

Project Controls Expo, Australia – 26th November 2019

Melbourne Cricket Ground, Melbourne

Unlocking the Power of Project Data Analysis for Megaprojects

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Project Controls Manager - Fluor

Short Introduction and key past project

Framing my view and approaches



Project Controls

EXPO

Melbourne, Australia

About the Speaker

Darrin Kinney

- Construction runs in my blood

- **1st job**
- 269,000 (bpd) El Segundo refinery
- In 1994? 18 years old
- Construction progress lead as a summer intern?
- **COBOL?**



1999 Level 3 Local Loops



Massive Multicity fiber rollout

- Challenge: implement a standard construction progress tool
- **Answer: NOT MS ACCESS! We failed miserably**

Only successful tool was a web based WBS CRUD list

Key lessons:
Lightweight, flexible, focused on 1 thing

OSP Project Accounting and Control System

Level(3) Communications
Main Menu

Version 1.02.00.00
DataBase: C:\NCPACS\ospdata_lak.mdb

Cost/Quantity Forecasting

- > OSP Data
- > POP Data
- > Cost Input (by Source)
- > OSP Quantity Forecast

Cost Reporting

- > Weekly OSP Progress Report
- > Historic Progress Report
- > Reports - LCD
- > Reports - Other

Utilities

- > Exit

Construction_Seq	Contract	Job Code	WBS Code	Service Name to Date	Units	Rate	Value	...	...	...	...	...	...	...	...
1	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
2	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
3	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
4	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
5	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
6	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
7	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
8	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
9	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
10	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
11	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
12	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
13	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
14	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
15	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
16	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
17	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
18	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
19	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
20	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
21	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
22	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
23	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
24	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
25	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
26	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
27	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
28	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
29	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
30	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
31	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
32	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
33	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
34	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
35	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
36	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
37	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
38	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
39	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
40	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
41	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
42	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
43	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
44	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
45	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
46	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
47	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
48	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
49	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...
50	1000	1000	1000	Service Name to Date	1000	1000	1000	...	...	...	...	...	...	...	...

2006 RGP4

Distribute all project controls data via a website

- Challenge: Convince the technology team to give me access to the web server
- Answer: YES (hell yeah!)

This is still to this day one of the coolest things I've done and quite proud to show this off

NJV HUB Project Controls
Welcome to the NJV Hub Project Controls intranet site.

Construction Status by Contract Reports
- [Construction by Contract](#)

Completion Target and Revised Completion Target
- [Completion Target](#)
- [Revised Completion Target](#)

BiWeekly Client Meeting Attachments
- [Search ACONEX](#)

Procurement Supply Data
- [Material Report](#)

This site will be under continual modification to best fit th

NJV HUB E2Trac Controls Engineering Data
Below is a summary of data from E2Trac. This information is from the E2Trac database. Any updates to E2Trac will appear in the data below.

WBS	WBS Act	Activity Desc	Beg Wks	Act Wks	Incl Wks	Status	% Comp
General							
N4C11F112	2276		0			100%	
N4C11F113	2288		0			100%	
N4C11F114	2122		0			100%	01/01/2009
N4C11F115	2122		0			100%	01/01/2009
Specifications							
N4B22B111	2126	Tig Naming	203			100%	0/03/2007
N4B22B111	2225	Control System	203	218		100%	0/03/2007
N4C11F115	2126	PLC Configuration	185	196.5		100%	0/03/2007
N4C11F116	2126	Client Configuration	185	116.5		100%	0/11/2007
N4C11F117	2122	Client Configuration Del	203	159		100%	1/12/2007
General							
N4B22B111	2216	Client Implementation	96	1		100%	21/09/2007
N4B22B111	2122	Engineering Design Preparation	655	406		100%	0/02/2007
N4B22B115	2216	Control System Create	96			100%	21/09/2007
N4C11F111	2125	Control System	143	9		100%	0/03/2007
N4C11F110	2122	Detailed Views	86	52		100%	01/10/07
N4C11F111	2122	Design/Procurement - PLC Draw	96			100%	01/10/07
N4B22B110	2122	Design/Procurement - Client	96			100%	01/10/07
N4B22B111	2122	Feeders	103	104.2		100%	1/04/2008
N4B22B112	2122	Metal Detectors and T	96	52		100%	1/04/2008
Procurement							
N4C11F111	2122	Typical Client Database Layout	276	277.5		100%	0/18/2007
N4C11F112	2122	Client - WBS	263	276		100%	0/03/2007
N4C11F113	2122	Client Systems	0			100%	0/03/2007

