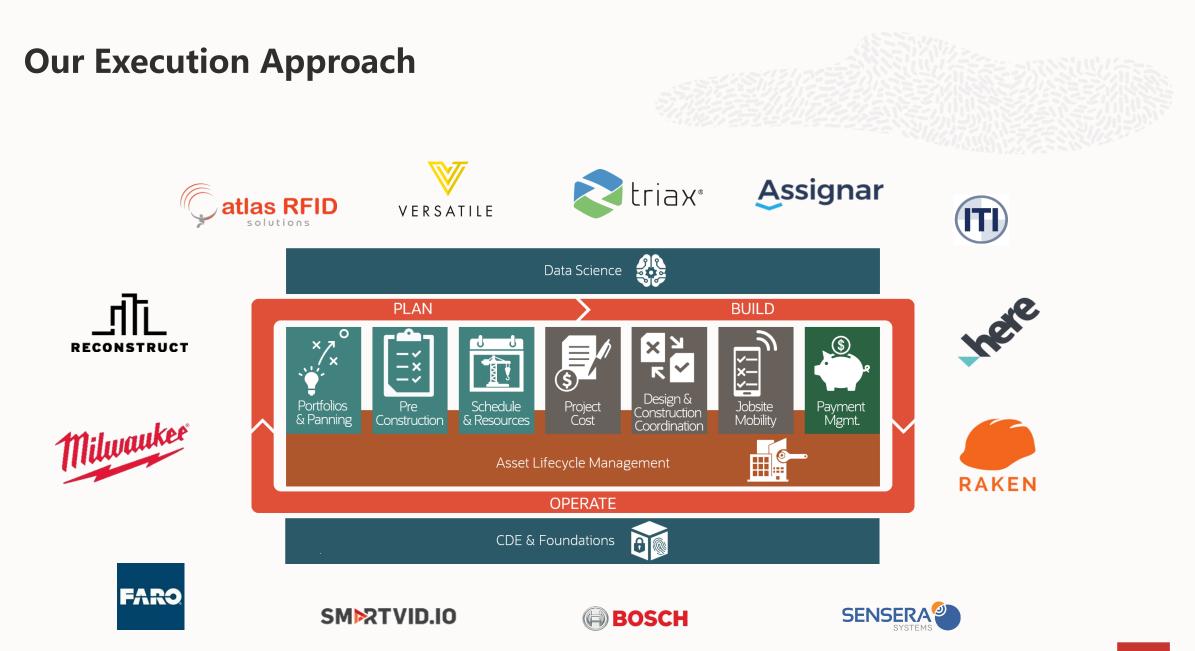
Burcin Kaplanoglu Executive Director, Innovation Officer Oracle Global Business Units November 5, 2020 Our mission is to help people see data in new ways, discover insights, unlock endless possibilities.



Our Heritage







Lab Vision

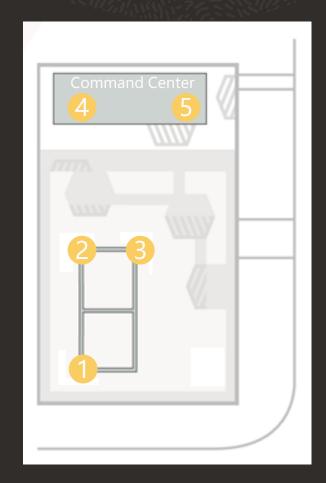
A place for Oracle and our partners to prove how our customers can achieve efficiencies and grow profits

Phase I

Phase II

Phase I Experience Map

- Material Tracking and Readiness: Tracking + drone + gate reader
- 2. Progress Reporting with Autonomous Devices : Drone + rover + camera
- **3. Internet of Things**: Worker location + equipment authorization + fall alert + tool tracking
- 4. Command Center: BIM model coordination and review with VR + virtual progress and risk reporting + Lean task management + earned value management + 4D/5D BIM + AI-powered image recognition + site delivery tracking + virtual training
- 5. Augmented Reality and Industrial Knowledge Transfer Platform: Punch list + equipment tagging + built progress with 3D model overlay + data visualization





