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This presentation uses non-IFRS financial information including mineral sands EBITDA, mineral sands EBIT, Group EBITDA and Group EBIT which are used to measure both group and operational performance. A reconciliation of non-IFRS financial information to profit before tax is included in the supplementary slides. Non-IFRS measures have not been subject to audit or review.

Technology and Innovation Drive Step Changes

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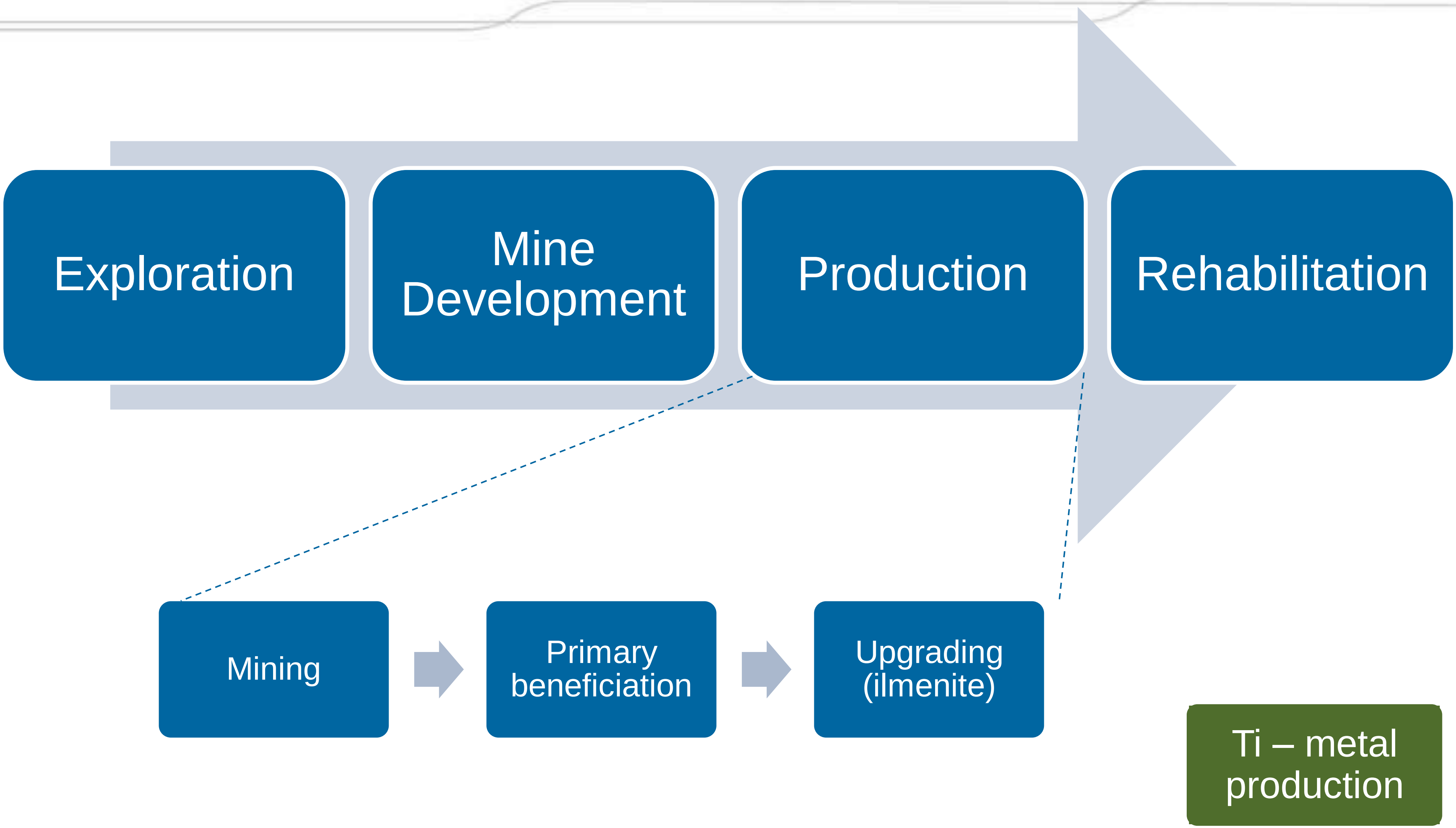
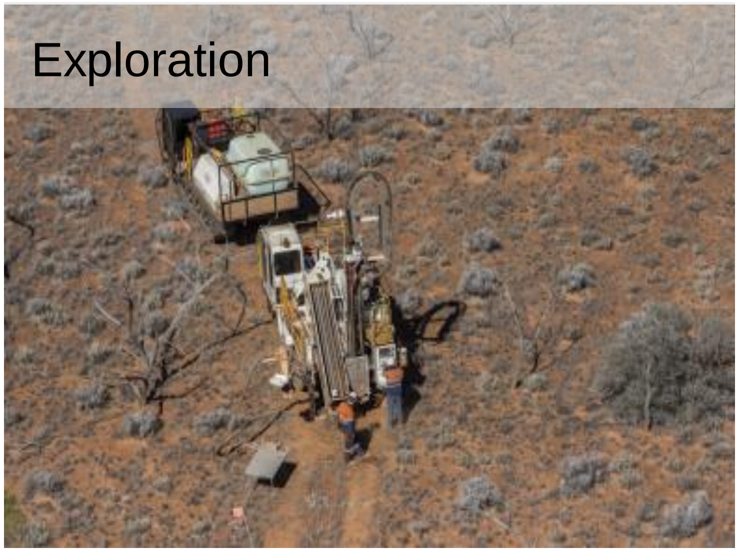
- Introduction to mineral sands
- The role of innovation – past, present and future
  - exploration
  - mine development
  - primary beneficiation
  - ilmenite upgrading
  - innovation in Ti-metal
- Conclusion

