

“Money Mining”

Whittle Consulting – Mining & Mineral Processing Optimisation

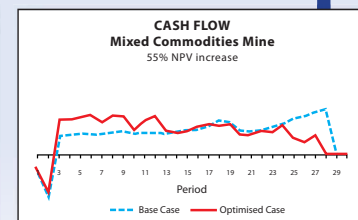
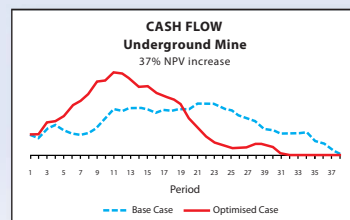
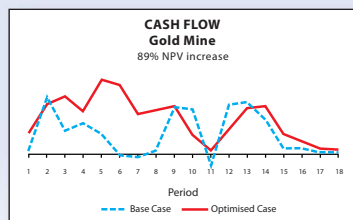
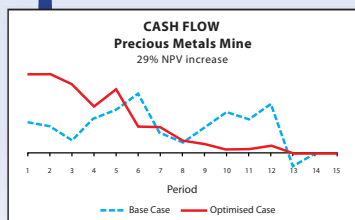
~ Short Course ~

30th April & 1st May 2012 – Esplanade Hotel, Fremantle, WA (Full)
 3rd & 4th May 2012 – Esplanade Hotel, Fremantle, WA
 5th & 6th July 2012 – Sofitel Broadbeach Hotel, Gold Coast, QLD
 1st & 2nd November 2012 – Esplanade Hotel, Fremantle, WA

Gain the Latest Insights in Business Planning

- Releasing value through better planning decisions better asset management
- Exploring the latest developments in optimisation for the mining industry
- Simultaneously optimising the whole value chain: mining, mineral processing, logistics, production and capital
- Planning and optimisation with geological uncertainty and volatile metal markets
- Operational and cost modelling techniques for optimisation
- “Bust the myths” that organisations pursue which limit their economic performance
- Implementing an effective planning process

Increase the value of your mining business by 5% to 35% or more



About your expert trainer:

Gerald has more than 30 years of experience in business planning, analysis and change management in a range of industries in Australia and internationally. As Managing Director of Whittle Consulting (specialists in business optimisation for the mining industry) for the last 13 years, Gerald handles optimisation project management, optimisation strategies and model design, business analysis and management reporting/presentations. Some major clients include Xstrata, Vale/Inco, BHP Billiton, Minara, Lihir, Newcrest, AngloGold Ashanti and Goldfields, covering a range of commodities including Nickel, Copper, Gold, Lead, Zinc, Coal, Iron Ore and Bauxite.

Bringing together important lessons learnt in other industries, including activity based costing and the theory of constraints, Gerald brings new light to the peculiar challenges of business planning and optimisation for the minerals industry.



Gerald Whittle
 BEcon, GradDipFin, MAusIMM
 Managing Director,
 Whittle Consulting Pty Ltd, Australia



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Previous attendees' comments:

“This is the future of mining”

“Every serious mining professional should attend”

“The best mining training course I have been to”

“Well organised, relevant and challenging existing paradigms”

“In 2 days Gerald changed 25 years of traditional mining thinking and principles”

“No feasibility study should be done without these principles”

Increasing the value of your mining business by 5% - 35% or more!

OVERVIEW: Effective long-term planning can enhance the value of a minerals business by 5% - 35% or significantly more. This course details an optimisation methodology that involves 10 distinct mechanisms, which when applied simultaneously can produce counterintuitive results that challenge conventional thinking on how to run a mining and mineral processing business. Covering the latest developments in optimisation methods, the subjects span mine design and scheduling, cut-off grades and stockpiling, plant configuration, product specification, logistics and capital scaling, a comprehensive approach to managing risk and uncertainty, strategic optimisation and modelling techniques, theory of constraints as is applied to a minerals business, advanced cost modelling, and implementation/change management. The result is a comprehensive approach to asset management.



It shows how these disciplines can take the economic view of the business and coordinate their activities to extract value that is currently concealed between the organisational silos that the management structure creates.