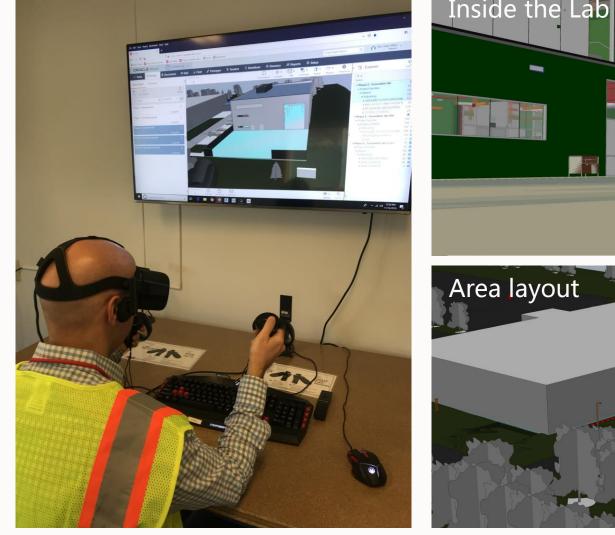


Innovation Lab Phase II - Construction and Tech on Site





Visual Command Center – BIM Model Coordination – Asset Digital Twin

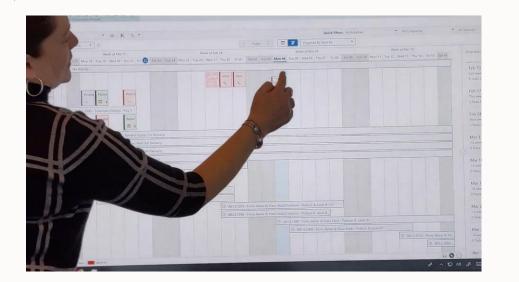






Virtual Command Center – Digital Planning Board – CPM + Lean

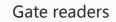




Actions - View Tasks by Activity	y • 🖷 🗙				Quick Filter	All Assigned Users	All Companies	WBS - (1) Selected
September 2017			<	Today > Day Wee	ĸ			
	«		1	Planning Period: 17-Sep-17 - 28-Oct-	17			>
Analysis 🖽 🖅	Sun 24	Mon 25	Tue 26	Wed 27	Thu 28	Fri 29	Sat 30	Drag tasks to a different w
No Activity) B27.S.1300-Form, Rebar & Place	Deck - Bidg B, Level 27						2017
O NO ACOVITY			() B28.S.1320-Form, Rebar & Place	Walls/Columns - Bidg B. Level 27				Sep 17 - 23
\oplus					B28.S.1310-Form, Rebar & Pl	Deally Dide D Low 200		Last week 23 Tasks Due
								23 Tasks Due
() B26.S.1290-Form, Reb					Splice Rebar at Column A1	Block-Out Forms		Sep 24 - 30
					×	1 ×		This week
() B27.S.1300-Form, Reb					Bottom Rebar	Electrical Inserts		25 Tasks Due
					~	1		Oct 1 - 7
B27.S.1310-Form, Reb					Edge Forms	Glazing Embeds		Next week
() B28.S.1310-Form, Reb					4	~		21 Tasks Due
					Shore Deck	Plumbing Inserts		Oct 8 - 14
B28.S.1320-Form, Reb					V			+2 weeks
								0 Tasks Due
B29.5.1320-Form, Reb						Post-Tension Cables		
() B29.S.1330-Form, Reb								Oct 15 - 21
C and a row row row row						Top Rebar		0 Tasks Due
() B30.S.1330-Form, Reb								

Material Readiness and Contactless Site Deliveries

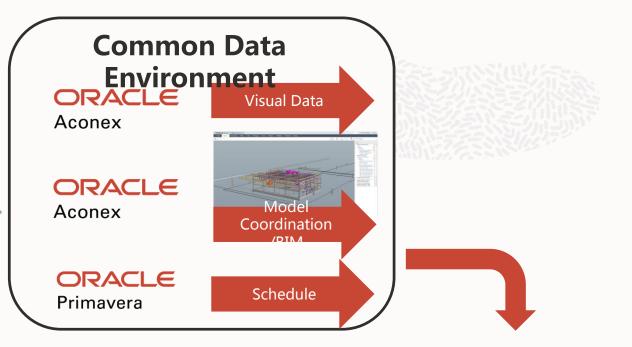




- Jovix's Supplier Mobile apps are paired with automated gate readers
- Materials are equipped with passive RFID tags to automatically notify teams of arrivals