Key Strategic Points to Unlock the Power of Data Analytics

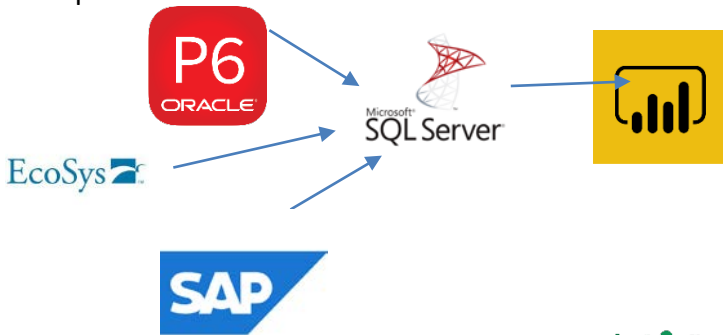


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Strategy is Not Keywords

Unlock the power of your data - that is our objective – requires you to get dirty in the trenches. We've all seen it before, beautiful power point diagrams with all the sources of data with nice arrows going everywhere.

Reality is so much more complex

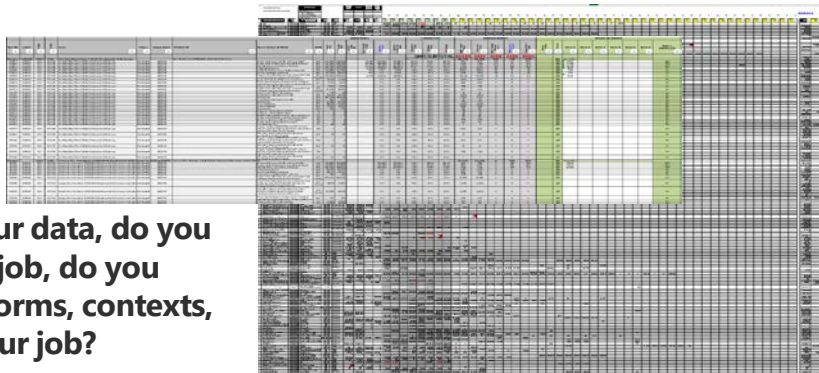


Strategy is Not Keywords

Strategy is to understand Excel Hell!

Unlock the power of your data - that is our objective – requires you to get dirty in the trenches. We've all seen it before, beautiful power point diagrams with all the sources of data with nice arrows going everywhere.

Reality is so much more complex



Do you know the basis of all your data, do you even know all the data on your job, do you understand that it will change forms, contexts, structures over the course of your job?



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Enter Data Once

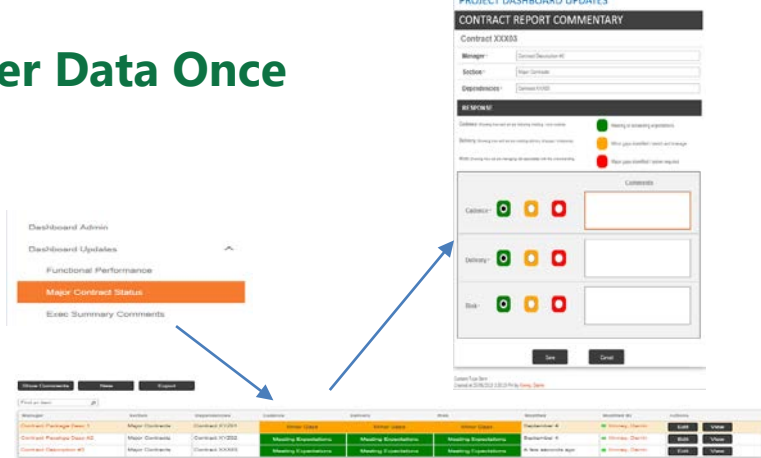
Allow users to CREATE / EDIT / UPDATE / DELETE!

