Using Automation to Lighten Your Load

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Agenda

What's in it for my teammates?

What's in it for me?

How do I do that?

What tools are available?

What's gone wrong so far?

Questions?

Introduction

- Effectively using the tools available allow us to focus more on problem solving and less on manual data entry, subject to human error and hours of data mining. What could you do with an hour a day?

What's in it for my teammate?

- TIME

- Project Management Maturity

- Data-Driven Decision-Making Tools

What's in it for me?

- Human Error

- TIME

- Project Management Maturity

- Data-Driven Decision-Making Tools

How do I do that?

- Schedule Summits

- Hyperlinks between Projects/Reporting at 'Intersections'

- Diagnostics as a flag tool for integrity and potential action

- Pre-Prepared 'what-if' scenario preparation

- Cost & Risk Sanity Check/Impact Analysis

How Long Does it take to program hyperlinks?

Times my vary. Project times via example about 5,000 lines with both GRC work and Contractor Work. Later, fab shop work was integrated also.
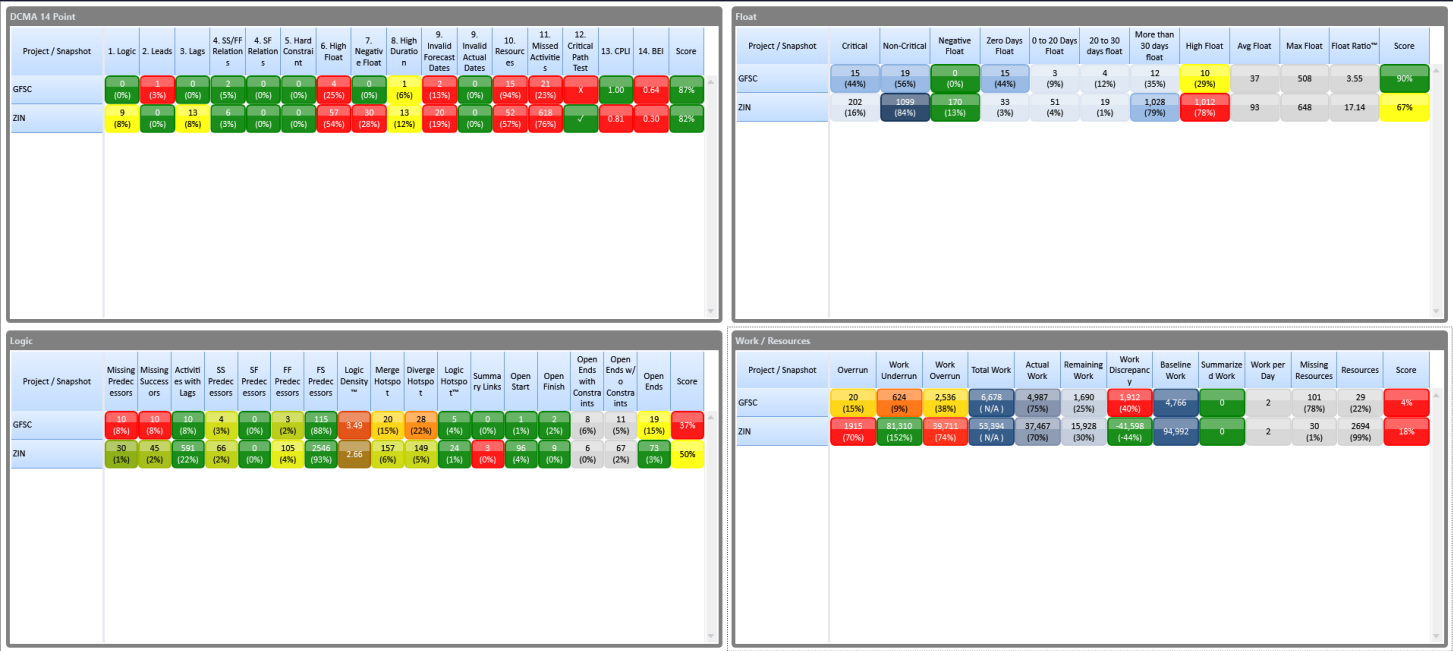
- Time to establish Masterfile on hard drive or SharePoint: 2 Min

- Time to establish Hyperlinks and save in Word file for reference: 4 min

- Schedule summits to identify and program potential intersections: 3 hours for myself and the GRC PM, 2 hours for ZIN PM, 1 hour for team leads (needs done with or without schedule integration)

- Programming hyperlinks: 1 hour

- Data mining time saved: 25 min before starting analysis every other week, plus 10 min each for 3 short reports- average of 2 hours per month

- Butter fingers time saved spent on sanity checking hyperlinks monthly

- Average 120 Min/Month x 2 projects = 4 hours per month plus much information gathering meetings required before integration for me

- Fab Scheduler = 20 min per month

- Project Manager = at least a couple hours of meetings and several emails per month, and all time between initially discovering a situation and having options available to deal with them.

