

Simulation & Business Intelligence

Ausenco is a world leader in data-driven analysis of complex Bulk Material supply chains.

With 36 years of experience on over 400 Simulation and Business Intelligence (BI) projects worldwide, we are experts in identifying the effects of interdependencies and variation in complex supply chains on KPIs like throughput, rateability, storage requirements, and equipment redundancy. We provide critical recommendations to improve existing systems and optimize infrastructure investment.

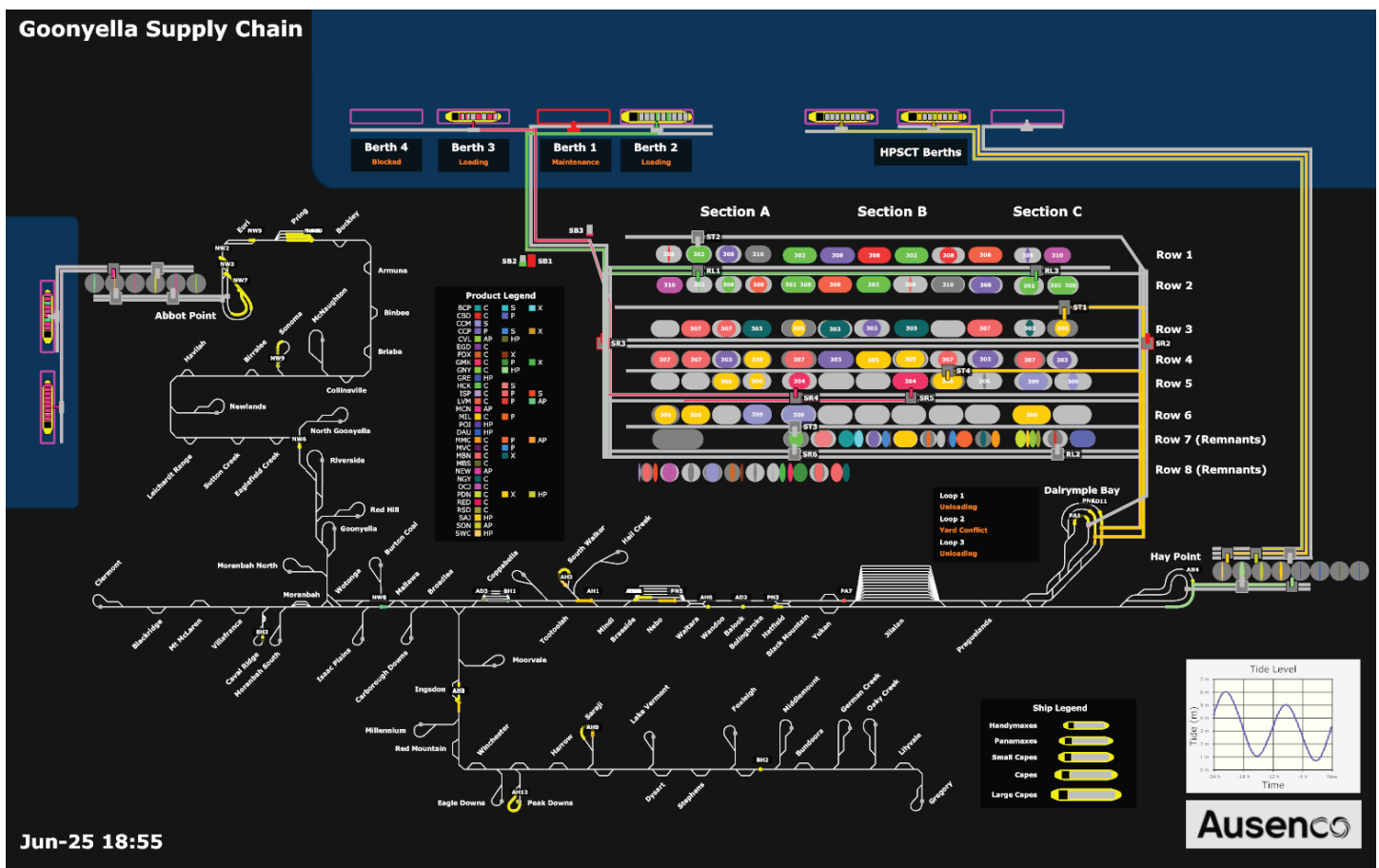
Our approach is designed to:

- **evaluate** past performance
- **improve** real-time decision making
- **right-size** future investments.

Ausenco's simulation models are calibrated to years of detailed operating and financial data to ensure they reflect actual operations and forecast future performance accurately.

We inform our clients' business decisions holistically to optimize lifetime economic value and minimize risk, subject to constraints and external influence.

Our models feature presentation-quality graphics that bring to life complex supply chain interactions, variability, and congestion.



TLS simulation model of the Dalrymple Bay Coal Terminal (DBCT) and Goonyella rail network in Queensland, Australia. Colour coding denotes the coal grades assigned to each stockpile. This coal network is the second-largest of its kind in the world, delivering 150+ Mt/y with 6,000+ railcars.

