
How to Use AI When You Have Too Much Data But Not Enough Information

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Agenda

1. The era of the mega-project
2. Knowledge over data
3. Taming the data beast – gaining control

Reducing project
risk is not just
“what you know”

Failures Make Headlines



“California high-speed rail loses \$929M in federal funds over 'critical failures'”

“Sydney’s troubled \$2.1B light-rail project delayed again”

“Metro Tunnel builders battle claimed \$2B blowout”

“Bleeding red ink: Australia's \$150B energy projects gamble falls flat”

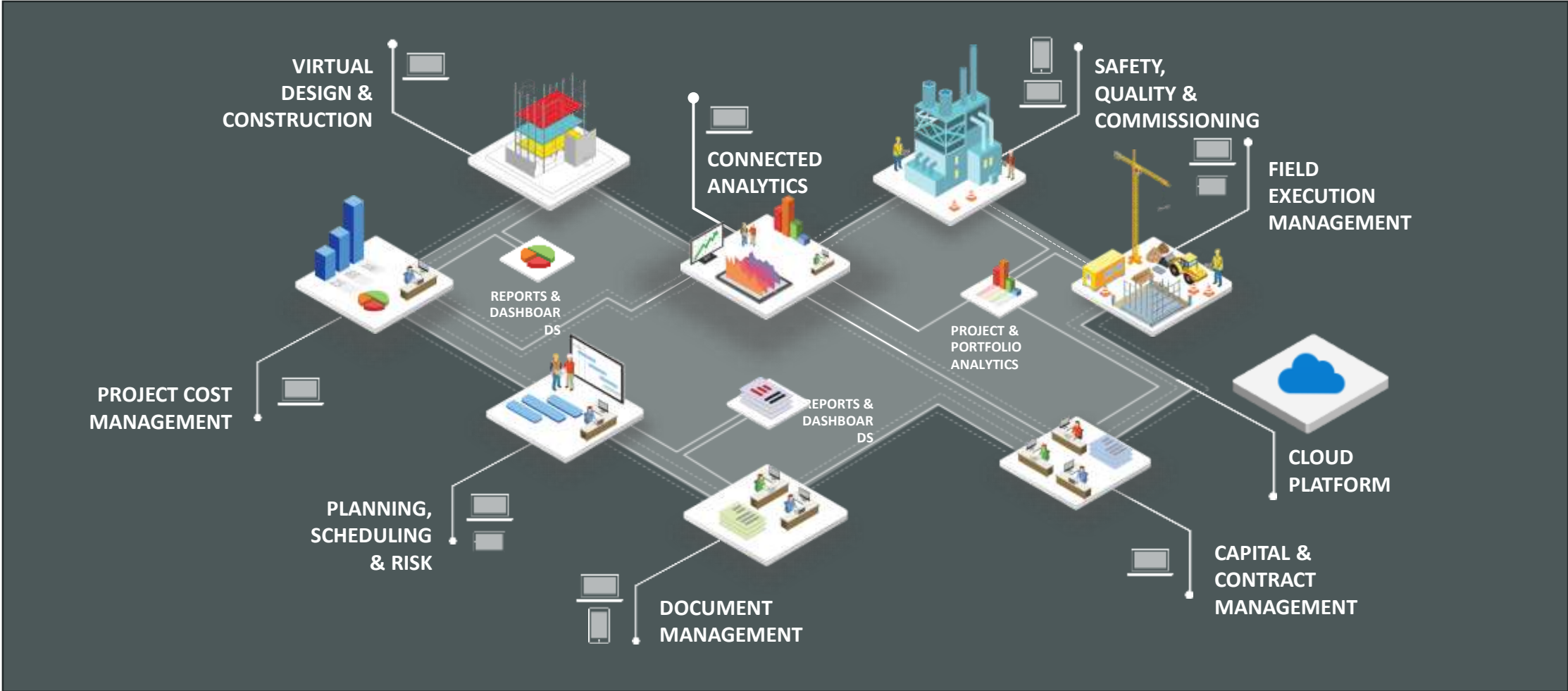
“Berlin mayor faces calls to resign over embarrassing airport construction delays”

Projects Are Bigger and More Complex Than Ever Before

- Larger scale
- More sub-projects
- Longer timelines
- Greater scrutiny
- More data than ever!