Mineral Sands Process



Mineral Sands Exploration and Mining



Beneficiation

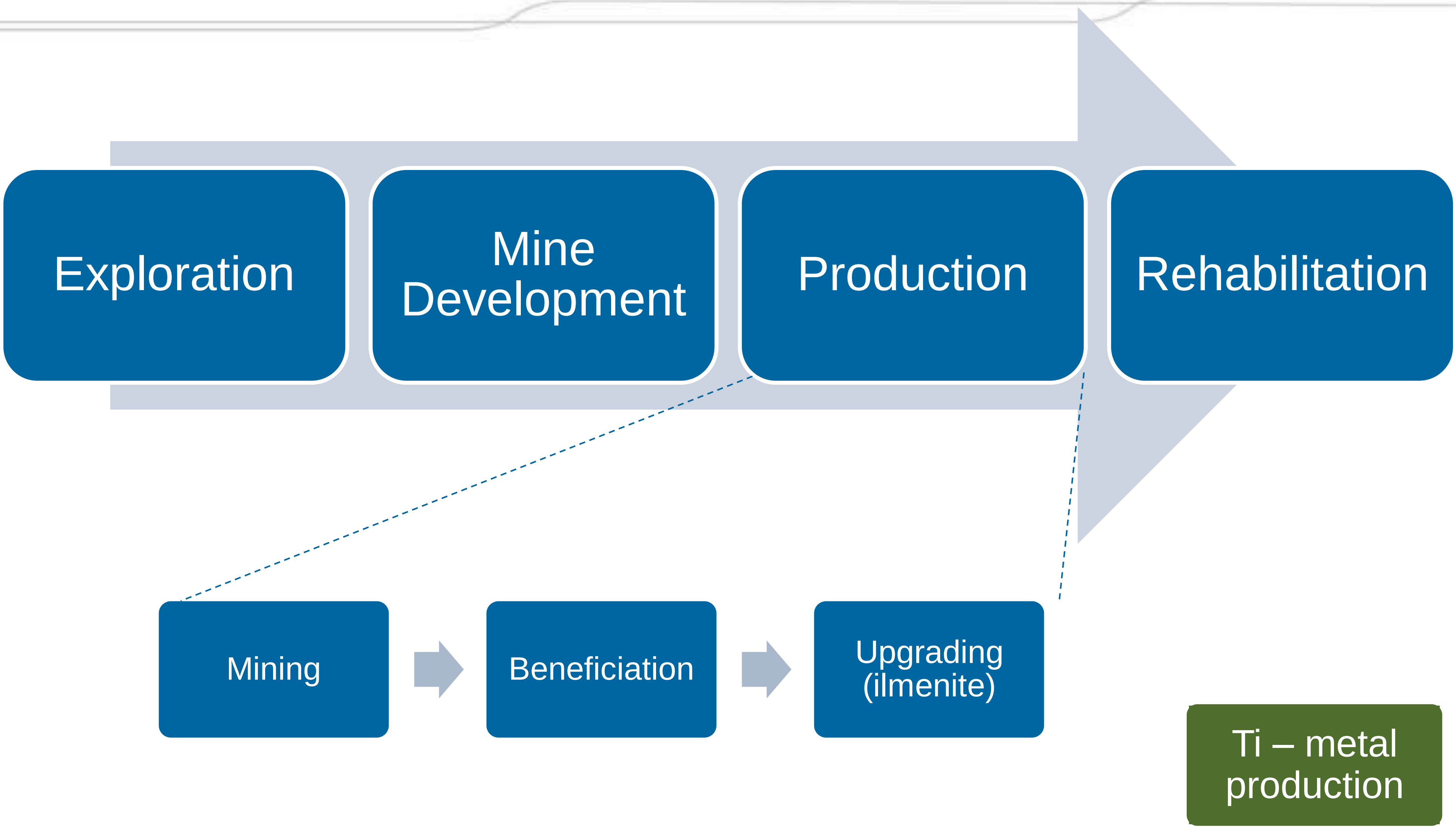
Gravity Separation

Electrostatic Separation

Synthetic rutile plant

Finished products

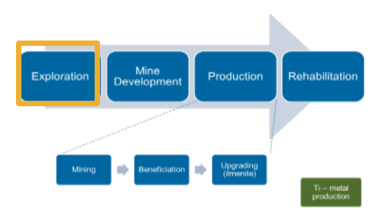
Mineral Sands Process



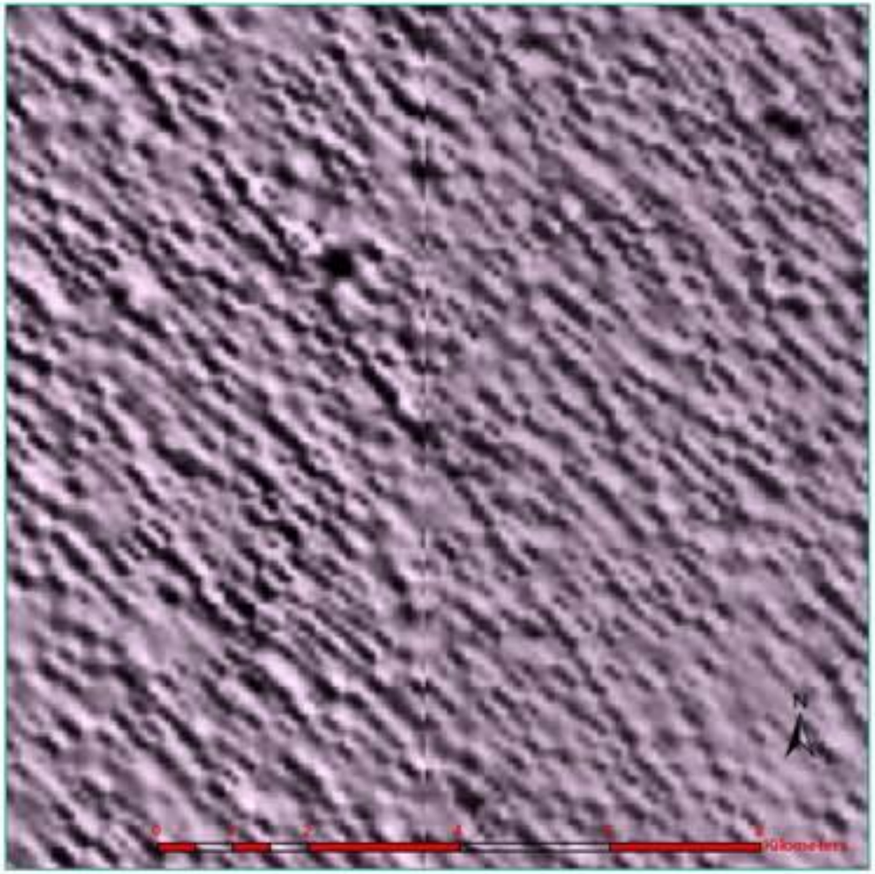
Innovation in Exploration

Decade developed	Technology	Impact on Productivity
1940s	Auger/ open hole drilling	100m/day (max)
1980s	Wallis system – air core drill	300m/day/ rig - vast improvement in quality of data - access deposits below top of water table
1997	Ouyen VIMP[1] released	Direct discovery of the Kulwin and Woornack. HM exploration in the Murray Basin since 1960s.
2010	Use of ground magnetometer	Increase confidence in deposit morphology, decrease drilling

[1] VIMP: Victorian Initiative for Minerals & Petroleum:
Aeromagnetic Survey of the Ouyen 1: 250,000 map sheet



Exploration Innovation



Aeromagnetic survey: Woornack Strandline under 15+ m of cover

Ground magnetometer

Innovation in Mine Development

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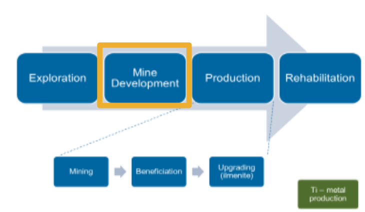
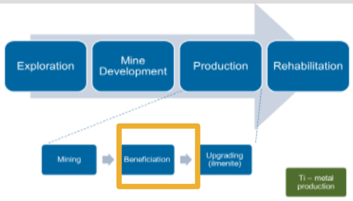
Decade developed	Technology	Impact on Productivity
1940s	Dredging technology adapted for mineral sands Pontoon mounted pump, land based spiral plant. Technology was further developed to include floating concentrator	Unit cost, labour force, access
1970s	Large bucket wheel excavators and back tippers	Reduction of work force and unit costs
1990s	Conveyance of bulk material	Reductions to unit cost
1990s	Gravity	Lost cost mining using natural slopes
2000s	Mobile mining units	Flexibility and blending
2000s	Modularisation	Flexibility, capex