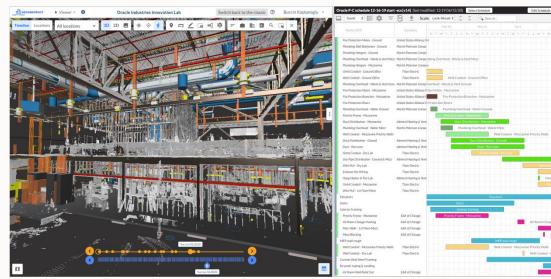
- Material data is then visualized in Jovix throughout the supply chain
- The general contractor can see the materials within the supply chain as they relate to the work package and the Oracle Primavera Cloud Schedule ID



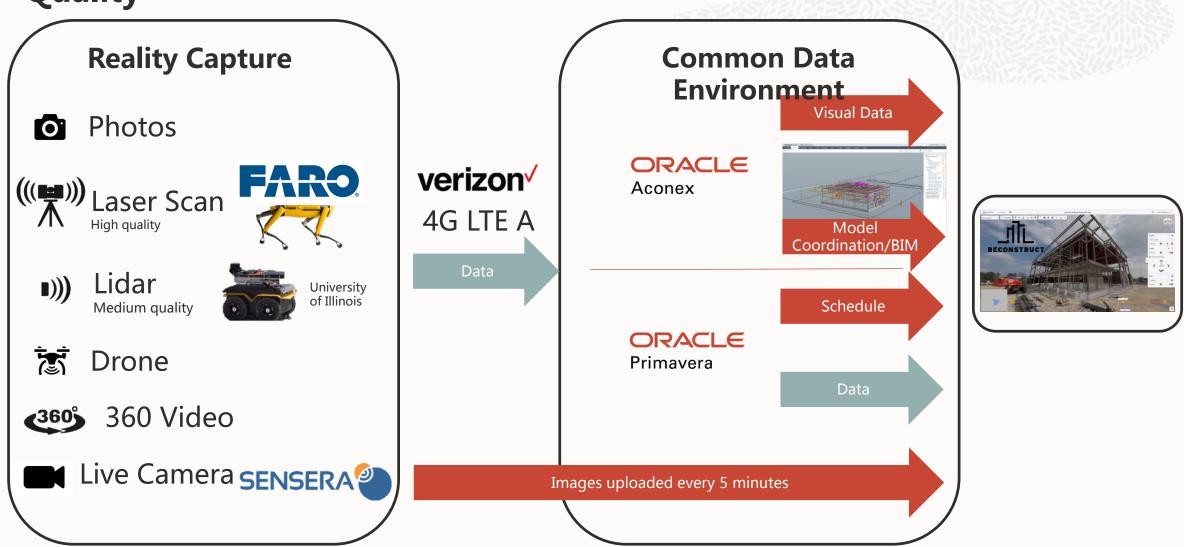




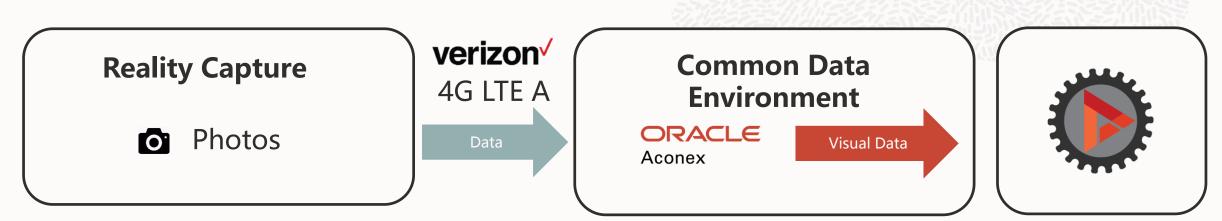




Visual Command Center – Monitoring Progress, Schedule, Risk + Quality

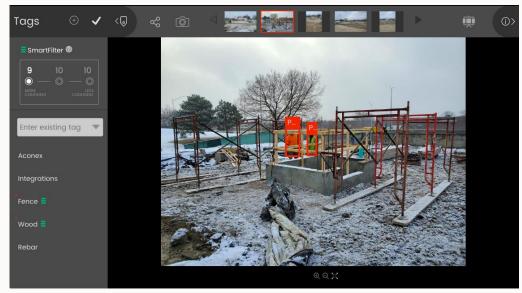


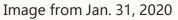
Social Distancing – Monitoring Health and Safety



