

Maximo:Primavera Scheduling Interface

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Seattle, WA

Chelan County PUD

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Scheduler Sr, Generation & Transmission



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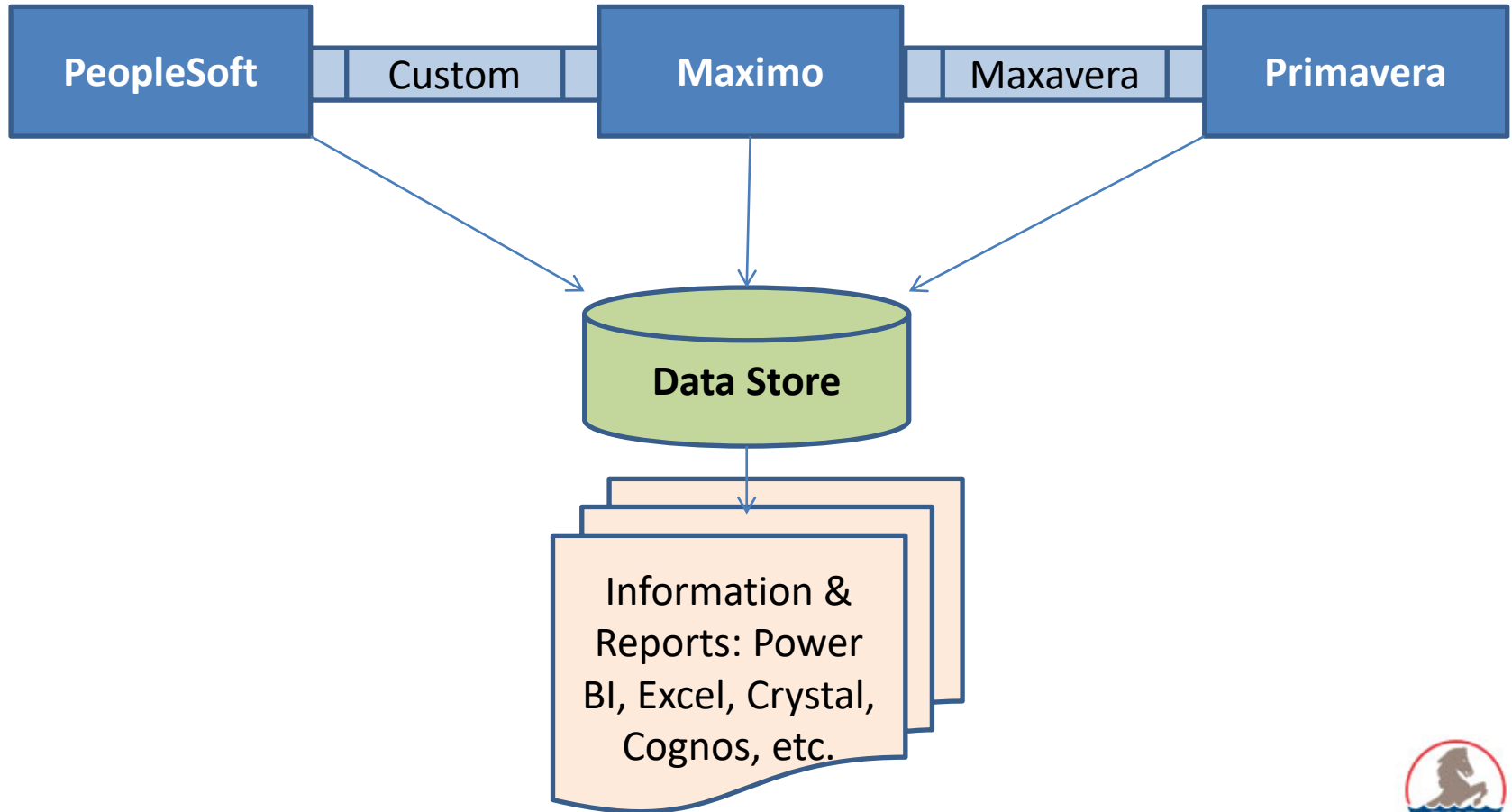
Today's Topics