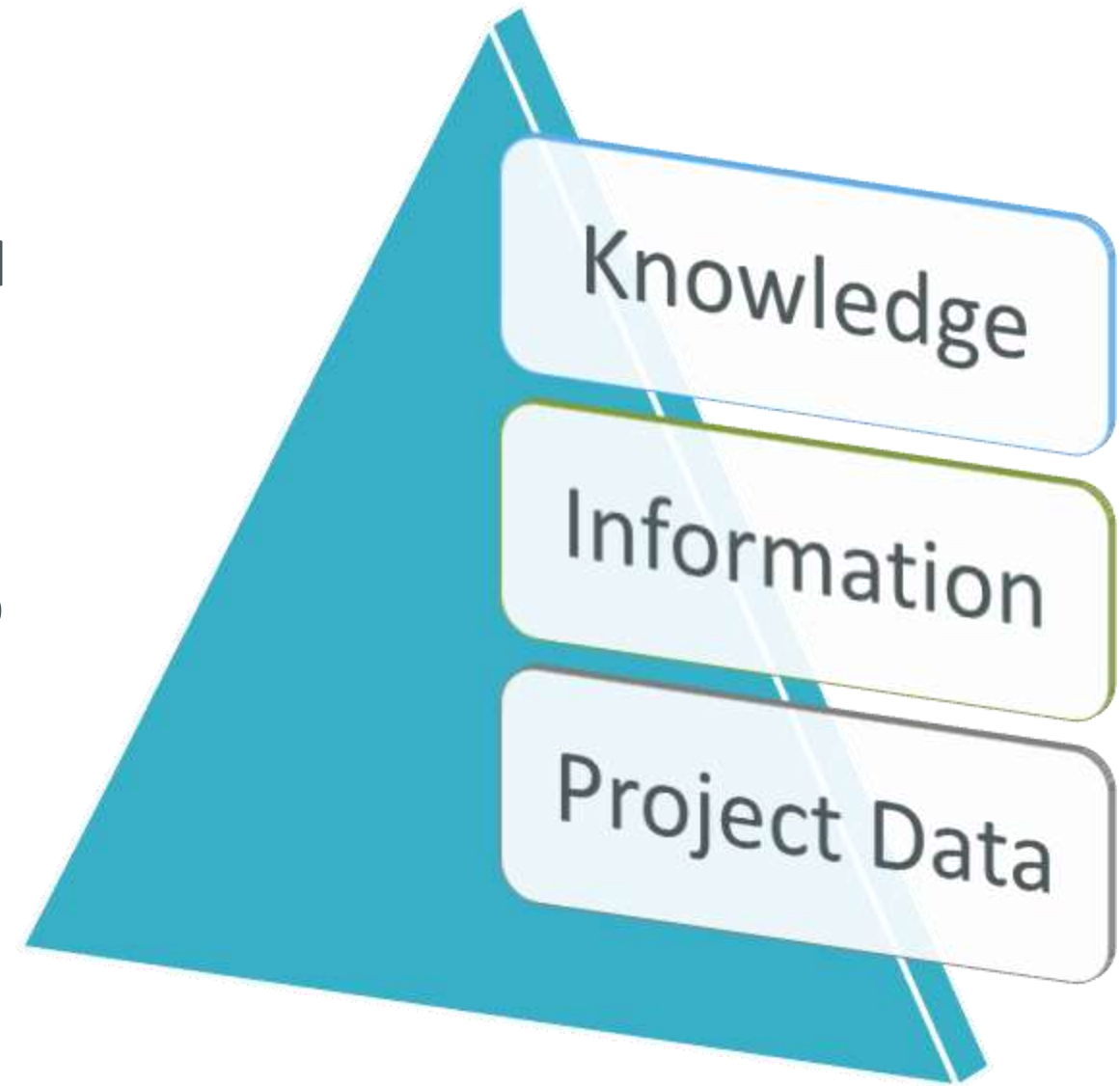


The Distribution of Our Data and Decisions



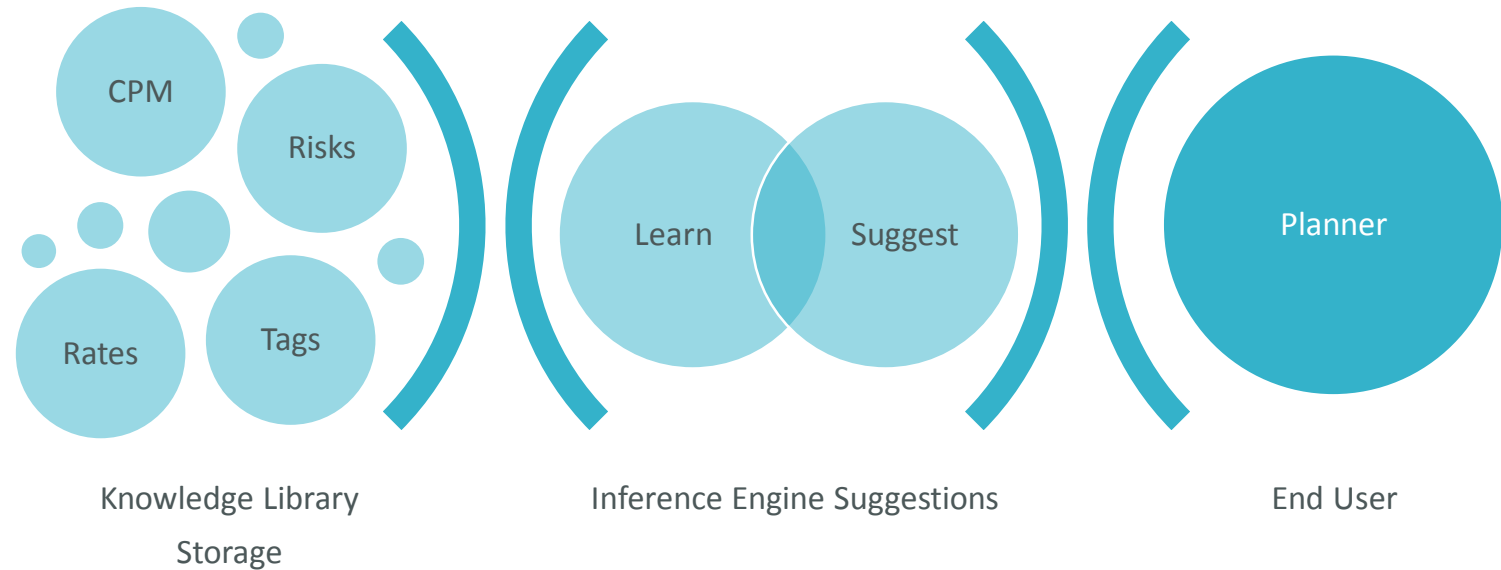
The Data Refinery

- Gather, aggregate, analyse and support decision making
- Maintain a continuous process through the project life cycle
- Retain knowledge and develop intelligent project practices