Technology Advantage

Not satisfied with commercial software, Ausenco developed industry-leading software to realistically model complex, dynamic supply chains in detail, measure important KPIs that inform your business decisions, and objectively substantiate your most promising opportunities to stakeholders.

Our Transportation Logistics Simulator (TLS) discrete event simulation software has been developed and advanced in-house since 2002. TLS is scalable, which allows Ausenco to quickly model large and complex supply chains, far exceeding the capabilities of off-the-shelf software. TLS is licensed and trusted by major companies in the bulk handling industries, such as DBCT Management and other confidential, Tier 1 Mining clients.

We have advised many Tier 1 bulk material handling companies worldwide, in addition to supporting many emerging firms. Our experience at a diverse range of scales provides Ausenco with an invaluable perspective on industry best practices.

Process Advantage

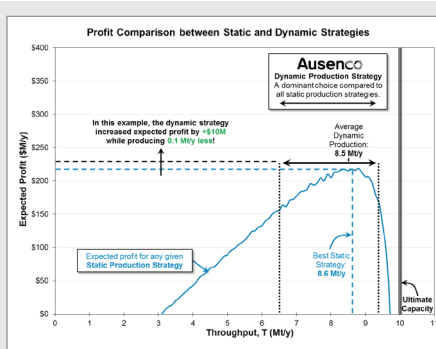
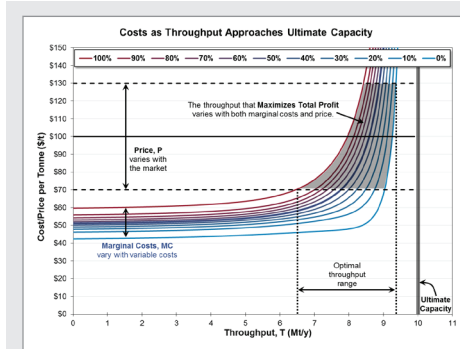
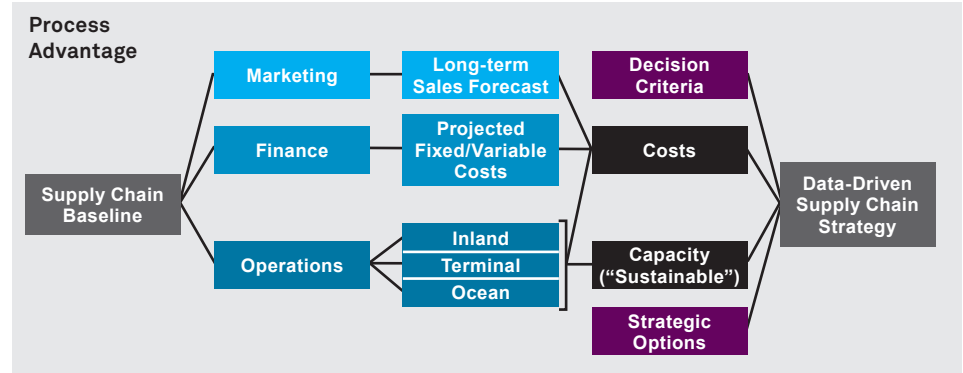
Ausenco engages your stakeholders early to gather data, understand perspectives, and align everyone's definition of success.

Following our establishment of your performance baseline, your operations, finance and marketing teams inform our data-driven analysis of your strategic options. We then work closely with you to select a decision-making framework, criteria, and their relative importance to you. Our recommendations follow simply and objectively from this process.

People Advantage

Our team of 20 is comprised almost exclusively of engineering physics graduates, many with advanced degrees in business, mathematics and computing. Widely recognized as one of the most challenging disciplines, engineering physics attracts individuals who are as creative and well-spoken as they are logical.

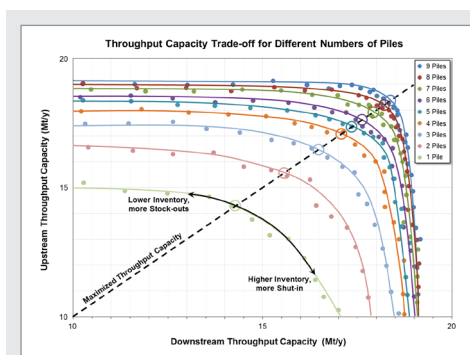
Our professional engineering consultants ask the right questions and define the right problems before developing ingenious solutions that align your stakeholders.



Insight example 1

These graphs counter-intuitively demonstrate that marginal throughput is eventually unprofitable! In fact, as your variable costs and selling price change, so does your economically-optimal throughput.

With this insight, you can measure the actual economic cost curves of your complex business and dynamically optimize your throughput to maximize profit.



Insight example 2

This graph quantifies the key trade-offs in stockyard sizing. Each line demonstrates the upstream and downstream throughput capacity enabled by a fixed number of stockpiles, as alternative average inventory levels are evaluated. The results show that moderate inventory levels best buffer variability caused by upstream and downstream operations. It also demonstrates that adding stockpiles increases both upstream and downstream throughput capacity simultaneously since more storage can accommodate a greater range of inventory fluctuations. There are diminishing marginal returns on adding stockpiles.

With this insight, you can optimize storage capacity by comparing its capital cost to the marginal profit you can generate by increasing throughput.

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