- Sharepoint lists
- JIRA (I'll talk about that later)
- Twitter / Yammer / Social

 **Mersey Gateway** @merseygateway · 31 Jul 2017
We've joined up! Final segment of bridge deck was poured today - Mersey Gateway Bridge now spans the River Mersey [ov.ly/1fRW30e2Ym1](https://www.facebook.com/merseygateway/photos/a.1015512322476163/1015512322476163/)



7 59 124



Manager	Section	Dependencies	Contract	Delivery	Risk	Inspected	Inspected By	Inspected
Contract Package Deck 1	Major Contract	Contract #1234	Meeting Established	Meeting Established	Meeting Established	Inspected	Inspected	Edit View
Contract Package Deck 02	Major Contract	Contract #1235	Meeting Established	Meeting Established	Meeting Established	Inspected	Inspected	Edit View
Contract Deckpiling #01	Major Contract	Contract XXXX	Meeting Established	Meeting Established	Meeting Established	A New document type	Inspected	Edit View

Requires everyone working in the same files, or same lists, or same database

This is the “get systems talking together (if possible)”

Enter Data Once



The screenshot shows a data entry form for 'Technology Distribution and Innovation'. It includes fields for 'Package Name', 'Package ID', 'Package Description', 'Package Type', 'Package Status', 'Package Category', 'Package Sub-Category', 'Package Version', 'Package Date', 'Package Location', 'Package Contact', 'Package Email', and 'Package Phone'. The 'Package ID' field is highlighted in blue.

Package Name	Package ID	Package Description	Package Type	Package Status	Package Category	Package Sub-Category	Package Version	Package Date	Package Location	Package Contact	Package Email	Package Phone
Technology Distribution and Innovation	1000000000											

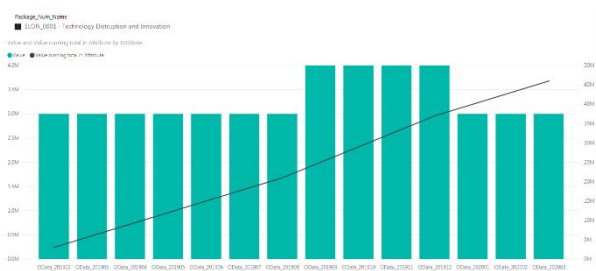
Allow users to **CREATE / EDIT / UPDATE / DELETE!**

- Cashflow Example

When data is initially entered into a structured data model (example cashflow per package), you can easily link to that and produce a myriad of graphs and analytics using that data

To often, we design our system to manage the data (or excel file), then design another excel file or Dashboard (with its own data model).

Enter Data Once is to look at the full work process from where someone keys data in, to where its consumed

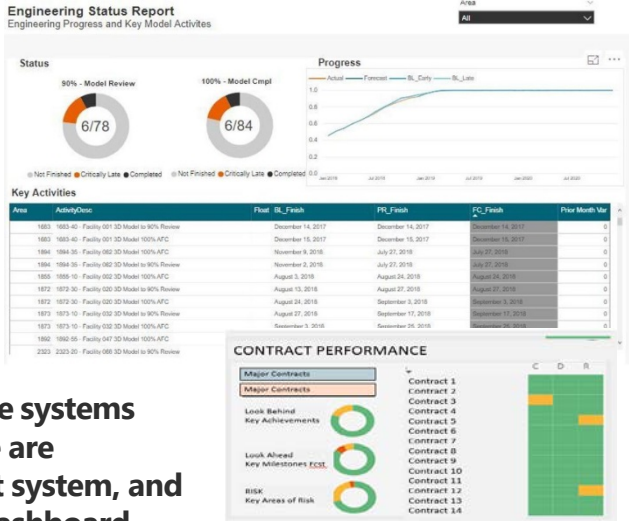


Be Visual – Dashboards!