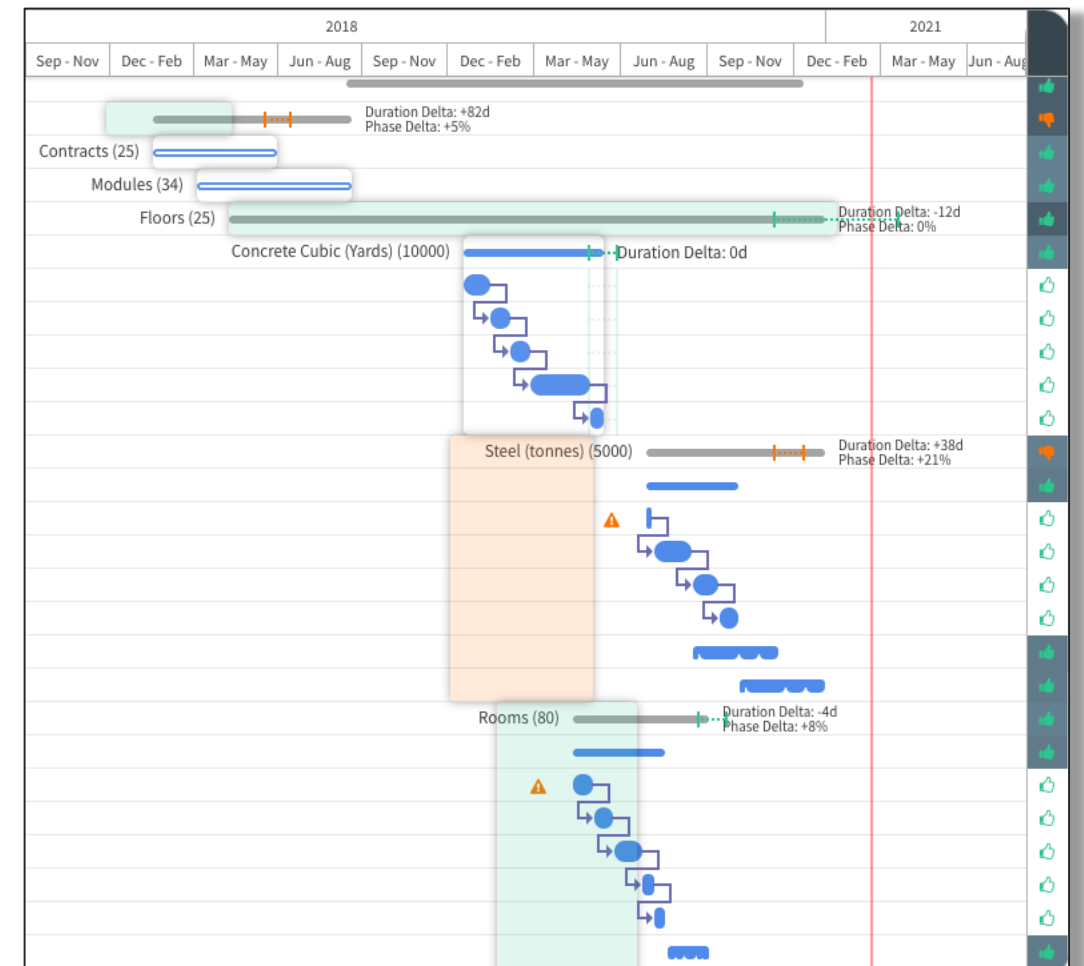
How Can AI Help?

- Emulating the way a human thinks
- Computer only gives suggestions
- Planners and directors still have ultimate control
- Neural nets and knowledge-based systems
- Augmented intelligence, not artificial intelligence



Rapid Templating and Sub-Netting Using AI

- The Old Way
 - Recreating subnets is incredibly time-consuming and inefficient
 - Subnetting is inherently hard due to logic cutting and retying
 - Copy-paste in traditional tools doesn't account for quantity differences
- The New Way
 - Smart templating
 - Guidance on how to re-sew logic
 - Automatic normalisation