It is also relevant to equity analysts, venture capitalists, fund managers and investment bankers who want to better understand the drivers of value in a minerals business, and *to be able to recognise where the full potential of a business has not yet been realised.*

The principles examined are applicable to Copper, Gold, Lead, Zinc, Iron ore, Coal, Diamonds, Bauxite, Manganese, Platinum and other commodities. Open pit, underground and complex portfolios of assets are covered.

This course will change forever the way you look at your mining business!

WHO SHOULD ATTEND:

- Senior Executives
- Directors
- Department, divisional or project managers
- Professionals who are currently, or will be, involved in the technical aspects of optimisation analysis
- Institutional investors in mining funds
- Financial analysts
- Project financiers
- Geologists
- Mining engineers
- Process engineers
- Metallurgists
- Logistics managers
- Marketing managers
- Finance & HR management

COURSE CERTIFICATE: A Certificate of Completion will be awarded to all participants completing 90% of the total course hours. This course counts 14 hours towards your Continuing Professional Development for AusIMM accreditation.

OUTCOMES OF THE WORKSHOP: By the end of this intensive two day programme, you will take back to your organisation fresh views of how economic value can be generated. You will be able to recognise the real drivers of value, and how flexibility in all parts of the value chain can be harmonised and exploited to increase value and robustness of the business in the face of uncertain resources, technical challenges and volatile metal markets.

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Attention Business Leaders – Don’t make another business decision until you have considered these perspectives!

John Meyer, Fairfax – “A unique approach to optimising project value & cash flow returns...this is well worth attendance & highly recommended”

COURSE OUTLINE DAY ONE

- 8.00 Registration and Coffee
8.25 Opening Remarks
8.30 **1. INTRODUCTION**
- Introductions/Objectives/Agenda
 - The “Money Mining” concept
 - Why is it important?
 - Group discussion: pros and cons of NPV
- 10:00 Coffee Break
10.15 **2. OPTIMISATION MECHANISMS Steps 1 – 6**
- Open Pit Case Study: Introduction
 - 0. Base Case life of mine plan
 - 1. Pit optimisation: Lerchs-Grossman 1965
 - 2. Phase/pushback selection
 - 3. Mine schedule
 - 4. Cut-off grade: Ken Lane 1988
 - 5. Stockpiles
 - 6. Simultaneous optimisation
- 12:00 Lunch
12:45 **3. OPTIMISATION MECHANISMS Steps 7 - 10**
- 7. Process plant calibration
 - 8. Product specification
 - 9. Logistics
 - 10. Capital scaling
 - Summary of NPV “Waterfall” graph
 - Implications
 - Effect on stakeholders
- 14:30 Coffee Break
14.45 **4. UNDERGROUND CASE STUDY**
- Grade tonnage curves
 - Stope design criteria
 - Mine scheduling
 - Cut-off grade strategies
 - Maximizing value
 - Implications
- 15.30 **5. ASSET PORTFOLIO OPTIMISATION**
- Multiple pit operations
 - Mixed pit and underground mines
 - Multiple/alternative processing streams
 - Multiple/alternative products
 - A complex mine logistics example
 - Lessons learnt from optimising these cases
 - Managing the optimisation process
- 16:15 **DISCUSSION/QUESTIONS**
16.30 End of Day 1

COURSE OUTLINE DAY TWO

- 8:00 Coffee
8:30 Comments/observations from day 1
8:45 **6. CASE VARIATIONS**
- Other commodities
 - Specific issue for coal mining
 - Effect of changes in metal prices

