The Life History of a Kg of Copper

(Or Your Mining Product)
Long Term Copper Factory
Eventually It Will Explode
Supernova - Spreading Metal

Supernova Remnant LMC N 63A

NASA, ESA, HEIC, and The Hubble Heritage Team (STScI/AURA) • Hubble Space Telescope ACS • STScI-PRC05-15
Gravity Begins to Pull it Together Again
A Solar System Being Born
And Eventually We Get - Earth

- Taking about 13 Billion years
- And it is full of Cu and other cool stuff
- Coal has a short term development cycle
- No Mincom contribution
Steps in the Mining Process

Now We All Get Involved
Mincom Mining Solutions

Mincom Production Accounting

Mincom MineMarket

Mincom Exploration

Mincom MineScape

Mincom Assay Management

Mincom CCLAS

Geological Exploration & Evaluation

Mine Plan

Mine Operation

ROM

Process Plant

Product Stockpiling

Product Transport

Reclaiming & Loading

Shipping

Sales
Exploration

- Exploration
  - Gather field data
- GDB
  - Geological Data Base
- Assay Management
  - Tracking one of your most valuable assets
  - Very Long Term
    - More than 100 years
Financing

- MineScape
  - Initial mine plan
  - Life of Mine
  - Reserves
- Ellipse
  - Financials
  - Purchasing
Mine Construction

- Ellipse
  - Projects
  - Finance
  - Purchasing
- MineScape
  - Detailed Mine Plan
Mining

- MineScape
  - Planning & Scheduling
- MineMarket
  - Product Movement
- Assay Management
  - Tracking Samples
- CCLAS
  - Quality
- Ellipse
  - Production Statistics
  - Equipment Performance
  - Costing
Concentration

- Production Accounting
  - Metal Balance
  - Statistical (In = Out)
  - Numbers with confidence
- MineMarket
  - Concentrate Movement
  - With Quality
- CCLAS
- Assay Management
- Ellipse
  - Consumables
  - Costing
Smelting

- Production Accounting
  - Metal Balance
  - Statistical (In = Out)
  - Numbers with confidence
- MineMarket
  - Discreet Units
  - With Quality
- CCLAS
- Assay Management
- Ellipse
  - Consumables
  - Costing
Refining

• Production Accounting
  - Metal Balance
  - Numbers with confidence
• MineMarket
  - Discreet Units
  - With Quality
• CCLAS
• Assay Management
• Ellipse
  - Equipment Performance
  - Consumables
  - Costing
Transport & Shipping

- MineMarket
  - Stockpiles
  - Blending
  - Routes
  - Trucks
  - Rail
  - Barges
  - Ships
- CCLAS
- Assay Management
- Ellipse
  - Costing
Transport & Shipping

- MineMarket
  - Stockpiles
  - Blending
  - Routes
  - Trucks
  - Rail
  - Barges
  - Ships
- CCLAS
- Assay Management
- Ellipse
  - Costing
Sales

- MineMarket
  - Invoicing
    - Provisional
    - Final
  - Umpiring
- CCLAS
- Assay Management
- Ellipse
  - Financial performance
  - Costing
All of this takes Equipment

Manage Physical Assets
Vision for Mining
Technical - Improved Integration

Mincom Intelligent Mining Solution
- Mincom Exploration
- Mincom MinoScape
- Mincom CCLAS
- Mincom Production Accounting
- Mincom Assay Management
- Mincom MineMarket

Mincom Adapters
- Fuel, Process Control Systems, SCADA etc.

Improved Integration

Supply Chain Management
- Mincom Ellipse

Mincom EnvoyBuyer
- Mincom Axis

Warehouse or Workshop
- Mincom Mobile

Asset & Work Management
- Mobile Workforce

Human Resource Management
- Mincom LinkOne

Financial Management
- Parts & Service Information

Production Statistics
Integrated Production & Maintenance Planning

Mincom Intelligent Mining Solution
- Mincom Exploration
- Mincom Mining Scape
- Mincom CCLAS
- Mincom Production Accounting
- Mincom Assay Management
- Mincom Mine Market

Mincom Adapters
- Fuel, Process Control Systems, SCADA etc.

Mincom Ellipse
Mincom EnvoyBuyer
Mincom Axis

Suppliers & eMarketplaces

Asset & Work Management
Mincom Mobile
Mincom LinkOne
Mobile Workforce
Parts & Service Information

Financial Management
Production Statistics
But is all this effort worthwhile?
Skilled shortages...

We have to find ways to operate more efficiently and effectively with fewer skilled people!
What are these Valuable Skills Doing

- A moderate sized mine with 78 production reporting spreadsheets
- A refinery manager spending 4 hours a day on daily reporting spreadsheets
  - “I spend so much time doing it wrong that I don’t have the time to do it right”
- A smelter being run by a spreadsheet completely dependant on a single Industrial Engineer
- A copper mine not knowing their cost of production until 15 days after month end
The Key Value Proposition

- Releasing your very limited skilled resources
  - From time wasted gathering & verifying data
- To apply their skills to running your operation
  - To analyzing, understanding the data
  - Understanding the root cause of good performance
  - Understanding the root cause of poor performance
  - Changing your processes to maximize good performance
Timely Data You Can Trust

- Give your professionals the time to really manage the process
- Visibility from end to end without duplicate data entry
- Focus on process improvement
- Improved product recovery
- Decrease lost production
Mincom is in the business of
Managing Physical Assets
And for Mining it is all of them