Driving Down Cost Through Operational Efficiency

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Solving challenges.™

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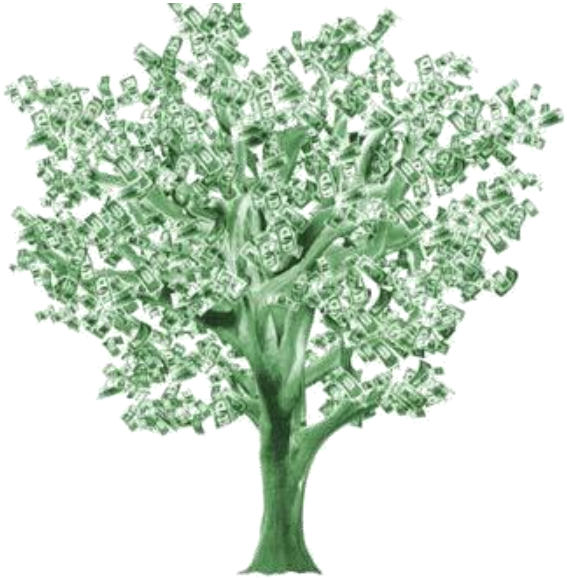
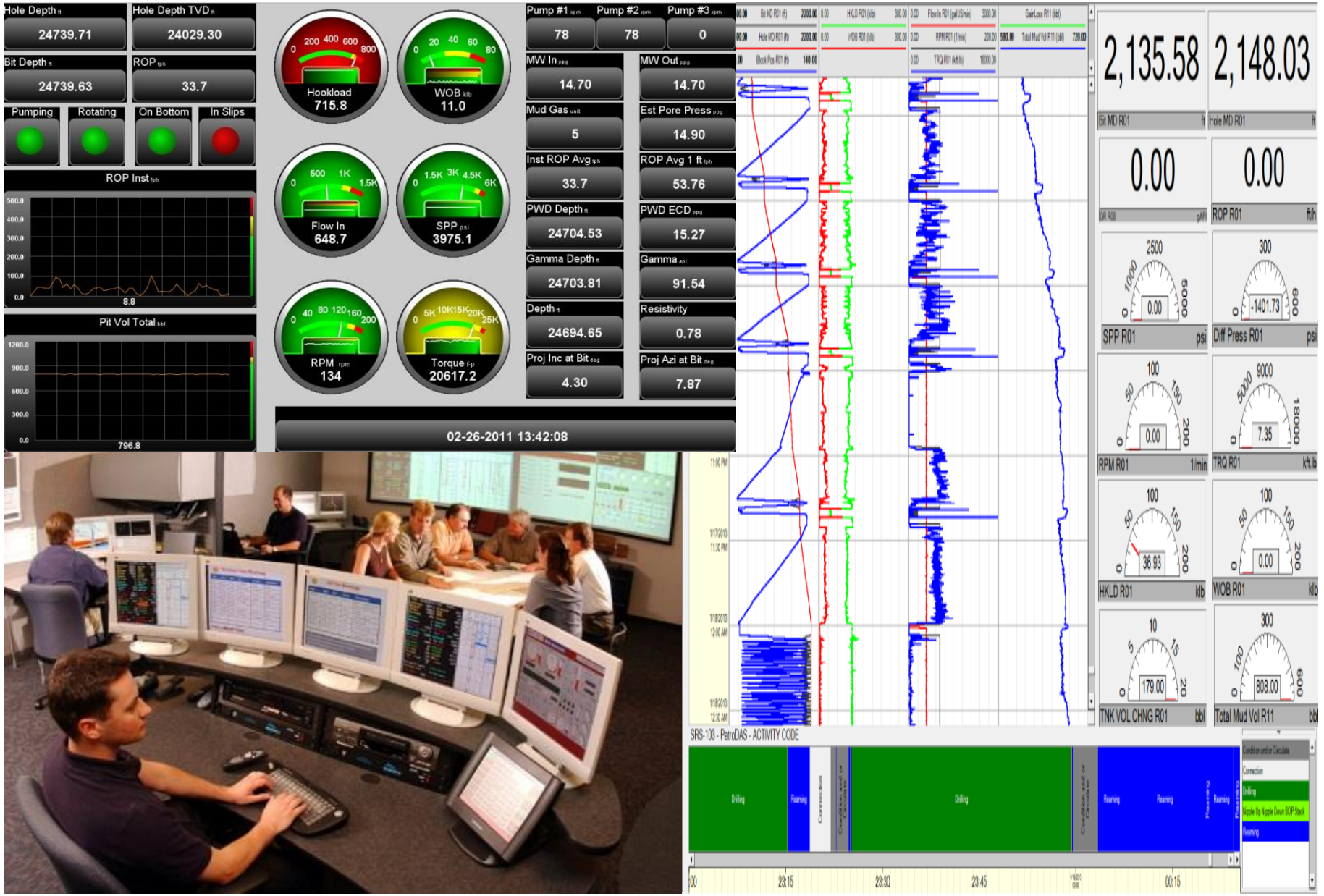
- Safest, Cheapest Way Possible
- R.O.I is paramount