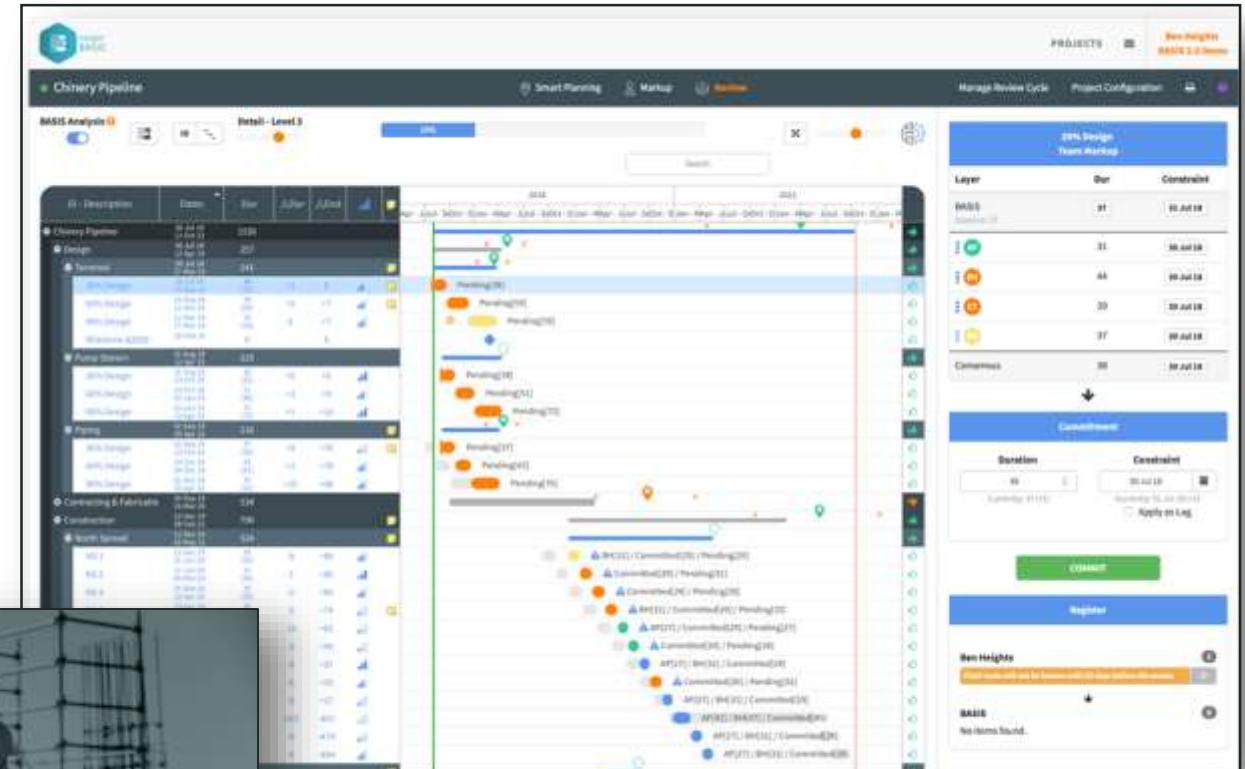


Use Lessons From the Past and Today's Insights to Determine More Predictable Outcomes




Share the Knowledge and Collaborate

- Capture expert opinion
- Drive buy-in
- Perform consensus analysis
- Use survey scorecard approach
- Build risk models



