### Got 100bn to spend? A WBS ain't going to cut it



Total Spend > \$100bn



#### **Current project profile**

- 1. Sydney Metro EDA, IC, Contractors Design Team S2B
- 2. Melbourne Metro IR, PE
- 3. AJMJV to Rail Projects Victoria
- 4. Easing Sydney Congestion Phase 1,2 and 3
- 5. Warringah Freeway
- 6. Sydney Gateway
- 7. Project Energy Connect
- 8. Marinus Link



#### **Current project profile**

9. Inland Rail
10. Bruce Highway
11. Newell Highway
12. Saltwater Creek
13. West Gate Tunnel
14. Highgate Bridge
15. TEAS Advisory
16. Logan to Gold Coast Fast Rail....



## **Sample Clients**



#### **Earned Value v Critical Path**

CPA provides indicative end date
 Earned value provides real progress
 Can't leverage both on the same project)



#### **Challenges of earned value**

No actuals profile
 How do you measure progress



#### **Resolution – Actuals aligned to WBS**

WEEK	VIEW	DAY VIEW	FORECAST	EXPENSES																		
+	₽ Øs	ивміт 🕞 (	JPLOAD	Scheduled End Date	Mon 26/09					Sat				l Remainin;	-	Schedule s Hours		Timesheet As Cyndi Lauper Progress	Comments	•	Week Of	2 >
LND004	6 FAL Airport	Link																-				
FLS25	A-constructe	d drawings		31 May 2021								0	80	50	130	50	-80					
FLS10	Fire & Lite Sa	fety FES, FEB & FE	R preparation									0	15	25	40	30	-10					Î
FLS20	Preparation of	of BoQ with delive	red drawings									0	40	18	58	18	-40					Î
FLS15	Temporary &	enabling works d	esign									0	40	30	70	40	-30					Î
	Total Hours				0	0	0	0	0	0	0	0										



#### **Resolution – Progress aligned to WBS**

Best In West Electrical: Geo-Engineering Services Earned Value

8

Depth

All

					Di	ate						
Description	Ref	Stage Gate Group	Current Milestone	% Coi	mp A	chieved	Earned Value	Earned	Actual Cost	Planned Cost	Effort	
Detailed Design			•	100.	.0%		\$993.08		\$575.00	\$993.08		<b>E</b> 4
Bored Tunnels Segmental lining		Strategic	<ul> <li>Approved</li> </ul>	100.	.0% <b>9</b> /	/07/2021	\$993.08		\$0.00	\$993.08		9
Associated portals		Strategic	No Selection	•					\$575.00	\$0.00		<b>q</b>
Temporary & enabling works design	FLS15	Strategic	<ul> <li>Issued for review</li> </ul>	80.	.0% 13	3/07/2021	\$840.00		\$1,200.00	\$1,050.00		9
Fire & Lite Safety FES, FEB & FER preparation	FLS10	Strategic	<ul> <li>Issued for approval</li> </ul>	80.	.0% 13	3/07/2021	\$240.00		\$450.00	\$300.00		<b>q</b>
Tunnel CFD modelling		Strategic	<ul> <li>With project engineer</li> </ul>	80.	.0% 14	4/01/2022	\$1,158.00		\$450.00	\$1,447.50		90
Preparation of BoQ with delivered drawings	FLS20	No Selection	No Selection						\$1,200.00	\$1,200.00		E
Drawings		No Selection	No Selection	•					\$2,745.00	\$2,400.00		<b>E</b> 4
Shop-drawings review		No Selection	No Selection	•					\$345.00	\$0.00		
A-constructed drawings	FLS25	No Selection	No Selection	•					\$2,400.00	\$2,400.00		<b></b>
Something new		No Selection	No Selection	•					\$0.00	\$0.00		<b>E</b> 4
New stuff		No Selection	No Selection	•					\$0.00	\$0.00		<b>E</b> 4
More new stuff		No Selection	No Selection	•					\$0.00	\$0.00		<b>E</b>
New stuff 2		No Selection	No Selection	•					\$0.00	\$0.00		<b>E</b>
Describe the change		No Selection	No Selection	•					\$0.00	\$0.00		Ę
				43.	.7%		\$3,231.08		\$6,620.00	\$7,390.58		



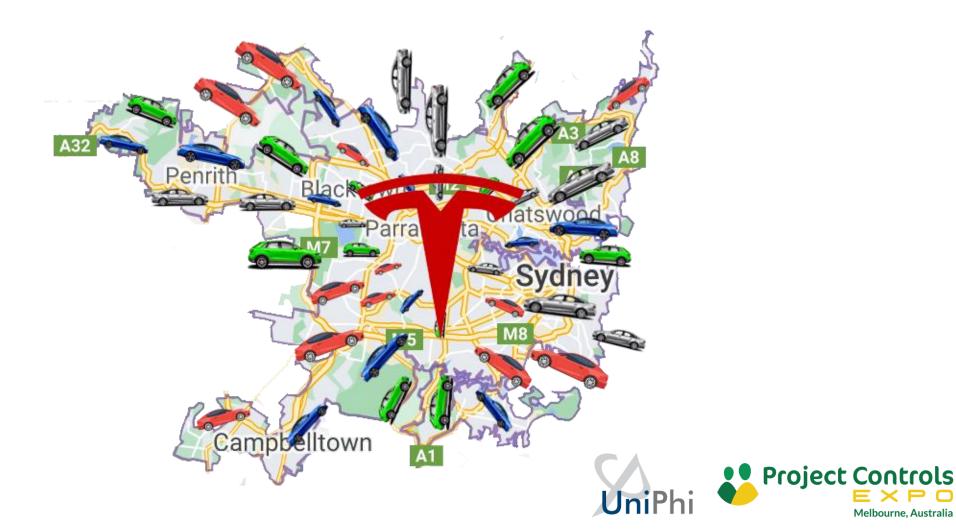
#### **Resolution – Evidence based progress and more dimensions**