Time Summary			
Time From	Duration	Phase	Descriptions
6:00	1.00	DRLIN1	POOH WITH HWDP AND BHA. B/O BIT.
7:00	1.50	DRLIN1	R/U TO RUN 3-1/2" CMT STINGER. M/U MULE SHOE AND RIH 4 STANDS CMT STINGER. CHANGE OF PROGRAME. POOH.
8:30	4.50	DRLIN1	PREPARE AND M/U 12-1/4" SEMI-BUILD ROTARY BHA AND RIH WITH 5" HWDP TO 1190 FT. STATIC LOSSES ZERO.
13:00	2.00	DRLIN1	RIH TO SHOE AT 4187 FT. HOLD KICK DRILL.
15:00	1.00	DRLIN1	DISPLACE 186 BBL SEA WATER OUT OF ANNULUS. OBSERVE WELL. DYNAMIC AND STATIC LOSSES ZERO
16:00	1.50	DRLIN1	RIH TO 4864 FT. OBSERVE RESISTANCE.
17:30	5.00	DRLIN1	REAM TIGHT SPOT AT 4864 FT. AT THIS TIME OBSERVE HEAVY BACK FLOW DUE TO DIFFERENCE IN MUD WEIGHT IN-OUT 13.2 PPG - 13.4 PPG. THEREFOR CONTINUE WASH/REAM TO BOTTOM. REAM WITH LIGHT RESISTANCE DUE TO DIFFERENCE IN BHA. REASONABLE AMOUNTS DRY CRISPY SMALL CUTTINGS OVER SHAKERS. ONLY SHOWS OF VERY FEW CAVINGS. NO SHOWS OF CHALK. PACKED-OFF AT 6700 FT AND PIPE STUCK. JARRED FREE WITH 170 KLBS OVERPULL DURING TRIP AND REAMING NO LOSSES.
22:30	0.50	DRLIN1	TAG BOTTOM AT 7475 FT. TOTAL LOSSES. DRILL 5 FT TO 7480 FT.
23:00	1.00	DRLIN1	PUMP 100 BBL LCM PILL # 4 (100 PPB ANCO FIBER, MICA FINE AND COARSE, NUT PLUG FINE AND COARSE). MEANWHILE FILL ANNULUS WITH 125 BBL SEA WATER VIA TRIP TANK.
0:00	0.50	DRLIN1	POOH TO 7055 FT.
0:30	3.00	DRLIN1	MONITOR WELL OVER TRIP TANK WHILE SOAKING LCM PILL. INITIAL 30 BPH LOSSES REDUCING TO ZERO. MEAN TIME BUILD MUD STOCK. AT THIS MOMENT +/- 160 BBL SEA WATER IN ANNULUS.
3:30	1.50	DRLIN1	CIRCULATE 196 BBL MUD IN AND SEA WATER OUT. DUMP SEA WATER OVER TRIP TANK. LOST +/- 100 BBL MUD.