Distribute project data via a Dashboard

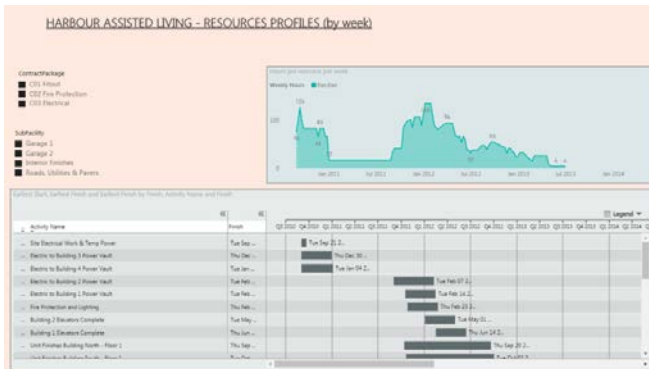
- Be smart – don't duplicate your existing reports
- Create metrics (# of activities that slipped?)

Most data will not easily come out of source systems “automatically”. The real tricks and balance are understanding what you can get from what system, and what you might need to produce a smart dashboard.



Be Visual – Dashboards!

Dashboards can display just about anything
Here is a resource analysis dashboard



This example pulls all its data from just 1 flat table export from P6

Understanding what you want to see and how it fits to a data model is critical

It is possible way over-engineer data SCHEMAS (be carefull)

Your DATA!



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YOUR DATA – Do you have (or need) a model

Where are you going to get your data

What are you planning on doing with it



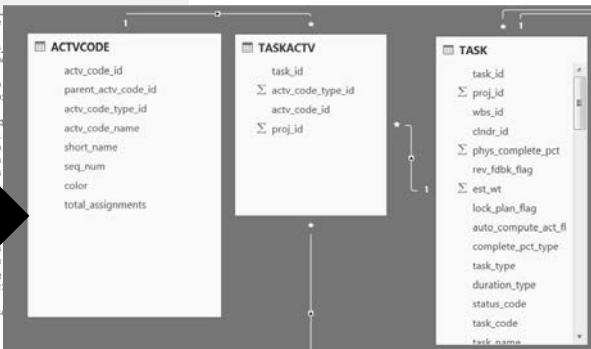
HOW are you going to get and store your data

Relational Database Model? Normalized?



Standard "XER" Export

```
My Project $4v.xer
1 ERHDR  8.4 2015-08-04  Project  ADMIN  ADMIN  dbxDatabaseNoName
2 WT  CURRTYPE
3 %F  curr_id decimal_digit_cnt  curr_symbol decimal_symbol digit
   neg_curr_fmt_type  curr_type
4 %R  1  2  $  .  #1.1  (#1.1)  US Dollar  USD  3  1
5 %R  13  2  $  .  #1.1  (#1.1)  Pound Sterling  GBP  3  0
6 %R  14  2  ¥  .  #1.1  (#1.1)  Japanese Yen  JPY  3  9
7 %R  15  2  €  .  #1.1  (#1.1)  Euro  EUR  3  0.689711
8 %R  16  2  ¥  .  #1.1  (#1.1)  Chinese Yuan Renminbi  C
9 %R  17  2  $  .  #1.1  (#1.1)  Canadian Dollar  CAD  3  1
10 %R  18  2  RUB  .  #1.1  (#1.1)  Russian Ruble  RUB  3  0
11 %R  19  2  $  .  #1.1  (#1.1)  Argentine Peso  ARS  3  3
12 %R  20  2  $b  .  #1.1  (#1.1)  Bolivian Boliviano  B
13 %R  21  2  R$  .  #1.1  (#1.1)  Brazilian Real  BR
14 %R  22  2  $  .  #1.1  (#1.1)  Chilean  CL
15 %R  23  2  $  .  #1.1  (#1.1)  Columbian  CO
16 %R  24  2  $  .  #1.1  (#1.1)  Guyanese  GY
17 %R  25  2  G$  .  #1.1  (#1.1)  Paraguayan  PY
18 %R  26  2  S/.  .  #1.1  (#1.1)  Peruvian Nuevo Sol  PE
19 %R  27  2  $  .  #1.1  (#1.1)  Surinamese Dollar  SR
20 %R  28  2  B$  .  #1.1  (#1.1)  Venezuelan Bolivar  VE
21 %R  29  2  $U  .  #1.1  (#1.1)  Uruguayan Peso  UYU  3  2
22 WT  MEMOTYPE
23 %F  memo_type_id  seq_num  eps_flag  proj_flag  wbs_flag  t
24 %R  112  1  Y  Y  Y  Y  Y  Constraints
25 %R  883  0  N  Y  Y  Y  Notes
26 WT  OBS
27 %F  obs_id  parent_obs_id  guid  seq_num  obs_name  obs_descr
28 %R  540  0  Enterprise  <html> <head> </head> <body bgcolor=""#ffffff">
Enterprise </body></html>
29 WT  POBS
30 %F  pobs_id  pobs_parent_id  seq_num  pobs_name  pobs_descr  pobs_manager
31 %R  100  0  POBS  POBS  Performance Organization  POBS
```



