



Wealth Creation Through Sustained, Successful Mineral Exploration – The WMC Experience

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Mineral Exploration Performance

- Some exploration groups perform significantly better than others, both in terms of number of discoveries and financial return
- What are the conditions necessary to produce sustained success in an exploration organization?
- Case history summary - WMC Exploration

WMC Exploration History

- **\$ AUD 1.8 billion invested (constant 2004 dollars)**
- **149 separate discoveries**
 - **92 grass roots**
 - **57 mine environment**
 - **60 % of discoveries developed to mine**

Sources: Woodall, 2004 ; R.Schodde pers.comm.

WMC Exploration History

- Estimated metal discovered
 - Gold – 96 million ounces
 - Copper – 57 million tonnes
 - Nickel – 5 million tonnes
 - Uranium oxide – 1.6 million tonnes
 - Zinc – 0.5 million tonnes
- Estimated in-situ value: \$ US 150 billion

Source; R Schodde pers.comm.

WMC Key Discoveries

- Darling Ranges Bauxite (Western Australia)
 - Alcoa JV, AWAC, Alumina Ltd.
- Kambalda Ni (Western Australia)
 - Kambalda town, nickel smelting & refining complex
- Olympic Dam Cu-U-Au (South Australia)
 - Roxby Downs, ODO complex

WMC Significant Discoveries

Yeelirrie (U)

St. Ives camp (Au)

Nifty (Cu)

Ernest Henry (Cu-Au)

Tampakan (Cu-Au)

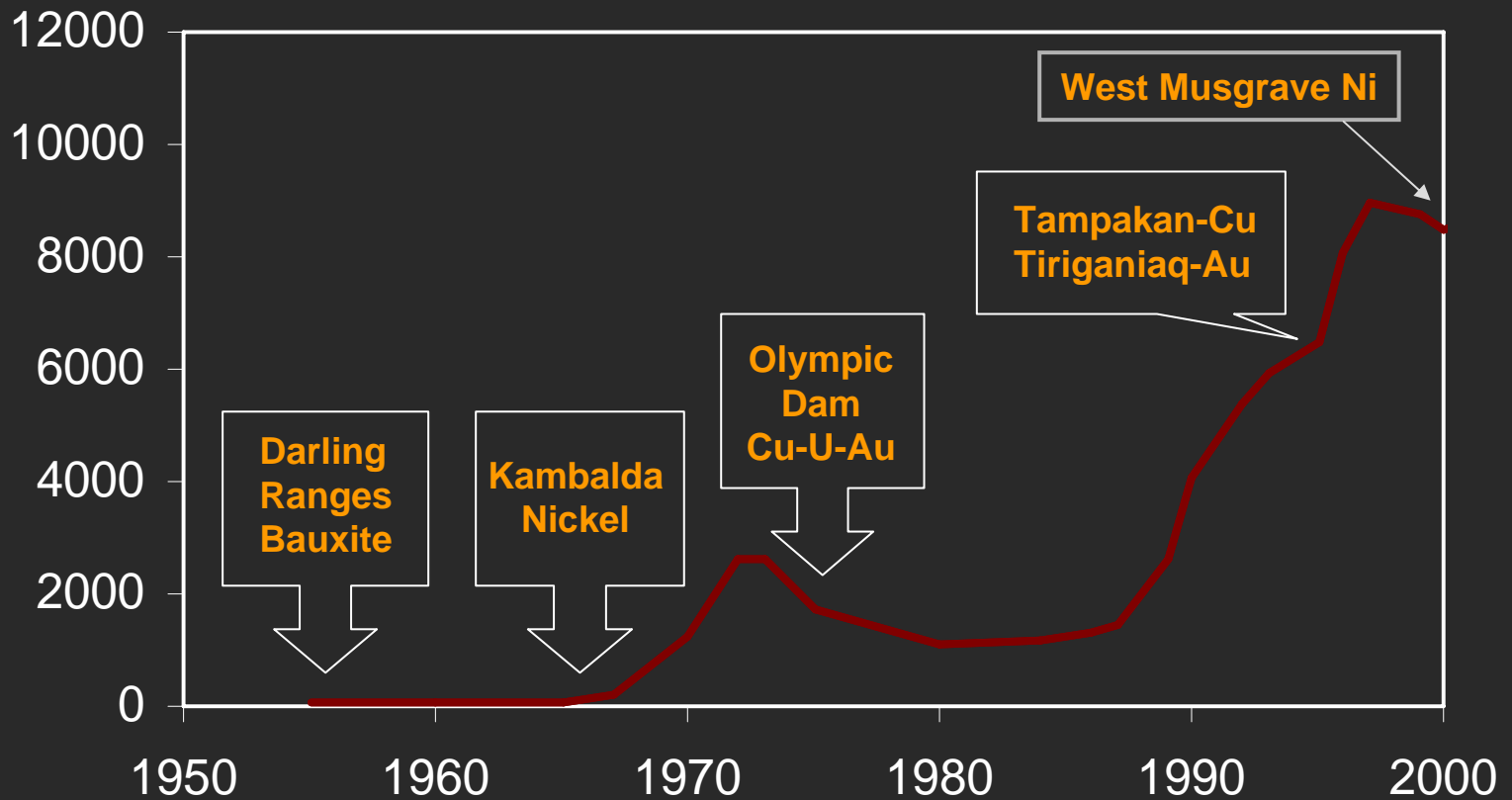
Tiriganiaq (Au)