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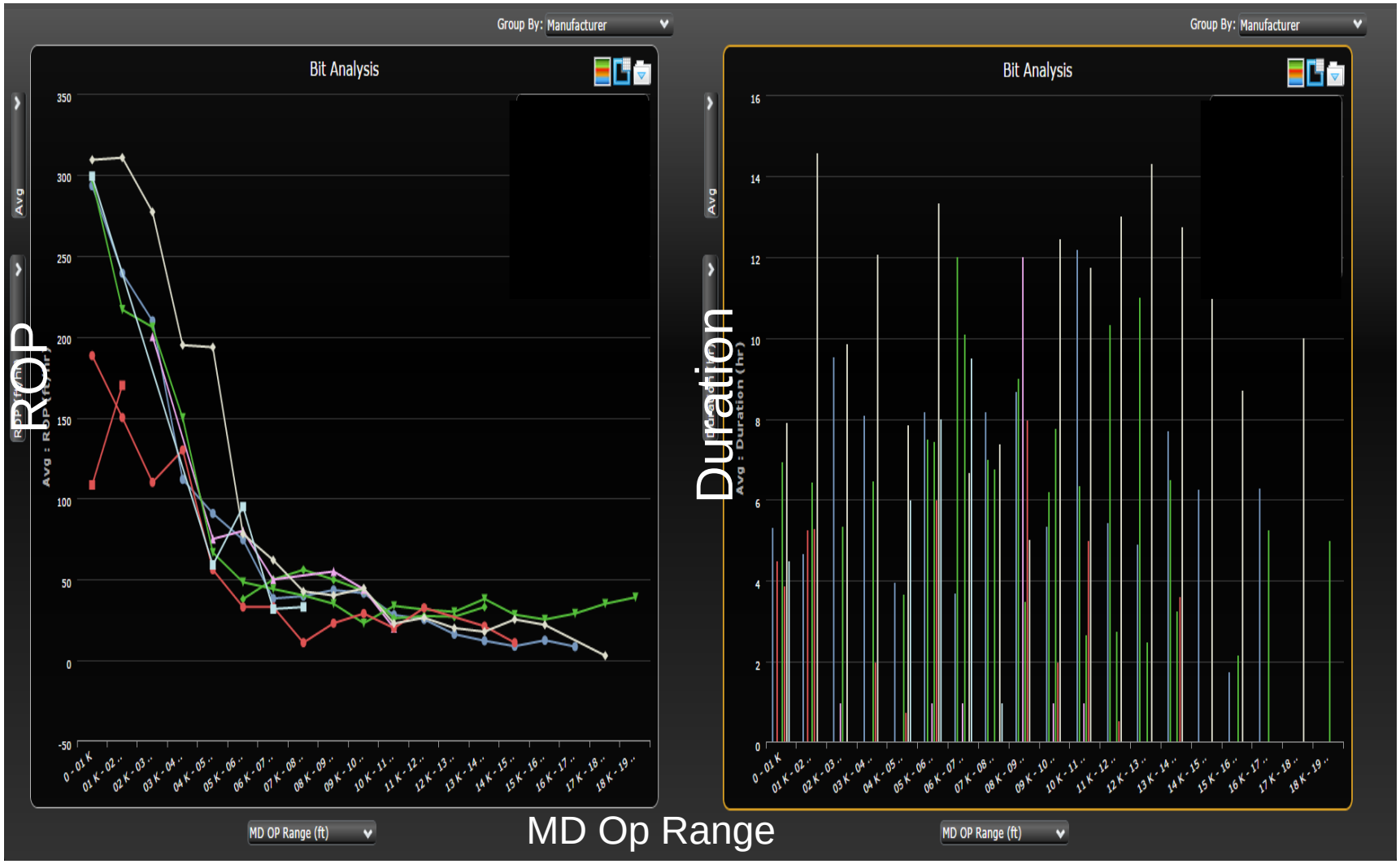
Engineering Data Analysis Using Historical Data

- Vendor & Sources Neutral
- Business Intelligence Model
- Ability to quickly identify bad/missing data