YOUR DATA – Billions and Billions of Stars!

Here is a typical summary table of an EPCM Level 3 schedule and the companion engineers detailed Level 4 schedule.

Metric	Level 3	Level 4 Engineering
Number of Activities	7,000	6,000
Relationships	15,000	12,000
Activity Codes	1,000	500
Activity Assignments	100,000	40,000
WBS Elements	1,700	2,300
Resource Assignments	3,000	5,000

In our activity table, there exist about 30 different fields. In the database your consultant will build, each of these fields may be loaded a separate row (unpivot your data). Therefore, if you have a schedule with 10,000 activities and if you provide a database consultant that schedule, they might create a table with roughly 300,000 rows just for 1 schedule

Time phase resource data? 3000 resource assignments * 70-100 weeks = 300,000 (unpivoted normalized data rows)

BUT we also have multiple data-series: Actuals, Forecast, Plan, CTD and incremental (P6 has almost unmeasurable amounts of data)

YOUR DATA

Where are you going to get your data
What are you planning on doing with it

→ HOW are you going to get and store your data
Flat Table Structures



Location/Package	Facility	Sub-Facility	Activity ID	Activity Name	Start	Finish	Remaining 3D Model	Units	Actual	Plan	Forecasted Field	30 Aug	4 Sep	5 Sep	6 Sep	25 Sep	Est 1
CR/Fau	Building 1	Interior Finishes	EC2170	Paint Inspection and Purchase	18-Apr-0	20-Apr-0	Dec. Dec.	90	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2170	Building 1 Finishes Complete	2-Jan-0	18-Jul-0	Dec. Dec.	480	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2260	Tenant Finishes for Clubhouse Area	18-Sep-0	20-Apr-0	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2160	Like Finishes Building South - Floor 1	21-Oct-11	30-Jan-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2160	Like Finishes Building South - Floor 1	26-Oct-11	2-Oct-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2160	Like Finishes Building South - Floor 2	27-Oct-11	8-Oct-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2160	Like Finishes Building South - Floor 2	2-Jan-11	30-Oct-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2160	Like Finishes Building South - Floor 2	18-Nov-11	21-Oct-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2160	Like Finishes Building South - Floor 2	27-Nov-11	30-Oct-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2160	Like Finishes Building South - Floor 4	15-Nov-11	28-Oct-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 1	Interior Finishes	EC2160	Like Finishes Building South - Floor 4	15-Nov-11	28-Oct-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Garage 1	EC2260	Fire Protection and Lighting	18-Apr-0	30-Jun-0	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 1	28-Feb-0	30-Jun-10	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 1	28-Feb-0	30-Jun-10	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 2	28-Feb-0	30-Jun-10	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 2	28-Feb-0	30-Jun-10	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 2	28-Feb-0	30-Jun-10	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 3	28-Feb-0	30-Jun-10	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 4	20-Mar-0	28-Feb-10	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 4	20-Mar-0	28-Feb-10	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Final Inspection and Purchase	4-Mar-0	5-Jul-0	Dec. Dec.	400	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Garage 2	EC2160	Fire Protection and Lighting	26-Oct-11	28-Feb-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Fau	Building 2	Interior Finishes	EC2160	Like Finishes Building South - Floor 1	15-Nov-11	30-Jun-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Intelect	Roach, Lobbies & Panels	Roach, Lobbies & Panels	EC2170	Electric to Building 2 Power Vault	15-Nov-11	30-Jun-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Intelect	Roach, Lobbies & Panels	Roach, Lobbies & Panels	EC2170	Electric to Building 2 Power Vault	15-Nov-11	30-Jun-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Intelect	Roach, Lobbies & Panels	Roach, Lobbies & Panels	EC2170	Electric to Building 2 Power Vault	15-Nov-11	30-Jun-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Intelect	Roach, Lobbies & Panels	Roach, Lobbies & Panels	EC2170	Electric to Building 2 Power Vault	15-Nov-11	30-Jun-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Intelect	Roach, Lobbies & Panels	Roach, Lobbies & Panels	EC2170	Electric to Building 2 Power Vault	15-Nov-11	30-Jun-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0
CR/Intelect	Roach, Lobbies & Panels	Roach, Lobbies & Panels	EC2170	Electric to Building 2 Power Vault	15-Nov-11	30-Jun-12	Dec. Dec.	300	0	0	0	0	0	0	0	0	0