Use Cases:

- PPE compliance
- Housekeeping
- People in group mobile access in near real time*
- Work at height
- Construction activities

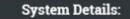




Social Distancing – Monitoring Health and Safety



Proximity Trace[™]





 Real-time audible alert for close contact interactions 0

Gateway:

attendance, transmits

configurations, including

interactions to cloud

Can facilitate remote

Logs headcount/

sounds

- Records worker interactions for contact tracing
- Rechargeable battery with weeks to months of battery life between charges
- No GPS or off-site tracking



- Real-time audible alert and flashing red LED will be emitted when worker
- Alert and LED can be turned off for contact tracing only
- Escalation alert allows warning beep for timely distance correction; alarm increases in intensity if distance is not corrected
- Alarm can be silenced or temporarily disabled with a button push for accepted close contact work



- Headcount/attendance
- Worker profile management
- Device management and administration
- Self-service contact tracing report; data includes timestamp, duration of interaction and participants

Proximity Trace at a Glance:

- Gateways are cellular
- · Device-to-device and device-to-gateway signaling
- No dependency on client WIFI or internet
- No location data on site or off site

Improved Payment Outcomes

Oracle Textura Payment Management

On the Innovation Lab project, Oracle's cloud billing, compliance management and payment solution:

- Enabled accounting staff to work remotely
- Reduced the average time it takes to pay subcontractors by two weeks from March to May
- Cut the time to produce an approved invoice by more than 50%



-											Date	nards Signed In	As come	an a
		Parment application Promett	-		and the second									-
	ct. satcontractor		PRINTPR	torrance	NUMBER NO. FIDON									
der5		Key Metrics Last spatial as at 10 arc									off 10-34-2020 17	52.53 (AEST)		
Carrency		Current Amounts												
4,0		0			Net Appro	Dev bev	Fletenton \$20,369,357.36			0	EPP Funded \$0.00			C
Segment ID		Subcontract Value (110) \$764,578,312.04		Payment Applica \$185,169,		\$149			.794,813.25					
-Delect Value		0104,010,0	12.04		4100,100,	000.40	\$20,000,0	07.00	0140	,704,010.20		40.00		
Project Marrie														
-Beind Value		Unpaid Amounts		0		0		0		Ø				2
		Pending Approval (54)		0	On Hold (32)		Pending Authorisation (51)		Pending Disbursement (52)		EPP Pending Maturity			C
Project Danset		\$8,805,03			\$10,679,3		\$10,874,8			898,870.39		\$0.00		
-dened Value														
Funding Organ	ritation	Details												
-Detect Value		Project Name	Princip	Section E	Project Owner	funding Organization	Original Selecteritrary Union	Assessment Variation Value	Entropy and United	Net Approved Payment Applications	Retention	Det	Pending /	
Projects with I	Pariod Since	CTHF	10092	NEW	infigen	Coastal Construction	F14 100-00	50.00	814 100.00	10.00	\$705.00	50.00	51.0	
01-10-2015	12	Central Serviced Apartments	10074	NEW	Total Construction	Coastal Construction	\$358.587.800.08	\$253,000,00		896,212,822,02			\$1.30	
Project States		Ob fewer	03-032	VIC	Construct Developments	AAA Burner Ptr Ltd Buildern	\$8,977,000.00	81,344,000.00	\$10,321,880.00	\$1,472,587,29	\$103,125,40	8991,325.80	\$10	
4/24	10.00	Country Ofreed	87165	SHC .	Trifigen	Constal Construction	\$8,500,000.00	\$40,000.00	\$8,045,000.00	\$411,759,90	\$48,529.60	95.00	\$3.	
		Desupori Apartmente	10293	VIC	Venture Developments Pty Ltd	Coastal Construction	\$1,500,000.00	80.00	\$1,500,800.00	80.00	810,250,00	80.00	812	
	Planet	Geeling Student	10013	VIC	Owner	Coastal Construction	\$2,573,000.00	\$2,000.00	\$2,835,200.00	\$117,738.40	\$81,437,60	\$808,387.50	311	
		Cramilie Harbder	07-4712	-VIC	intigen	Coastal Construction	\$80,100,000.00	-\$15,995,000.00	\$40,295,880.00	88,716,800.00	\$1,099,000.00	80.00	54-	
		Kowtoon Towers	#8355	HK	East Coast Resorts Limited	Coastal Construction	\$38,208,714,29	\$0.00	\$35,258,714,29	80.08	\$231,389.48	50.00	\$2.16	
		Statistics University	52433	8G	Ryan Joseph	Coastal Construction	\$83,201,032.75	8213.600.00	\$43,581,833,75	\$25,008,009,07	\$2,797,901.58	\$27,415,045,73	\$1.15	
		Mount Pleasant Retreat	40278	PADIN	Honos Elic Phylipe	Coastal Construction	\$48,825,000.00	\$0.00	\$48,825,880.00	\$3,991,144.03	\$559,710.25	50.00	\$1,11	
		Indensi Gallery	10054	SIC .	Ryan Joseph	Could Construction	\$42,985,000.00	\$212,800.00	\$43,197,855.03	\$5,317,100,08	\$191,800.00	\$5,988,775.10		
		Tipheral History Numbers	10001	NEW	Museurro Australia	Coastal Construction	\$42,995,000.03	\$329,250.05	\$43,305,250.00	\$21,954,875,03	\$1,997,425-08	818.387,500.06	838	
		Northern Hospital Expansion	72431	NEW	Ryan Joseph	Coastal Construction	\$31,702,500.00	\$1,218,500.00	\$33,051,000,00	88,875,550,99	\$1,085,042.00	38,258,525.26	589	
		Fitz Carton Netourne	29512	NC	RC Enterprises	Coastal Construction	82.500.054.00	80.93	82 500 354.00	8891.805.41	543.842.38	8817.082.92	, "	
		Pert -Export												
		Snapshot												
		Top Bubcostractors	by Tutal C	ontract Value	t	Des 40 Suttonitado		Average Days to A	oprove, iPwy					
		8140.000.000						414						
		\$120,008,000						310						
		8100,000,000												
		880,008,000										- L	2	
		860,008.000						20-					0	
		840,000.000		_										
		\$25,000,000	-											
		80 22	22	22 2	1 55 753 55	27 EF3 F5		20-						
		10	12	1 1	2 20 155 27	1 1 1								
			-	1 1	32			2010			12255588 12255588	88888		
					*			100		2-12 2-12 2-12 2-12 2-12 2-12 2-12 2-12		0.000		
			1000	-	a Contract Mandata	ME Tool			E-interior (ac	n to August a Real Property Days to Page				
								Paul - Export						