How does this work with Excel Reporting?

- 1. In Project, click copy cell

- 2. In Excel, click Paste -> Special Paste -> Paste Link -> Text.

- Method shows time at snapshot

- Time Spent in Set Up for one report with 32 Hyperlinks: 14 Minutes

  - Bonus: if linked to a SharePoint or shared drive that the teammates have access to, clicking on the link will take you TO THAT SPOT in the schedule where the date came from. If you have a PM that wants file access, this may reduce a few questions as well. Also works with PDF. Or can be done with 'existing connections' at the top of the data tab to view original source if saved on one hard-drive.

  - IF you want to redirect to a location and have it automatically updated you can do this with Macros/VBA Programming to search and pull by file name and UID, provided you save the file in the same place and with the same naming convention each month.

  - Another option is to use the data connection feature in excel to import the MPP file, and direct back to a specific cell. (I recommend more manual review/sanity check) in case of many changes.

	Baseline	Promise Date	12/1/22	1/3/22	2/3/22	3/2/22	4/4/22
	9/1/2021		12/16/2021				
Test Chamber Manufacturing Complete (403)	11/9/2021		1/31/2022	1/27/2022	2/18/2022	3/11/2022	4/8/2022
Sign MOA (488)	n/a		1/31/2022	1/31/2022	3/7/2022	3/28/2022	4/15/2022
Assemble upper chamber housing (287– the Glenair part)	11/16/2021		2/4/2022	2/2/2022	2/25/2022	3/23/2022	4/14/2022
Close RFA Action Items (405)	11/2/2021		3/1/2022	2/28/2022	3/31/2022	4/15/2022	5/31/2022
Review & compile EM Unit Data Package (284)	12/28/2021		3/2/2022	2/28/2022	4/27/2022	4/27/2022	5/9/2022
Test Chamber Testing at GSFC Complete (404)	12/22/2021		3/18/2022	3/16/2022	4/27/2022	5/17/2022	6/24/2022
Deliver test chamber to ZIN (337)	12/28/2021	11/15/2021	3/23/2022	3/21/2022	4/27/2022	5/20/2022	6/29/2022
	unknown, pre–						
TEC Controller Complete (812)	12/22/2020	n/a	6/25/2021	4/15/2022	4/15/2022	4/15/2022	4/15/2022
MSG Cable Assemblies Complete (1544)	n/a	n/a	11/26/2021	12/7/2021	12/7/2021		
MSG Mechanical Assemblies Complete (4360)	n/a	n/a	11/23/2021	12/10/2021	12/10/2021		
MSG Cables Complete (975)	n/a	n/a	3/21/2022	1/13/2022	2/2/2022	3/7/2022	3/8/2022
Software Development Complete (955)	n/a	n/a	2/4/2022	2/4/2022	2/4/2022	2/18/2022	4/15/2022
HW Cable assemblies complete (2578)	n/a	n/a	2/7/2022	2/23/2022	2/24/2022	3/17/2022	4/4/2022
Mechanical Sub-assemblies complete (956)	n/a	n/a	2/11/2022	3/2/2022	3/3/2022	3/8/2022	3/8/2022
EHD EM Top Assembly Complete (5305)	n/a	n/a	2/23/2022	3/11/2022	3/14/2022	3/17/2022	4/28/2022
Power Distribution Complete (891)	n/a	n/a	n/a	4/20/2022	4/21/2022	5/24/2022	8/1/2022
GSE Cables Complete (5461)	12/22/2020	n/a	4/29/2022	4/21/2022	5/20/2022	11/2/2022	12/21/2022
Imaging System Complete (616)	n/a	n/a	3/30/2022	4/25/2022	4/25/2022	5/27/2022	8/4/2022
DACU enclosure Complete (748)	12/22/2020	n/a	3/25/2022	4/21/2022	4/19/2022	5/20/2022	7/28/2022
80% of safety verifications complete (175)	11/22/2022	n/a	7/19/2023	8/14/2023	8/15/2023	9/28/2023	10/26/2023
Milestones	from ZIN baseline						
Phase 0/1 FSR (66)	7/10/2020	12/16/2021	12/16/2021	12/16/21			
CDR (112)	5/28/2021	5/15/2022	5/13/2022	6/9/2022	6/10/2022	7/26/2022	9/12/2022
Phase 2 FSR (118)	5/14/2021	7/12/2022	7/14/2022	8/9/2022	8/10/2022	9/22/2022	11/9/2022
Phase 3 FSR (180)	3/28/2023	10/24/2023	11/16/2023	12/13/2023	12/14/2023	1/18/2024	2/14/2024
FHA	4/4/2023	1/15/2024	11/16/2023	12/13/2023	12/14/2023	1/18/2024	2/14/2024
Ops start	7/27/2023	5/15/2024	2/16/2024	3/14/2024	3/15/2024	4/26/2024	5/10/2024
ORR	7/26/2023	4/15/2024	2/26/2024	3/21/2024	3/22/2024	5/20/2024	5/20/2024
Ops end	8/30/2023	8/15/2024	3/22/2024	4/17/2024	4/18/2024	5/20/2024	6/17/2024
Final Science Report	2/29/2024	8/15/2025	9/27/2024	10/24/2024	10/25/2024	9/23/2024	10/21/2024
*Needs Historical Milestones							
		Project Management Margin Remaining:		0 Days	0	0	0
		Negative Slack to next milestone (CDR):		-113 Days	-114 Days	-144 Days	-177 Days