ID	Facility	Plan	Forecasted Field	30 Aug	4 Sep	5 Sep	6 Sep	25 Sep	Est 1
2323 2323-20	M090	2323-20 - Facility 068 3D Model to 90% Review		11/6/2018 17:00	12/21/2018 17:00	12/21/2018 17:00	12/21/2018 17:00		0
2323 2323-30	M090	2323-30 - Facility 069 3D Model to 90% Review		11/11/2018 17:00	12/21/2018 17:00	12/21/2018 17:00	12/21/2018 17:00		0
2328 2328-10	M090	2328-10 - Facility 072 3D Model to 90% Review		4 12/8/2018 17:00	11/16/2018 17:00	1/29/2019 8:00	-748		-748
2328 2328-20	M090	2328-20 - Facility 073 3D Model to 90% Review		4 11/8/2018 17:00	11/15/2018 17:00	1/29/2019 8:00	-759		-759
1855 1855-10	M090	1855-10 - Facility 002 3D Model to 90% Review		6 7/27/2018 17:00	11/7/2018 17:00	1/25/2019 17:00	-888		-888
1856 1856-10	M090	1856-10 - Facility 003 3D Model to 90% Review		24 10/4/2018 17:00	11/28/2018 17:00	1/29/2019 17:00	-626		-626
1873 1873-15	M090	1873-15 - Facility 033 3D Model to 90% Review		89 11/2/2018 17:00	12/6/2018 17:00	1/29/2019 17:00	-544		-544
2323 2323-10	M090	2323-10 - Facility 067 3D Model to 90% Review		11 10/23/2018 17:00	11/14/2018 17:00	1/29/2019 17:00	-766		-766
2323 2323-30	M100	2323-30 - Facility 068 3D Model 100% AFC		9 11/7/2018 17:00	11/19/2018 17:00	1/29/2019 17:00	-751		-751

Standard Excel-ish Export

YOUR DATA

Do you need historical data?

- You likely already have historical data managed in source systems (P6, Ecosys)
- My recommendation – in your import files, include the relevant comparison data (prior month, baseline, etc). This allows your data to remain effectively stand alone to avoid having to compare data ingested this month, with data ingested last month.

Understand CADENCE

- We want real time data, but before you can get there your data is likely weekly/monthly. Thus ensure your uploads are aligned with your cadence

YOUR DATA

No data structure is better than a bad data scheme

**This is one of the initial hurdles you see in PowerBI
Resist the focus to build out complete data schemas for all
your domains and instead setup what you know will be a
flexible table structure that will change based on your import
files.**

**After you come to grasps with your source data and the
structure you are now comfortable using, then you can begin
to build a more formal structure and defined pipelines to push
your raw data into a data model.**

Dashboards – Data Management Metrics

The hardest part of dashboards is **DATA MANAGEMENT**

Your digital team will likely shield you from the harsh reality

- **Problem: Nothing is easy**

Example – A simple radial gauge showing progress vs plan
Answer: Better understand what your digital team is doing

If you feed a computer a data source, there is no innate way of knowing something as simple as “What is the current %”.