Sertao (Au)

West Musgrave (Ni)

WMC Market Capitalization 1950 - 2000

\$ AUD Millions in real terms – 5 year moving average



Sources: Bloomberg, ComSec

Exploration vs Acquisition

- WMC was more successful adding value through exploration than acquisition
 - In some cases value creation was in the long term
- From its inception, WMC consistently supported exploration
- Three key drivers for successful culture



Key Conditions for Sustainable Performance

- **Consistent management support**
- **Excellent people**
- **Commitment to innovation**

Management Support

- Strong Board and Executive support
- Technical leaders on Board and-or Executive team
 - Robust technical discussion
 - Performance measurement and understanding of risk
 - Long-term business horizon
 - Trust and confidence

Excellent People

Recruitment – what attributes did WMC look for ?

- **Solid academics**
- **Passion and commitment**
- **Intense curiosity**
- **Drive to succeed**

Finding and retaining people with these attributes is hard work

Excellent People

Competency and capability

- Commitment to continuous learning
- Individual training plans
- Study leave options

Geoscientist rotation between mine operations, mine-area exploration, and global exploration was a very beneficial strategy for WMC



Excellent People

Specialists and multi-disciplinary teams

- Focused application of competencies and skill sets
- Good for morale and camaraderie
- Specialist vs Generalist – always a debate

Worked well for WMC – especially in execution phase

Excellent People

Exploration staff consistency

- Of 300 geoscientists hired by WMC from 1933 to 1995:
 - **50% worked 10 or more years**
 - **30% worked 10 - 19 years**
 - **15% worked 20 - 29 years**
- Head of Exploration changed 3 times in 40 years

Data partially from Reid, 1998



Innovation

WMC was committed to innovation based on solid science

- Deliberate activity aimed at creating value
- Managed process
- Expected and rewarded



Innovation –WMC Examples

- Aerial photography in 1930's
- Low-detection analysis for gold
- Geophysics (TEM, Geoferreret)
- Conceptual exploration targeting models



Summary

What are the conditions necessary to produce sustained success in an exploration organization?

Summary

In the case of WMC, a company characterized by successful exploration over a 50-year period, the conditions seem to be:

- Management Support
 - **Consistent at top level, with long-term view**
 - **Leadership that both creates space and maintains discipline**

- Excellent people
 - **Recruit well, then build competency and capability**

- Innovation
 - **Deliberate process to create value**



Thank You