What do the analytics/flags look like by integrated project or portfolio?

DCMA 14 Point

Project / Snapshot	1. Logic	2. Leads	3. Lags	4. SS/FF Relations	4. SF Relations	5. Hard Constraint	6. High Float	7. Negative Float	8. High Duration	9. Invalid Forecast Dates	9. Invalid Actual Dates	10. Resources	11. Missed Activities	12. Critical Path Test	13. CPLI	14. BEI	Score
GFSC	0 (0%)	1 (3%)	0 (0%)	2 (5%)	0 (0%)	0 (0%)	4 (25%)	0 (0%)	1 (6%)	2 (13%)	0 (0%)	15 (94%)	21 (23%)	X	1.00	0.64	87%
ZIN	9 (8%)	0 (0%)	13 (8%)	6 (3%)	0 (0%)	0 (0%)	57 (54%)	30 (28%)	13 (12%)	20 (19%)	0 (0%)	52 (57%)	618 (76%)	✓	0.81	0.50	82%

Float

Project / Snapshot	Critical	Non-Critical	Negative Float	Zero Days Float	0 to 20 Days Float	20 to 30 days Float	More than 30 days float	High Float	Avg Float	Max Float	Float Ratio™	Score
GFSC	15 (44%)	19 (56%)	0 (0%)	15 (44%)	3 (9%)	4 (12%)	12 (35%)	10 (29%)	37	508	3.55	90%
ZIN	202 (16%)	1099 (84%)	170 (13%)	33 (3%)	51 (4%)	19 (1%)	1,028 (79%)	1,012 (78%)	93	648	17.14	67%

Logic

Project / Snapshot	Missing Predecessors	Missing Successors	Activities with Lags	SS Predecessors	SF Predecessors	FF Predecessors	FS Predecessors	Logic Density™	Merge Hotspot	Diverge Hotspot	Logic Hotspot™	Summary Links	Open Start	Open Finish	Open Ends with Constraints	Open Ends w/o Constraints	Open Ends	Score
GFSC	10 (8%)	10 (8%)	10 (8%)	4 (3%)	0 (0%)	3 (2%)	115 (88%)	3.49	20 (15%)	28 (22%)	5 (4%)	0 (0%)	1 (1%)	2 (2%)	8 (6%)	11 (5%)	19 (15%)	37%
ZIN	30 (1%)	45 (2%)	591 (22%)	66 (2%)	0 (0%)	105 (4%)	2546 (93%)	2.66	157 (6%)	149 (5%)	24 (1%)	3 (0%)	96 (4%)	9 (0%)	6 (0%)	67 (2%)	73 (3%)	50%

Work / Resources

| Project / Snapshot	Overrun	Work Underrun	Work Overrun	Total Work	Actual Work	Remaining Work	Work Discrepancy	Baseline Work	Summarized Work	Work per Day	Missing Resources	Resources	Score
GFSC	20 (15%)	624 (9%)	2,536 (38%)	6,678 (N/A)	4,987 (75%)	1,690 (25%)	1,912 (40%)	4,766	0	2	101 (78%)	29 (22%)	4%
ZIN	1915 (70%)	81,310 (152%)	39,711 (74%)	53,394 (N/A)	37,467 (70%)	15,928 (30%)	-41,598 (-44%)	94,992	0	2	30 (1%)	2694 (99%)	18%

High float indicates artificial constraints and an unrealistic plan, a need for schedule optimization.   (combined with negative float- most relevant metrics/warnings, most else is in support of this). Items of relevance: Negative float on 1(unrealistic schedule continues to slip), detail and logic on 2 appropriate, 1 detail level could indicate minimal . planning in next period of performance on 2's side. High float on 2's side. New Resource Metrics show high resource overallocation- Schedule needs planning to FHA, resource loaded & leveled to evaluate realism

What Tools are available?