- Background / History
- Current System Overview
 - Components
 - Specifications
 - System Design
 - Maxavera Details
- Benefits / Outputs
 - Workforce Management
 - Budget & Forecasting
 - Project / Portfolio Management
- Lessons Learned
- Remaining Work
- Q&A

Background / History

- Late 1990's: Maximo brought to District
- Early 2000's to 2006: Build static MicroSoft Project “work plan” from Maximo using Splink
- 2005: Primavera Introduced (still used Splink)
- 2007: Pilot to Manually update Primavera – make the work plan “dynamic” (it failed)
- 2009/2010: Maxavera Introduced
- 2012: Maxavera was customized; Data warehouse and reporting work initiated

Current System Overview – Components



Current System Overview – Specifications

- Ability to include both routine (PM) and project work
- Project work:
 - Can be planned in Primavera OR Maximo OR not at all
 - Can have labor planned at the resource type / work group OR resource level
 - Should be scheduled with the scheduling tool (Primavera)
- Routine work should be as automated as possible:
 - Work order actuals and statuses automatically update Primavera remaining units and statuses
 - Certain work orders know how to get to the appropriate locations in Primavera and do so on their own

Current System Overview – System Design

Workflow should leverage existing information

INPUT PROCESSES

Initiate/ Plan

Enter & route
service
request in
Maximo OR
build/modify
PMs

Build
schedule in
Primavera



Build work
orders in
Maximo

*Execute/
Control*

Manage
schedule in
Primavera

Manage work
orders status
in Maximo

Actuals are
reported and
post in
PeopleSoft

*Turnover/
Closeout*

Archive
schedule in
Primavera

Close work
orders in
Maximo

Support
closure of
PeopleSoft
Projects



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Current System Overview – System Design

- All information but dates are “**owned**” by Maximo (Note – Dates owned by Maximo for routine work/PMs; Dates owned by Primavera for Projects)
- Putting an activity “**In Progress**” in Maximo causes it to start in Primavera
- Putting an activity into “**Complete**” status in Maximo causes it to complete in Primavera
- Changing dates in Primavera on Projects causes a change in the “**schedule**” dates in Maximo when actual dates don’t exist



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Current System Overview – System Design

- Projects are manually generated in Primavera then work orders sent in as activities. Work orders can “find” their way into their projects by:
 - Using parent hierarchy and making the project ID in Primavera match a parent OR
 - Based on general ledger information (custom code facilitates this)
- Work order class work orders and tasks become activities in Primavera projects, job class and project class work orders do not become activities in Primavera projects



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Current System Overview – System Design

Maximo was modified to tell a work order where to land in Primavera (Project location is automatic)

Work Order Tracking - Windows Internet Explorer

http://maxipro.domain1.chelan/maxipro/ui/?event=loadapp&value=wotrack&uissessionid=904

Work Order Tracking

Work Order Tracking

Work Order: 278875

Parent WO: 258910

Asset: 13917

Location: 25345

Classification: []

Class Description: []

Vicinity: []

Work Zone: HTCH

Circuit: []

Asset System: HATCHERY

WO Class: WORKORDER

Work Type: CNST

Sub-Type: []

Changed By: MAXAVERA

Changed Date: 10/10/2012 11:35 PM

Attachments

Status: INPRG

Status Date: 10/09/2012 7:32 AM

Last Work Log Date: 10/10/2012 8:15 AM

Inherit Status Changes?

Accepts Charges?

Reported By: Pickthorn, Darren L

Reported Date: 08/08/2012 12:46 PM

On Behalf Of: Pickthorn, Darren L

Phone: 509-861-4922

Originating Record: 15183

Has Follow-up Work?

Originating Record Class: SR

Job Details

Job Plan: []

PM: []

Contract: []

Special Permits: []

Asset/Location Priority: 2

Priority: []

Priority Justification: []

Included on Work Plan?

Failure

Outage Type: []

Outage No.: []

Failure Class: []

Problem Code: []

Asset Up?