Oracle Construction & Engineering LAD team

3.

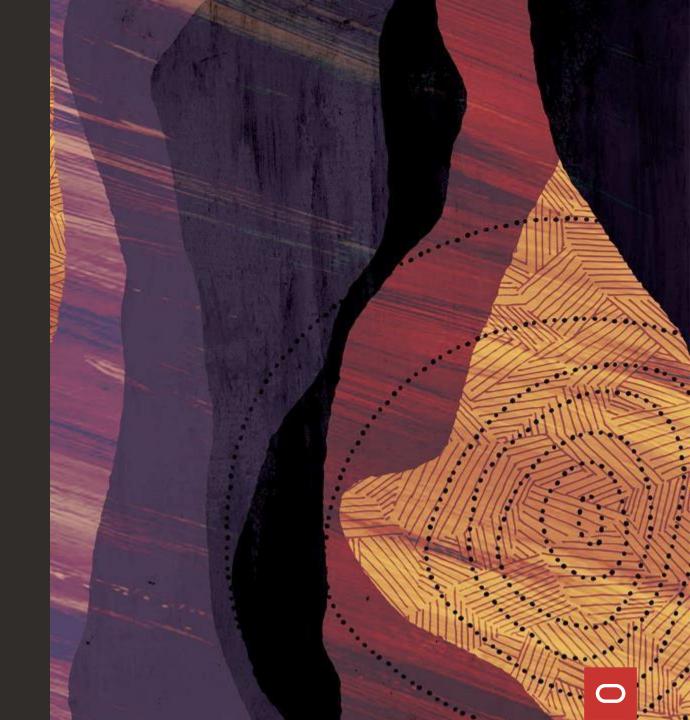


Patricia Cardenas patricia.cardenas@oracle.com Public Sector

> Joao Rocha joao.rocha@oracle.com Private Sector

> > Fabian Cuellar fabian.cuellar@oracle.com Solutions Engineer

Thank you



Copyright © 2020 Oracle and/or its affiliates.