Therefore, we need to write some code

We need to know the data date?

Use the data date to then calculate the Actual %

.... Repeat for Plan %



```
M_Progress_Actual = CALCULATE (
SUM ( data1[Actual] ),
FILTER (
data1,
data1[DataDate] = MAX ( data1[DataDate] ) &&
data1[Date]=MAX(data1[DataDate]
)
))
```



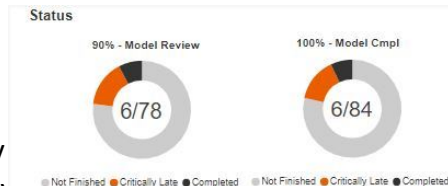
Dashboards – Data Management More Metrics

Example – A Simple Donut Chart

If you feed a computer a data source, there is no innate way of knowing something as simple as “How many activities have finished”. Therefore, we need to write some code

We need something we can COUNT?

We need a unique value



```
Activity_Status_Num =  
IF(ISBLANK(Schedule[Float]),1,IF(Schedule[Float]<1,2,0))
```

```
IsFinished = IF(ISBLANK(Schedule[Float]),1,0)  
DonutCounts = SUM(Schedule[IsFinished]) & "/" &  
COUNT(Schedule[ActivityDesc])
```



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The End Game!

What do you really want to achieve?



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Use Agile Management

- Agile allows individuals, project, teams to focus on specific tasks that drive a project to completion
- A few key terms:
 - EPICS (your WBS high level - area)
 - Backlog (your scope)
 - Burndown Charts (your progress curves)
 - User Story (a subset of a WBS)
 - Kanban (visual representation of your tasks and status)
 - Product Owner (area managers, OBS)
 - Sprints / Sprint Planning (Feasibility studies)
 - Retrospective (lessons learned)

The Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Use Agile Management

- USE JIRA

Example:
Substation Shipping, Manufacture, Site Concrete?



Visual Representation Of Activities

STATUS
Doing

TEAM NAME
None

START DATE
2019/09/02

END DATE
2019/10/01

ACTIVITY ID
1392E75-CC010

Data Integration

1392-99 Sub (SUB999) - Concrete

Description
Add a description...

Attachments
BIM-C MODEL SUB999 Main Layout

Linked Issues
1392-99 Sub (SUB999) - Concrete

Activity Comments
Derek Murray (author) 2019-09-02 10:02 AM Edited
To area highlighted green needs to be handed over prior to 10/02/2019. see email from Derek etc.

STATUS
Doing

TEAM NAME
None

START DATE
2019/09/02

END DATE
2019/10/01

ACTIVITY ID
1392E75-CC010

LINKED ISSUES
None

BASELINE END DATE
None

WORKSHEET HISTORY
None

PROJ ID
1392-99 Sub (SUB999) - Concrete

ACTIVITY ID
1392E75-CC010

Comments & Discussion About Activities

Facilitate Live Real Time Data

Live Real Time Data Exists

- Challenge: Finding it and being able to pull it out and apply context
- **Answer: Can you build your progress base from documents and ITR records in your document control system?**

Too often finding actual status requires monthly reports, or perhaps massive quantity/manhour progress files (updating manually in excel). This information then needs to be uploaded into some system (Ecosys/COBRA). However, progress occurs in real time and is visible or discoverable!



aconex



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Be Hyper Reactive

Do you have the tools/data to question everything?

This is our end game!

We want to positively impact the decisions that need to be made,

We want to capture the decisions that are made in the first place to cause changes to projects

We want to get in front of decisions in the first place!

If the techniques discussed here are used to manage data are followed, you will begin to have a framework from which you can operate to have a hope to be hyper reactive.

For HPYER REACTIVITY, I have already touched on this during our substation example – IF everyone on the project records all their tasks, directions, decisions live in a system like JPA, the VISIBILITY of those decisions becomes open to everyone and can be QUESTIONED

Conclusion