Your Entire Project Portfolio on a Page



Portfolio

Original Budget

\$1.80bn

Approved Change Order Amount

\$64.25M

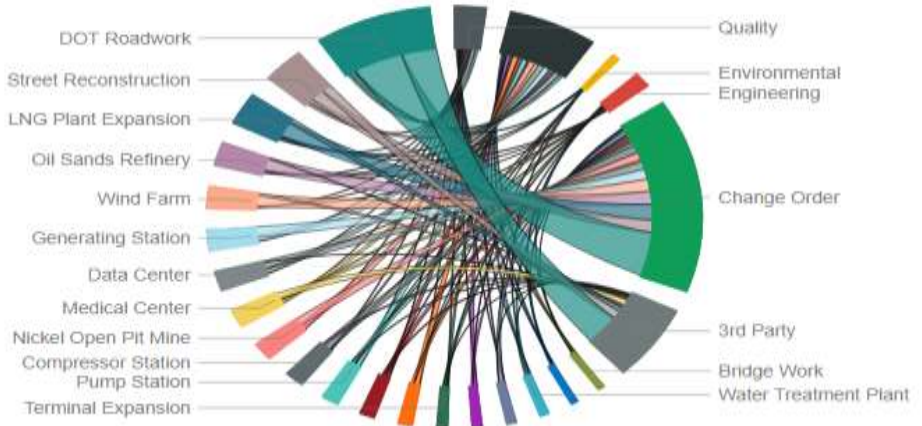
Current Budget

\$1.87bn

Forecast Cost

\$1.81bn

of Issues by Type & Project



- DOT Roadwork
- Street Reconstruction
- LNG Plant Expansion
- Oil Sands Refinery
- Wind Farm
- Generating Station
- Data Center
- Medical Center
- Nickel Open Pit Mine
- Compressor Station
- Pump Station
- Terminal Expansion

- Quality
- Environmental Engineering
- Change Order
- 3rd Party
- Bridge Work
- Water Treatment Plant

Days Without Safety Incident

463✓

Recordable Rate

0.26✓

Goal: 1.00

Quality Non-Conformance Rate

1.06!