Warranties Exist?

Plan

Planning Work Group: TEC

Planning Resource Type: PT-PLNPC

Planning Skill Level: []

Planning Resource: TECH1

Design

Design Work Group: []

Design Resource Type: []

Design Skill Level: []

Design Resource: []

Execute

Work Group: TEC

Resource Type: TECH

Skill Level: TCHN

Resource: 060285

Technician Shop

Technician

Miller, Josh

Scheduling Information

Target Start: 08/08/2012 4:25 PM

Scheduled Start: 10/10/2012 8:00 AM

Actual Start: 10/09/2012 7:32 AM

Estimated Labor Hours: 80.00

Duration: 0.00

Target Finish: 10/31/2012 4:28 PM

Scheduled Finish: 11/27/2012 5:00 PM

Actual Finish: []

Time Remaining: []

Ancillary Scheduling

Shift Indicator: []

Calendar: []

Interruptible?

Downtime?

Account Details

GL Account: RROP-7510-?????-54510-HTOM0089

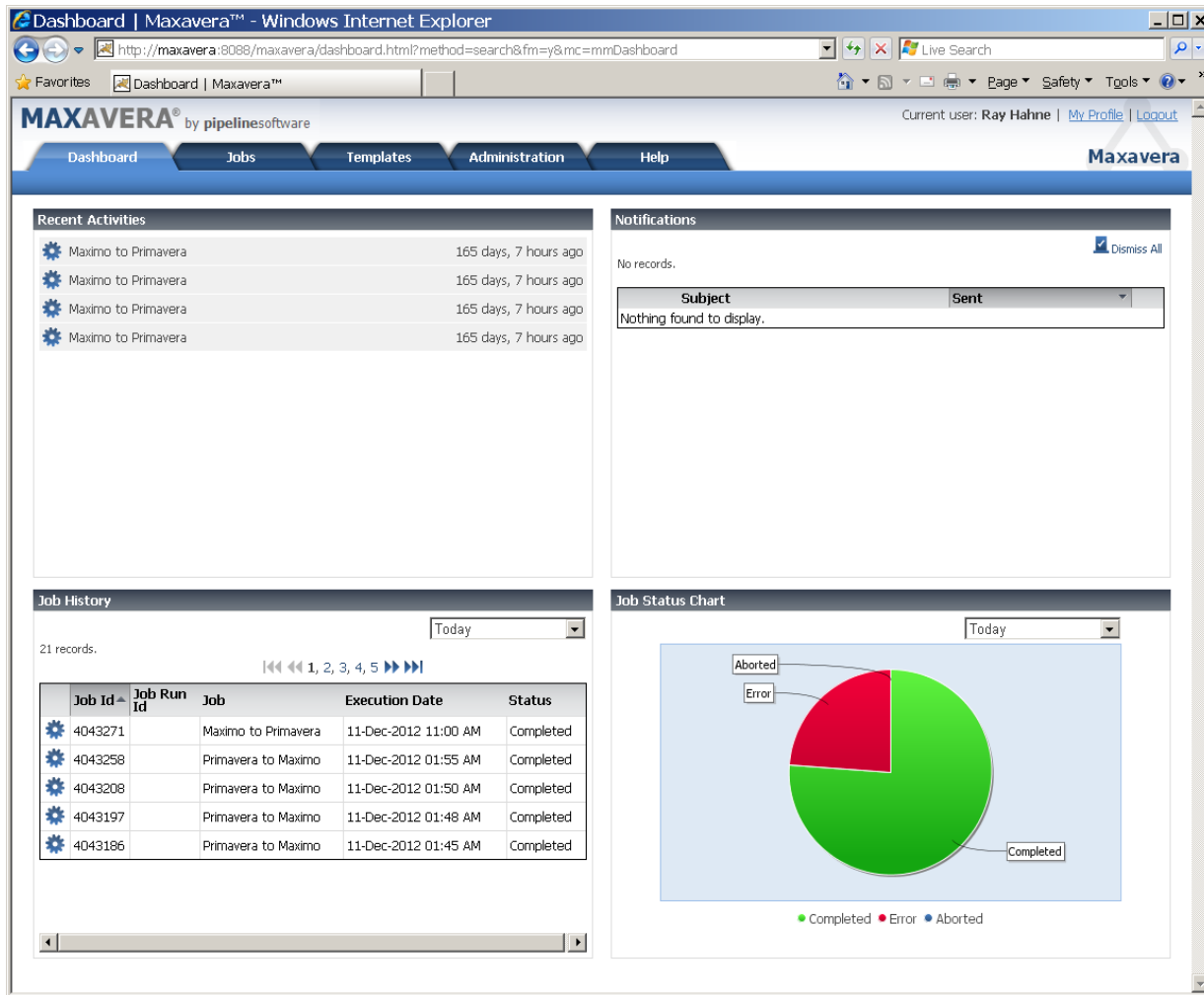
Plant Account: []