Pre	Preparation of BoQ with delivered drawings									File Attachments					
8									File			Date			
	/ Smith d Neeson	Actual Hours 35	Rem Hours	Total Hours	Contract Hours	Variance	Progress		Early v site.en	-	possible cultural items found or	21 Nov 2022			
Com	ments								Relat	ed Issues	S				
	Jane W Smith, 21 Nov 2022 14:11 This is because of the scope change CR001 attached									Category	Issue Description BoQ different to pre-tender e	stimate			
Ø	Jo Bloggs, 21 Nov 2022 14:11 From: Simon Day Sent: Tuesday, May 26, 2020 10:54 AM To: Mark Heath Subject: Early warning due to possible cultural items found on site Hi Mark														
	During excavation activities yesterday, unusual items were discovered in the works and called on the consultant archaeologist to assess. We are expectin moved away from the affected area, however if items of interest are uncover a structure of the structure of														
	Once we have the archaeologists initial recommendations, I suggest we con-	vene an	early war	ning me	eting on t	ne matter.									
	regards														

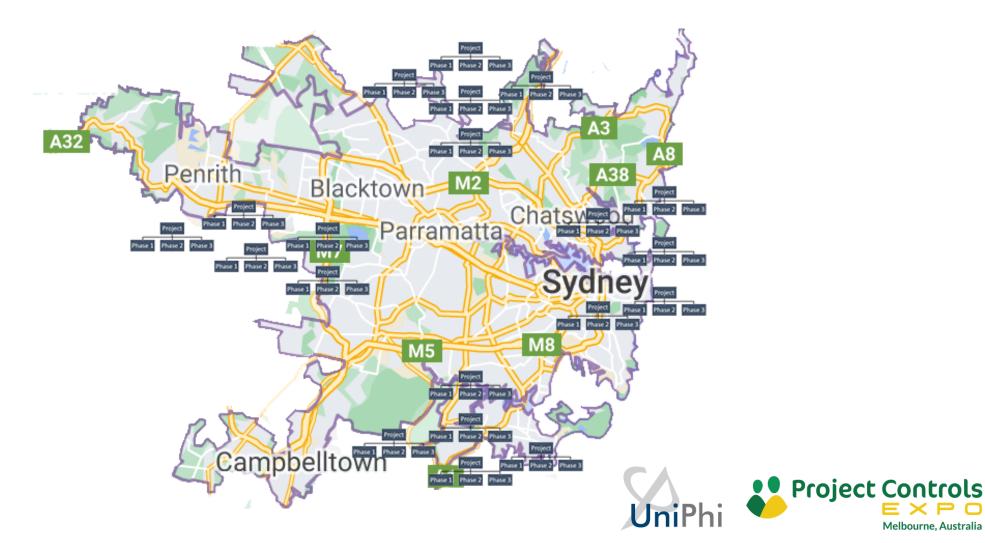


regards

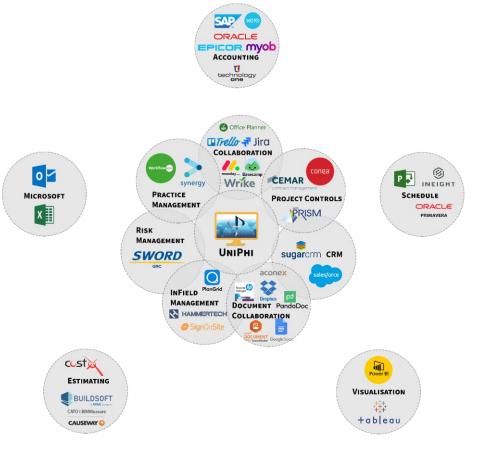
#### **Distributed data capture**



#### **Distributed data capture**



#### **Centralised database**





#### How do you control complexity? Should you?





# Al driven issues resolution

Nort	n Rd	•								ᅙ
ADD		Category	•	Assigned 1 All	ō	•	Status Open	Escalated To	Correspondence Type All	•
	Project ID Project Name		Priority Category	Issue				Rating Esca	late To Assigned To Due Date	
	6052812 North Rd		100 RFIs	Ausgrid re-	design mark	up Western conduit c	rossing			
		Description	Resolution Date	Duration	Cost	Parties Involved	Resolution Descrip	otion		
	South Rd	Ausgrid Conduit Design Changes	15/10/2020	5 days	\$10,000	<b>(</b>		g on same HV feeder with RCD proposed no s required during outage planning, which v		e
	East Rd	Drainage clash with Electrical	2/11/2020	3 days	\$12,000	4		bjection to this change in works being pick inspector's approval.	ed up in the WAE subject to	
	West Rd	Electrical Work Interface Check	14/06/2019	10 days	\$11,500	<b>()</b>		n are from face of kerb or Endeavour Energ is noted the ASP1 has appears to measure		



"We use to spend 80% of our time collecting data and 20% analysing, now we spend 20% collecting and 80% analysing"



# Mark Heath m.heath@uniphi.com.au