Goal: 1.00

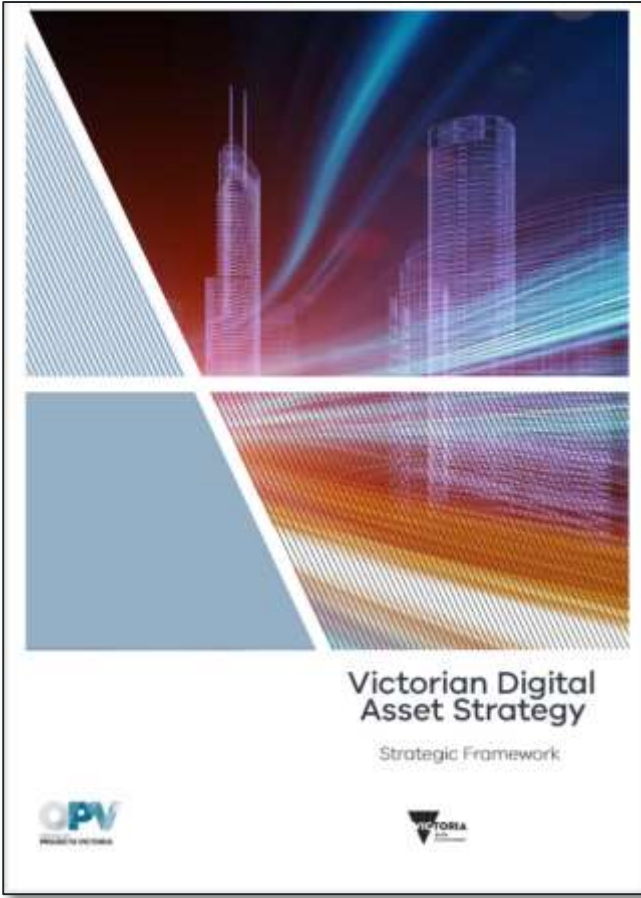
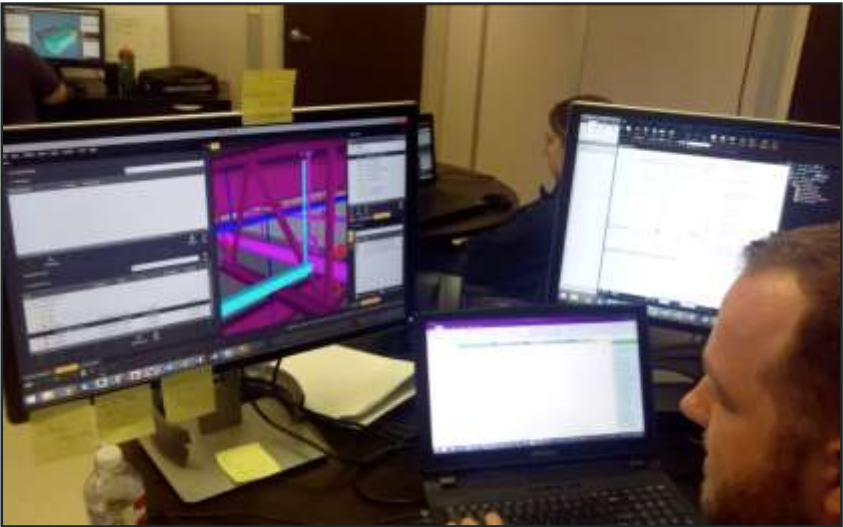
Market	Project	Contract Type	Original Budget	Approved Change Orders	Current Budget	Forecast Cost	Change Order as % Contract Value	% Complete
Power	Generating Station	Design-Build	\$129,537,566		\$129,537,566	\$125,651,439.02		67.8%
Power	Lenexa Power Transmission	Design-Build	\$116,564,987	\$4,757,017	\$121,322,004	\$117,682,344.00	3.92%	54.8%
Wastewater Treatment	Water Treatment Plant	Hard Bid	\$104,899,364	\$1,982,598	\$106,881,962	\$103,675,503.12	1.85%	53.5%
Renewable Energy	Solar Farm	CMAR	\$103,769,503	\$2,008,563	\$105,778,066	\$102,604,723.54	1.90%	51.0%
Vertical	Terminal Expansion	LEED	\$103,089,732	\$3,001,906	\$106,091,638	\$102,908,888.04	2.83%	9.9%
Mining	Nickel Open Pit Mine	O&M	\$99,289,262	\$1,420,829	\$100,710,091	\$97,688,788.60	1.41%	9.5%
Vertical	Airport Terminal	LEED	\$98,256,369	\$4,901,961	\$103,158,330	\$100,063,580.22	4.75%	55.6%
Vertical	Data Center	Hard Bid	\$96,256,995	\$2,382,274	\$98,639,269	\$95,680,090.93	2.42%	81.1%
Petroleum	LNG Plant Expansion	Design-Build	\$94,768,685	\$2,051,311	\$96,819,996	\$93,915,395.96	2.12%	22.0%
Civil	Street Reconstruction	Hard Bid	\$93,369,548	\$3,712,815	\$97,082,363	\$94,169,891.82	3.82%	65.6%
Total			\$1,803,122,022	\$64,248,948	\$1,867,370,970	\$1,811,349,841.14	3.44%	

Change is the Only Constant

“I have no idea how we would have solved our challenges around multi-party forecasting if not for the InEight solution”