Line Extension Number: []

Primavera Project: 258910

Primavera WBS: 3

Current System Overview – Maxavera Details



- Run Primavera to Maximo to set dates, then
- Maximo to Primavera to bring in new data then
- Primavera to Maximo to apply calendar dates

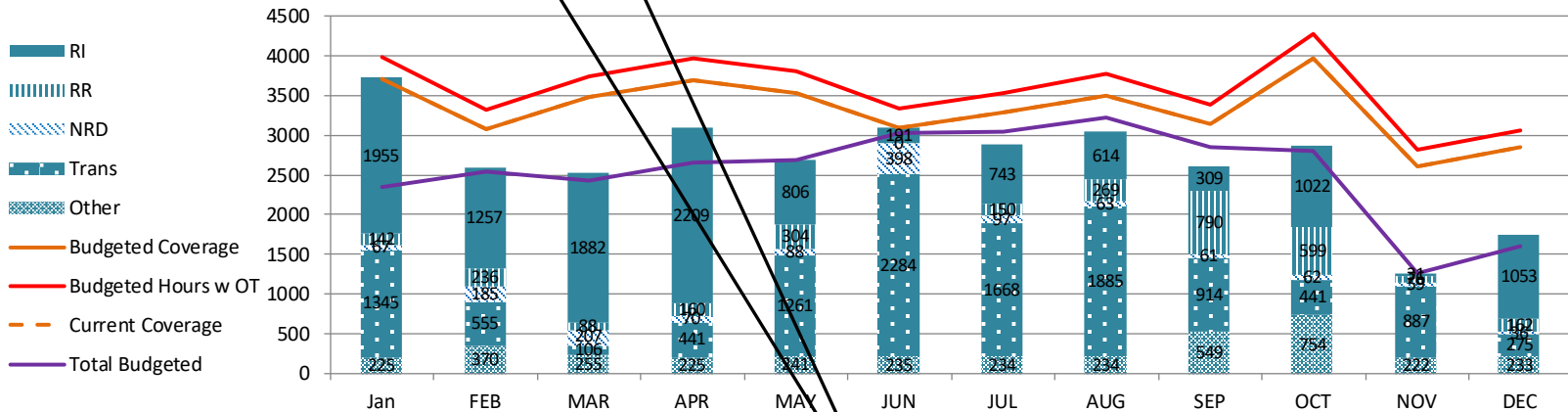
Current System Overview – Maxavera Details

- Maximo caused system limitations of 5,000 records per variant run
 - Maximo to Primavera variants based on work order status
 - Primavera to Maximo variants are based on the Enterprise Project Structure in Primavera
- All variants are scheduled and run nightly after payroll processes and before data warehouse updates

Benefits / Reporting - Workforce Management

- Line of sight for monthly and annual labor needs for projects and maintenance
- Expected OT vs. budgeted OT vs. actual OT comparisons
- Ability to evaluate various scenarios on resource allocations
- Visibility of resource shortages dynamically updated using existing information
- Effects of project scope and schedule changes on resource availability
- Five-year resource planning

