



WHITTLE CONSULTING

BUSINESS OPTIMISATION FOR THE MINING INDUSTRY

Mining Australia

Mining Thanks A Legend

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In 1983 Jeff Whittle wrote Three-D as a private venture.

The development of this software is said to be one of the most significant software developments to optimise mine design, and Jeff Whittle is a valuable individual for the Australian mining industry, Prospect judges said.

Three D is the first implementation of the Lerchs-Grossmann pit optimisation algorithm that could be used with any mining software package on any computer.

Jeff's wife Ruth set about marketing Three D for their company Whittle Programming. It took 12 months to make their first sale.

Sales gradually grew, and as users gained more experience with the package they ran it many times for sensitivity work.

Whittle thought that there had to be something better than repeatedly running the same program, and this led to the development of Four-D, where the fourth dimension was time. This later became Four-X, when the ability to handle multiple elements was added. Later rudimentary schedule optimisation was added to the software. Four-X has become an industry standard for open pit design, and is used many mining companies world-wide.

Subsequently, Whittle wrote Opti-Cut, a program for optimising cut-offs over time. This was based on Ken Lane's seminal book *The Economic Definition of Ore*. Opti-Cut was later integrated with Four-X.

The Four-X technology was sold to Canadian mining software house Gemcom in 2002, and the Whittle's ceased to have any financial interest in the technology. From 1998 onwards Whittle's interest had been in optimising the schedules of very large mining complexes.

He developed software to do just that.

His software can produce optimal, or near-optimal, long-term schedules for complexes with hundreds of pits, multiple processing options, multiple products that have to be blended, and multiple stockpiles.



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He is involved with Whittle Consulting which is run by his son Gerald, and uses this software. Whittle Consulting was formed in 1999 as a joint venture with Whittle Programming, aimed at providing specialised planning services to the mining industry.

Jeff, Ruth and Gerald Whittle have owned the company since July 2002.

Over the past several years nearly 20 studies have been performed for large mining companies, in Australia and overseas, on projects valued in the billions.

Net Present Value improvements of hundreds of millions of dollars are common.

In September 2006 the Council of the Australian Computer Society elected Jeff Whittle to the grade of Fellow.

"Jeff Whittle has made distinguished contributions to the field of ICT both in Australia and throughout the world over a period of 40 years, and is an outstanding candidate for admission to the grade of Fellow of the society," the citation read.

The outstanding success of Whittle Programming is said to be epitomised by the adoption of the Whittle name as a verb into the mining vernacular.

It is said that mining engineers around the world know that their pits are not optimally designed until they have been 'Whittled'.

In December 2006 the Board of AusIMM awarded Jeff Whittle the Mining Industry Operating Technique Award.

"For his eminent services to the mining industry through his great contribution to changing the way the industry both views and practices optimisation in mine design and strategic mine planning," the citation read.