“Invest” in Digital Engineering



Asset Information Model

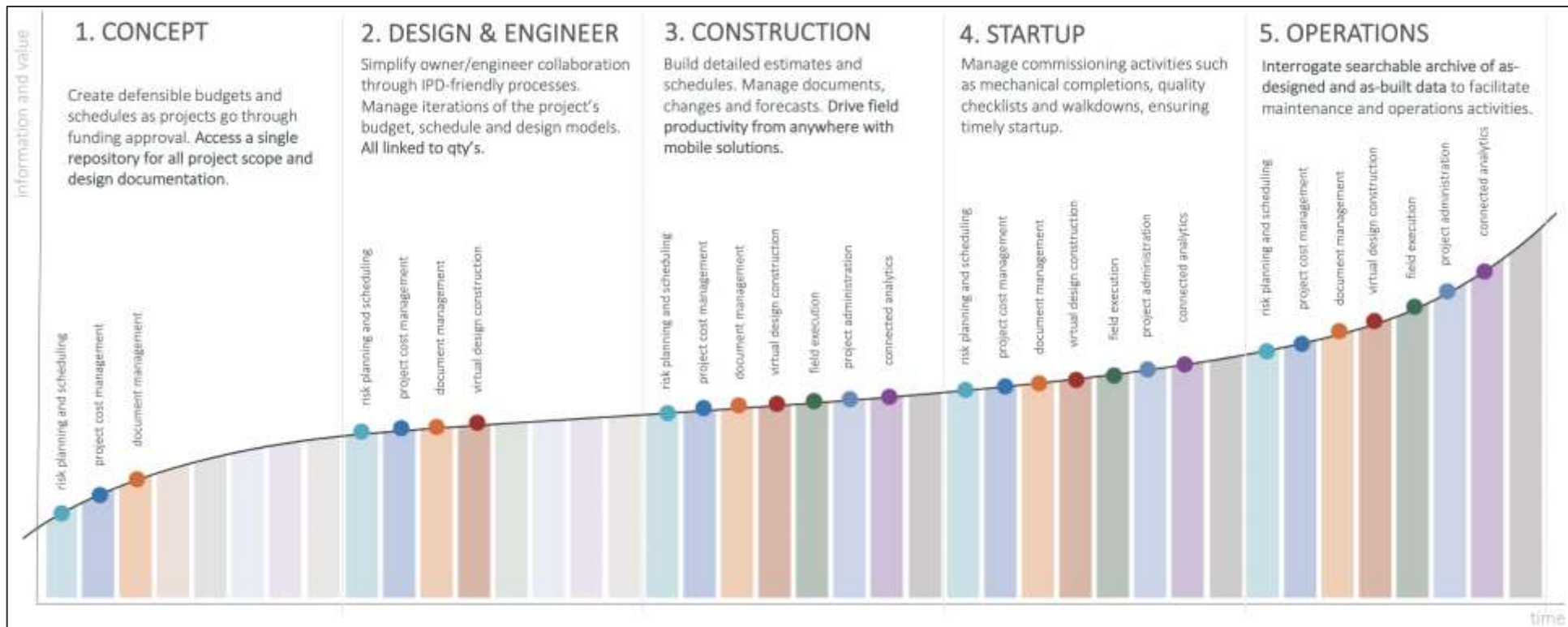


The screenshot displays the INEIGHT software interface. On the left, there is a file browser showing a list of manuals for various equipment. The central area shows a 3D model of a facility with a complex network of pipes and structures. On the right, a 'Selection Information' panel displays a table of parameters for a selected asset.

Parameter	Value
Unique ID	CTE506
Control_Parent	
System	Conveyance
Component	Escalator (ESC)
Asset_Description	AFTA heavy Duty Transit Type Escal...
Level_Name	Customs
Location_Descr...	ESCALATOR
RMG_Location_ID	
CSI_Division	14 Conveying Equipment
CSI_Division_Se...	14 3100 AFTA Heavy Duty Transit Ty...
Manufacturer	Otis
Model_ID	
Asset_Serial_Nu...	16262
Quantity	1
Original_Cost	1
Instal_Date	6/30/2013 12:00 AM
Warranty_Expit...	12/31/2014 12:00 AM
Asset_Life_Exp...	1
Notes	Elevator number used as Asset serial...
Installed_By	Otis Elevator Company
Maintained_By	
First_Response_...	
Operated_By	
Thumbnail Id	
Location	

Applying Project Intelligence

- Increase project knowledge value through data aggregation and AI inference
- Continuously enrich data through life cycle
- Retain organisational expertise through a knowledge capture feedback loop



Three Ways Projects Can Benefit From This Approach

1. Add to the organisation's IP – *"It's how we work."*
2. Reduce risk
3. Improve margin

Thank You

Visit us at Stand 37, or learn more at [InEight.com](https://www.ineight.com)