ELMT.CM		1	1	0	0	1	0	1	0	1	0	2	1	
		Jan	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Totals
CURRENT	Working days	22	19	21	22	22	20	22	22	20	24	19	21	254
	RI	1955	1257	1882	2209	806	191	743	614	309	1022	31	1053	12071
	RR	142	236	88	160	304	0	150	269	790	599	76	162	2976
	NRD	67	185	207	70	88	398	97	63	61	62	59	36	1393
	Trans	1345	555	106	441	1261	2284	1668	1885	914	441	887	275	12062
	Other	225	370	255	225	241	235	234	234	549	754	222	233	3776
	Current Work	3734	2603	2539	3105	2700	3108	2892	3064	2624	2877	1275	1759	32279
	Change in Leave	0	0	0	0	0	0	0	0	0	0	0	0	0
	Current Coverage	3703	3075	3478	3689	3535	3099	3283	3504	3135	3974	2611	2842	39928
	OT Needed	31	0	0	0	0	9	0	0	0	0	0	0	40
	% OT Needed	0.8%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
	Non OT Hours Available	0	472	939	584	835	0	391	440	511	1097	1336	1083	7689
	Contingency Used	1381	56	107	445	5	83	-160	-155	-220	79	13	157	1792
Contingency Remaining	219	794	1293	805	1080	347	702	697	869	1196	1487	1243	10731	
BUDGET	Total Budgeted	2353	2546	2432	2660	2695	3024	3052	3219	2844	2798	1262	1602	30487
	Budgeted PL/Float/Holiday	260	348	305	274	428	504	680	460	468	349	812	941	5830
	Budgeted % PL/Float	1.9%	3.9%	6.9%	6.2%	5.7%	11.4%	11.4%	10.4%	6.6%	7.9%	10.4%	17.3%	100%
	Budgeted Coverage	3703	3075	3478	3689	3535	3099	3283	3504	3135	3974	2611	2842	39928
	Budgeted Hours w OT	3989	3312	3746	3974	3808	3338	3536	3774	3377	4281	2812	3061	43008
	Budgeted OT	286	237	268	285	273	239	253	270	242	307	201	219	3080
	Budgeted Contingency	1600	850	1400	1250	1085	430	542	542	649	1275	1500	1400	12523



Can see what is happening which initiates communication concerning a possible increasing workload well in advance

Benefits / Reporting - Budget & Forecasting

- A “system” to generate a feed for budgeting or forecasting to specific efforts (routine or project) that leverages existing planning
- Ability to explore “what-if” scenarios where changes in the work plan can quickly be pushed through to provide feeds for budgeting or forecasting
- Five-year financial forecasts

Benefits / Reporting – Project / Portfolio Management

- Project costs, resources & schedule comparisons of estimates, budgets and actuals (project controls)
- Coordination of outage related projects & PMs
- Current project scope information electronically accessible from anywhere in the District without duplicate input
- Multiple years of projects organized by program and portfolio, including resource requirements
- Project Prioritization / Portfolio Management

Power BI reports have been built for increased visibility to resources utilizing multiple filters as needed.