Bit Analysis



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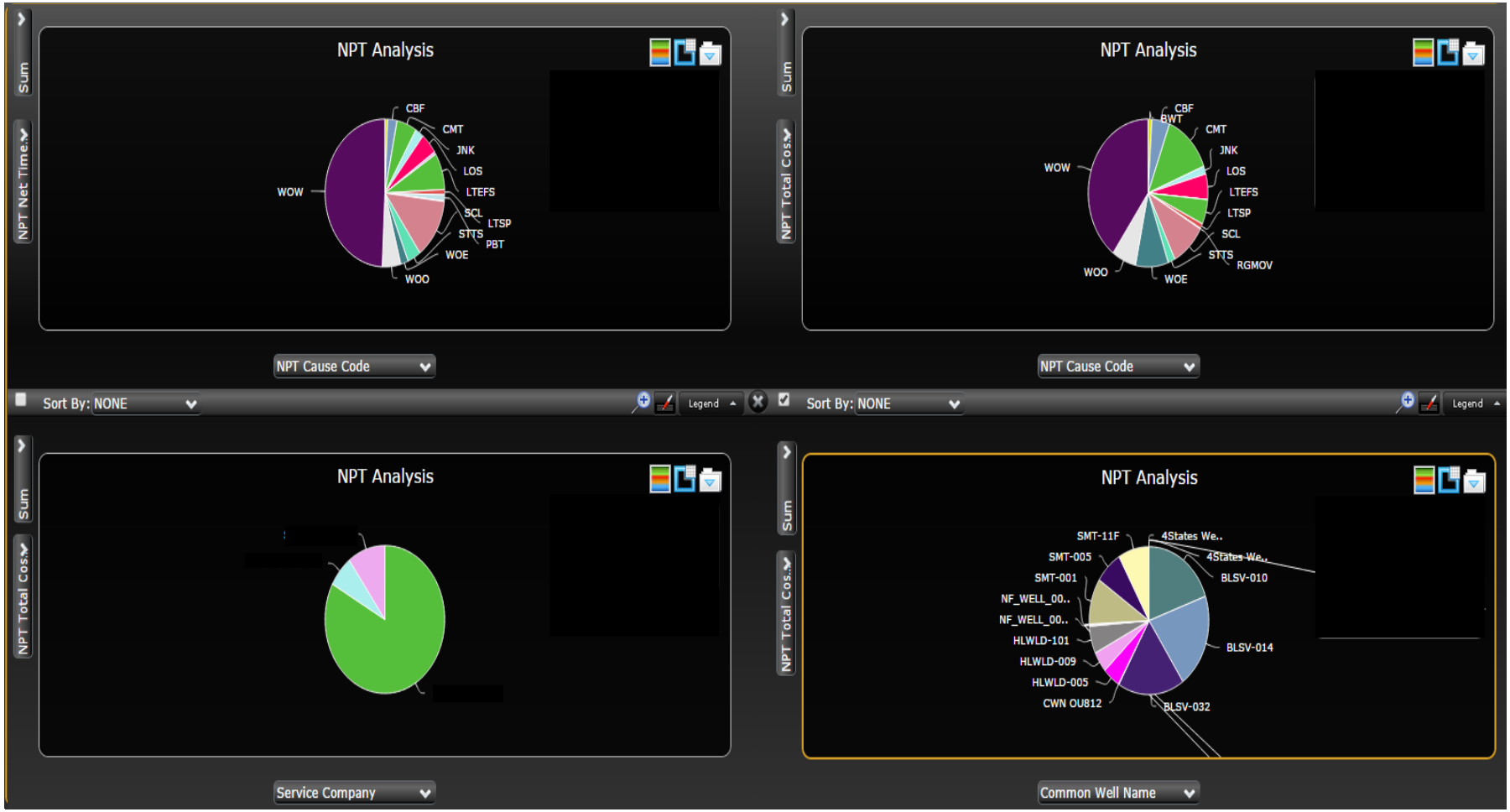
NPT Analysis



