



Integrated Planning: A New Priority for the Coal Industry

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As take or pay contracts expire, market conditions will no longer accommodate operations that are not competitive in costs and cash flow. While asset quality is paramount, competitiveness is similarly influenced by operational decisions made across a coal supply chain.

The effectiveness of operational decisions is limited by their coordination and subsequent alignment. In other words, what is a good decision for each separate business unit depends on those decisions made within other units. Silo business drivers for mining (ROM tonnes), processing (plant utilization), and marketing (revenue) only align with enterprise objectives (cash flow, NPV) when operational performance is low. Under high performance operating conditions, decisions guided by silo KPIs will misalign with the interests of the group and erode value.

For instance, consider coal processing decisions and their interdependency with decisions in mine planning, logistics, and market planning. Decisions in coal processing impact coal quality, product specifications that can be achieved and thus sold, production yields and operating costs. While maximizing plant utilisation and “washing to an ash spec” instead of blending to a spec have known

limitations, today's tight margins are revealing more subtle and deeply held assumptions about what product a coal 'should be' that become invalidated as revenue approaches costs.

In practice, coal supply chain alignment is only achievable through integrated planning. By integrated planning, I mean coordinated planning of decisions between mining, processing, logistics, and sales. While the importance of integrated planning is recognized, its execution is challenging. Understated difficulties arise in data integration and in the creation and optimisation of an integrated plan. Also important are the organisational challenges to realising effective coordination at every stage of the planning process from agreement on scope, procedures for plan development, refinement, communication, and execution.

BlendOpt Software: BlendOpt is Paradyn's solution to the technical challenges faced in the integrated planning of coal sales and supply chain operations. Starting with an imported mine schedule (e.g. imported from xpac, deswik, s pry, etc), BlendOpt plans how coal should be processed, blended, and allocated to different products or contracts with the goal of maximizing profit. Optimal plans are created in BlendOpt using mathematical optimisation techniques that test millions of possible plans in search of the highest profit from the data provided.

Previous attempts have been made to design software that improves integrated supply chain planning in the mining industry, and most have met with limited success. At Paradyn, we believe success is only attained when you define the right problem, have the technology to solve that problem in a timely fashion, have a capability to challenge the right assumptions, and can present plans in a manner that facilitates actionable insights.



Mine 2Market Optimisation
Smarter Blending, Processing, and Product Planning