ESP, CM, CME, CM1 Resource Hours Remaining Hours		Labor Name	Work Order Code	Project Code	Role Code	Project Class						
		All	All	All	MECH.CM	Multiple selections						
						Search						
						<input type="checkbox"/> ELMT.CM	10	11	12			
						<input type="checkbox"/> ENGCE.ESP						
						<input type="checkbox"/> ENGEE.ESP	84.3	146.6	95.			
						<input type="checkbox"/> ENGM.EESP	179.2	174.6	127.			
						<input type="checkbox"/> GRPCM.ESP	169.4	98.6	125.			
						<input checked="" type="checkbox"/> MECH.CM	4.4	4.2	4.			
						—	188.8					
Unassigned	MECH.CM	<input type="checkbox"/> 452976	<input type="checkbox"/> RI PH1 B-3 OVH & Warrant...	<input type="checkbox"/> Kevin Toney								
		<input type="checkbox"/> YHT001	<input type="checkbox"/> Hatchery Routine	<input type="checkbox"/> Ian Adams	446.8	407.8	121.0					
		<input type="checkbox"/> YGN013	<input type="checkbox"/> RI Powersystems PH2 Routi...	<input type="checkbox"/> Kevin Toney	249.8	169.2	164.2					
		<input type="checkbox"/> YCM001	<input type="checkbox"/> CM Routine	<input type="checkbox"/> Tony Nelson	420.2	110.0	98.6					
		<input type="checkbox"/> 486540	<input type="checkbox"/> RI PH2 U-4 Overhaul 2024	<input type="checkbox"/> Kevin Toney	881.4	550.8						
		<input type="checkbox"/> 466404	<input type="checkbox"/> RI PH1 B-9 OVH Work Only...	<input type="checkbox"/> Brian Odell	546.2	75.2	499.0					
		<input type="checkbox"/> YGN008	<input type="checkbox"/> RR Reservoirs and Dams Ro...	<input type="checkbox"/> Alan Eastridge	250.6	188.8	183.4					
		<input type="checkbox"/> 529399	<input type="checkbox"/> RR Hydro NPDES Implemen...	<input type="checkbox"/> Tim Scheumann	34.9	181.5	180.6	186.5	186.5	87.8		
		<input type="checkbox"/> YGN012	<input type="checkbox"/> RI Powersystems PH1 Routi...	<input type="checkbox"/> Kevin Toney	171.5	29.6	68.6	69.6	69.6	68.6	67.0 126.2 118.	
		<input type="checkbox"/> 409239	<input type="checkbox"/> RR JFB Rehab	<input type="checkbox"/> George Velazquez							292.3 476.	
		<input type="checkbox"/> YGN001	<input type="checkbox"/> RI PH1 Generating Unit Rou...	<input type="checkbox"/> Kevin Toney	598.0	22.0	21.4	14.4	4.4	44.4	2.4 2.4 2.	
		<input type="checkbox"/> YGN004	<input type="checkbox"/> RR Generating Units Routine	<input type="checkbox"/> Alan Eastridge	482.8	69.4	58.0					
		<input type="checkbox"/> YGN006	<input type="checkbox"/> LC Reservoirs and Dams Ro...	<input type="checkbox"/> Alan Eastridge	506.7	50.2						
		<input type="checkbox"/> YGN015	<input type="checkbox"/> RR Powersystems Routine	<input type="checkbox"/> Alan Eastridge	23.2	88.2	83.2	129.8	79.0	76.6	6.0 6.0 6.	
		<input type="checkbox"/> YFP002	<input type="checkbox"/> RR Fishway Routine	<input type="checkbox"/> Alan Eastridge	278.0				48.8	47.2	11.8 80.	
		<input type="checkbox"/> 516748	<input type="checkbox"/> RI Spillway Crack Repairs	<input type="checkbox"/> Tim McMaster	422.6	2.8	2.6	2.8	2.8	2.6	2.8 2.6 2.	
		<input type="checkbox"/> 431872	<input type="checkbox"/> RI PH2 U-7 DTG Cyl & HPU ...	<input type="checkbox"/> Devin Myers				240.0		120.0	57.8 22.	
		<input type="checkbox"/> YFP004	<input type="checkbox"/> LC Habitat Spawn InfractRo	<input type="checkbox"/> Alan Eastridge	159.9	4.6	70.5	78.0	75.5			

Lessons Learned

- Establish Process; Ensure it is well documented; Evaluate on establish basis; Update as needed
- Train all parties involved in process
- Change management is critical
- Know your sponsors and champions - Use them to test
- There WILL BE a lot of clean up

Remaining Work

- Further develop process and roles & responsibilities to ensure sustainability, accurate reporting, full enterprise utilization
- Document and train on bullet one
- Continue development of the data warehouse and final report delivery and enhancement -
- Entertain additional system “tweaks” for further enhancement
- Upgrade Primavera then use SOA to integrate Role & Resource data between Primavera and Maximo
- Enterprise Project/Portfolio Prioritization
- Five year plan and weekly scheduling

Questions??