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Predictive Analytics

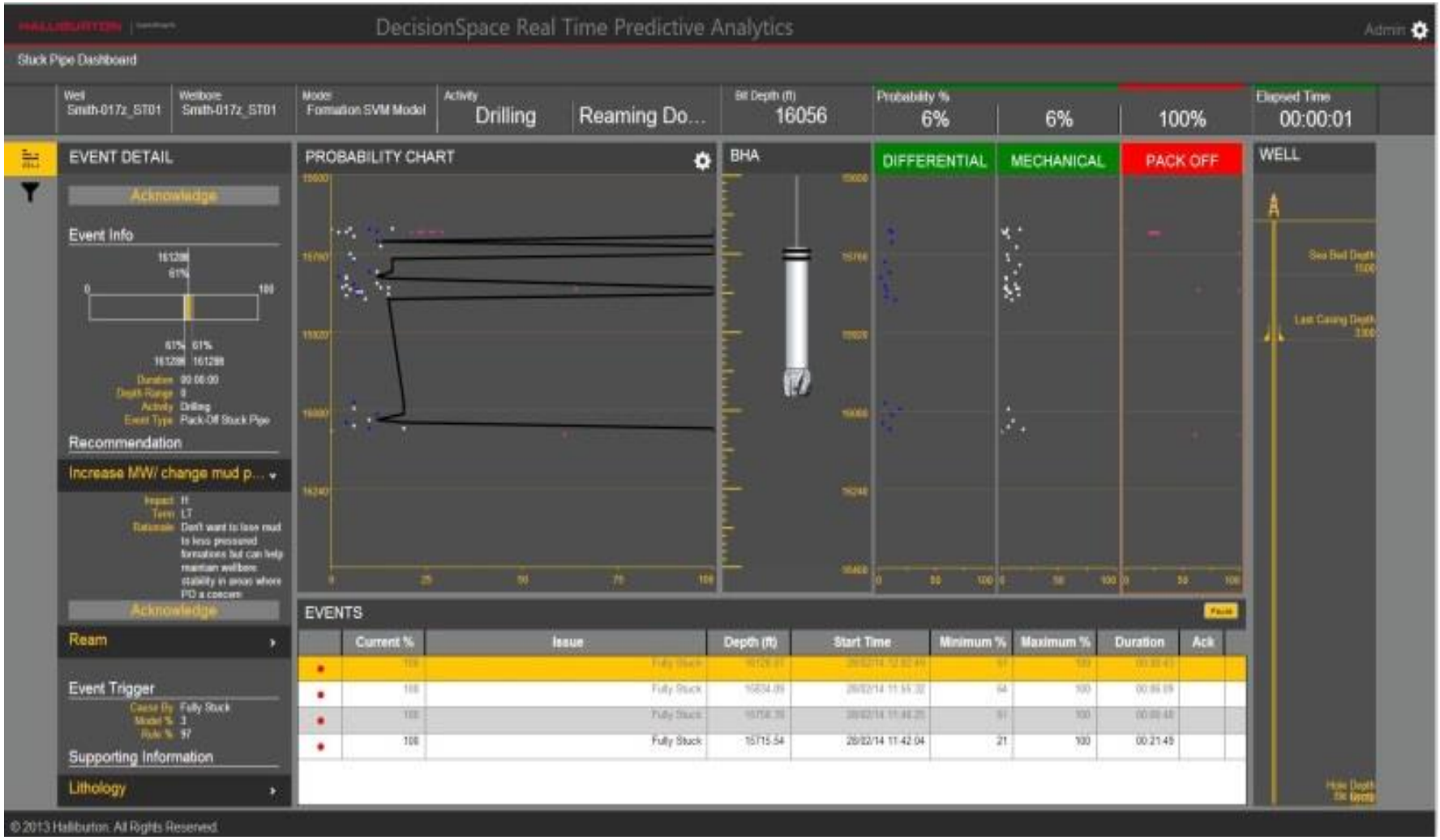
- What would you do if you could predict the future?

- Predictive Analytics using Real Time Data

Predictive Analytics

- Model built with current & historical real time data
- Model is updated automatically after an event
- Ability to follow set of pre determined rules

Predictive Analytics with Real Time Data



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In Summary

- Historical analysis allows better planning
  - Economical
  - Operational
- Make use of available data
  - Real Time Data
  - Daily Reports

- Application of Predictive Analytics in Real Time Operations

Thank you. Questions?

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