- Microsoft Project/P6

- Whiteboard/Mural (entire O365 Platform)

- Acumen Fuse

- Excel

- C: Drive, SharePoint, Approved Hosting Tools

- Timeline, Power BI & Power Automate, Teams

What's gone wrong so far?

- Inherited Schedules (change in teams or PTO)

- High Team Collaboration Required

- Rapid changes in Cultural Growth

- Make your dependencies visible

- 'Next level' has training needs beyond the scope of our existing easy availability

- Use UID predecessors and successors for hyperlinks to adjust line numbers for you

- Sanity Check
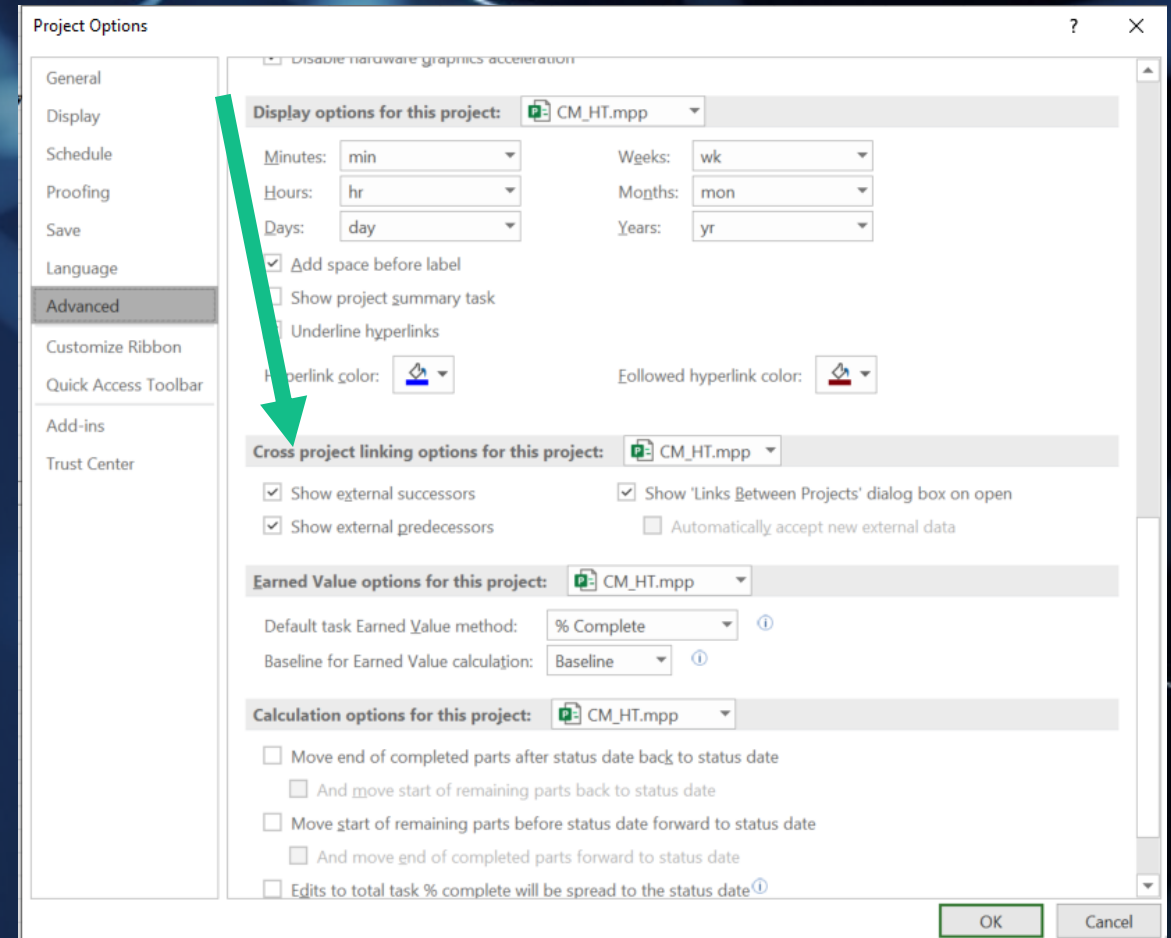
How can you use these tools to lighten the load for you and your teammates?

Questions & Thank You

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