- 9.15 **7. RISK AND UNCERTAINTY Step 11**
- Sources of uncertainty
 - Modeling and measuring the impact of uncertainty
 - Managing in changing circumstances
 - Optimising with uncertainty
 - Managing the Monte Carlo process
 - The role of hedging
 - Implications for the planning process
- 10:00 Coffee Break
10.15 **8. COST MODELLING**
- Types of cost accounting
 - Fixed/variable/capital costs
 - Activity Based Costing
 - Attributable/period/capital costs
 - Identifying period/time/fixed costs
 - Frontline/support/backline activities
 - Identifying activity cost drivers
 - Sustaining capital
 - Group exercise
- 11:30 **9. OPTIMISATION MODELLING TECHNIQUES**
- Block Models
 - Grade Bins/Grade Control
 - Blending Optimisation
- 12:00 Lunch
12:45 **10. CONSTRAINTS AND BOTTLENECKS**
- The production line
 - Impact of bottlenecks
 - Theory of Constraints: Goldratt 1984
 - Mining case study
 - Implication 1: Defining constraints
 - Implication 2: Treatment of period costs
 - Implication 3: Grade control methodology
- 14:30 Coffee Break
14.45 **11. “MONEY MINING” IMPLEMENTATION**
- Technical barriers – data, software
 - Organisational/human barriers – “It’s a Minefield”
 - The ideal planning process
 - Timing
 - Implementation Strategies
 - Change Management
 - Market perceptions
 - Strategic to Tactical – Mine designs
 - Strategic to Tactical – Variable Cut-off grades
 - Management Reporting – KPI’s
- 16.15 Closing
- Summary
 - Possible next steps
 - Feedback questionnaire
 - Certificates
- 16:30 End of Course

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REGISTRATION

Online Registration (payment by credit card only):

Fremantle, 30 April – 1 May: www.cvent.com/d/8cqk2m

Gold Coast, 5 – 6 July: www.cvent.com/d/9cqk28

Fremantle, 3 May – 4 May: www.cvent.com/d/8cqk2m

Fremantle, 1 – 2 November: www.cvent.com/d/0cqk28

Fax or Email registration:

Complete the registration form below and fax or email your form to Stephanie Jones, Marketing Manager, Whittle Consulting Pty Ltd
Email: stephanie@whittleconsulting.com.au Telephone: +61 3 9898 1755 Facsimile: +61 3 9898 1855

Personal Details

Title:	Given Name:	Surname:	
Name (as wanted on name badge, if different from above):			
Position Title:			
Organisation:			
Address:			
City:	State/Province:	Country:	Zip/Postal Code:
Business Phone:		Mobile Phone:	
Fax:		Email:	
Dietary requirements:			
Other special requirements (i.e. mobility):			

Course Registration & Fees

Fees are inclusive of GST

- Special Registration Discount:** Third delegate onwards from the same company is entitled to a 50% discount in course fees. Delegates must be registered for the same course for the discount to apply. Please tick the box if the special registration discount applies to your registration.
- Student Registration Offer:** Whittle Consulting will grant 2 complimentary student registrations per course. If you wish to apply for a student place, please complete this registration form, indicate your course of interest and mark the student offer tick box. A brief summary on why you are interested in attending the course is required along with your application. Applicants will be notified approximately 2 weeks prior to the course commencement date.

Fremantle, 30 April – 1 May (memb.# _____)	FULL	AusIMM Member Registration <input type="checkbox"/> \$1980 Non Member Registration <input type="checkbox"/> \$2200	Gold Coast, 5 – 6 July (memb.# _____)	AusIMM Member Registration <input type="checkbox"/> \$1980 Non Member Registration <input type="checkbox"/> \$2200
Fremantle, 3 – 4 May (memb.# _____)	AusIMM Member Registration <input type="checkbox"/> \$1980 Non Member Registration <input type="checkbox"/> \$2200	Fremantle, 1 – 2 November (memb.# _____)	AusIMM Member Registration <input type="checkbox"/> \$1980 Non Member Registration <input type="checkbox"/> \$2200	

Payment Details

Full payment must accompany your registration. This document is a TAX INVOICE once payment has been received.

Please indicate method of payment:

CREDIT CARD: VISA MASTERCARD

Card Number:	Name on Card:
Expiry Date:	Total Payment Amount:
Signature	

BANK TRANSFER: please email stephanie@whittleconsulting.com.au to request bank account details for payment by direct deposit.

All cancellations must be received in writing to Whittle Consulting. Cancellations will incur a \$200 administration fee. Registrants who are “no-shows”, or cancel registration less than two business days before the course, will not qualify for a refund. In lieu of cancelling a registration, a registrant may send a substitute in his or her place.

A final confirmation letter confirming your registration will be emailed to you approximately 10 days before the course. Your letter will include venue and parking details as well as a location map for reference.