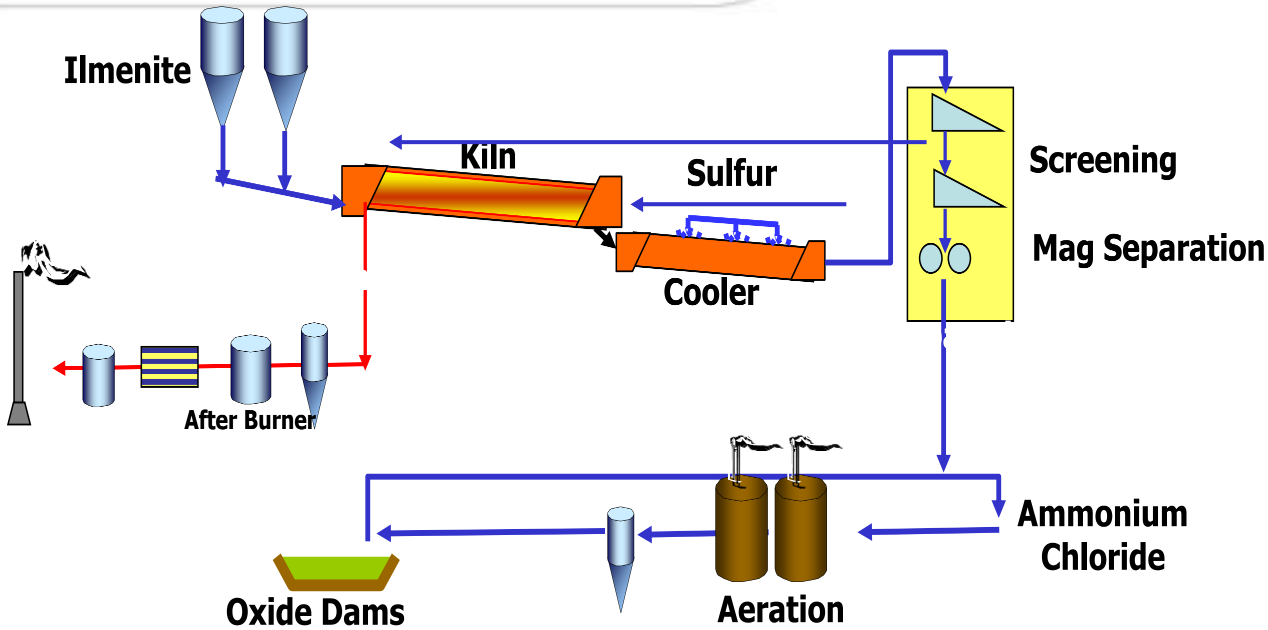
WRP Mine Move

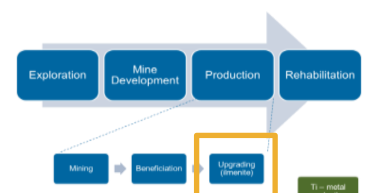
Innovation in Mineral Sand Separation

Decade developed	Technology	Impact on Productivity
1920s	Zircon Flotation	Allowed production of a refined product rather than concentrate
1930s	Wet tables	Improved selectivity e.g. monazite concentration for cerium production
1940s	Electromagnetic separators High tension roll and electrostatic plate separators	Improved separating efficiency leads to reduced unit costs and exploitation of marginal deposits
1960s	Fibreglass spiral concentrators Reichert cone concentrators	Lower manufacturing costs, improved manufacturing quality Simplified process designs Lower capital and operating costs Higher mineral recovery
1980s	Rare earth roll magnets Up-current classifiers	Increased unit capacity and improved separating efficiency added to productivity gains made in the1960s



SR – Innovation to Meet a Market Need





Iluka Synthetic Rutile Evolution

Kiln	Location	Commissioned	Decommissioned	Design Throughput Capacity	Final Throughput
‘A’ 10m	South Capel	1970	1993	10 ktpa	
‘B’ 33m	South Capel	1974	1997	30 ktpa	
SR1 68m	North Capel	1986		100 ktpa	~125 ktpa
‘C’ = SR3 63m	Narngulu	1988		100 ktpa	~125 ktpa
‘D’ = SR4 63m	Narngulu	1991		100 ktpa	~130 ktpa
SR2 90m	North Capel	1997		130 ktpa	~200 ktpa 8MW power generation

Innovation in Health, Safety and Environment

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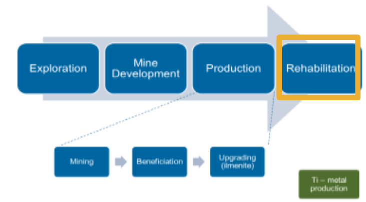
Innovation	Impact on productivity
1988: Resolution of OHS issues associated with radiation and dust in Mineral Separation Plants	Positive health impact
1970s: Methodology to successfully restore wetlands developed	Improved rehabilitation
1990s: Restoration of high dunes and preservation of perched lakes in mined out areas	Improved rehabilitation
2000s: Restoration of farm land in mined out areas (Old Hickory in the US, and Capel in WA)	Improved rehabilitation
2000s: Cultivation of recalcitrant native vegetation species at Eneabba	Improved rehabilitation
2006: Modified co-disposal of sand and slimes developed and implemented at Gingin	Water recovery doubled



Vegetation Direct Transfer

Vegetation and 30–40 cm of the intact topsoil profile is excavated…

…and transferred to a ripped subsoil surface

Innovation in Ti Metal

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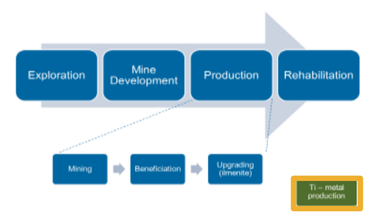
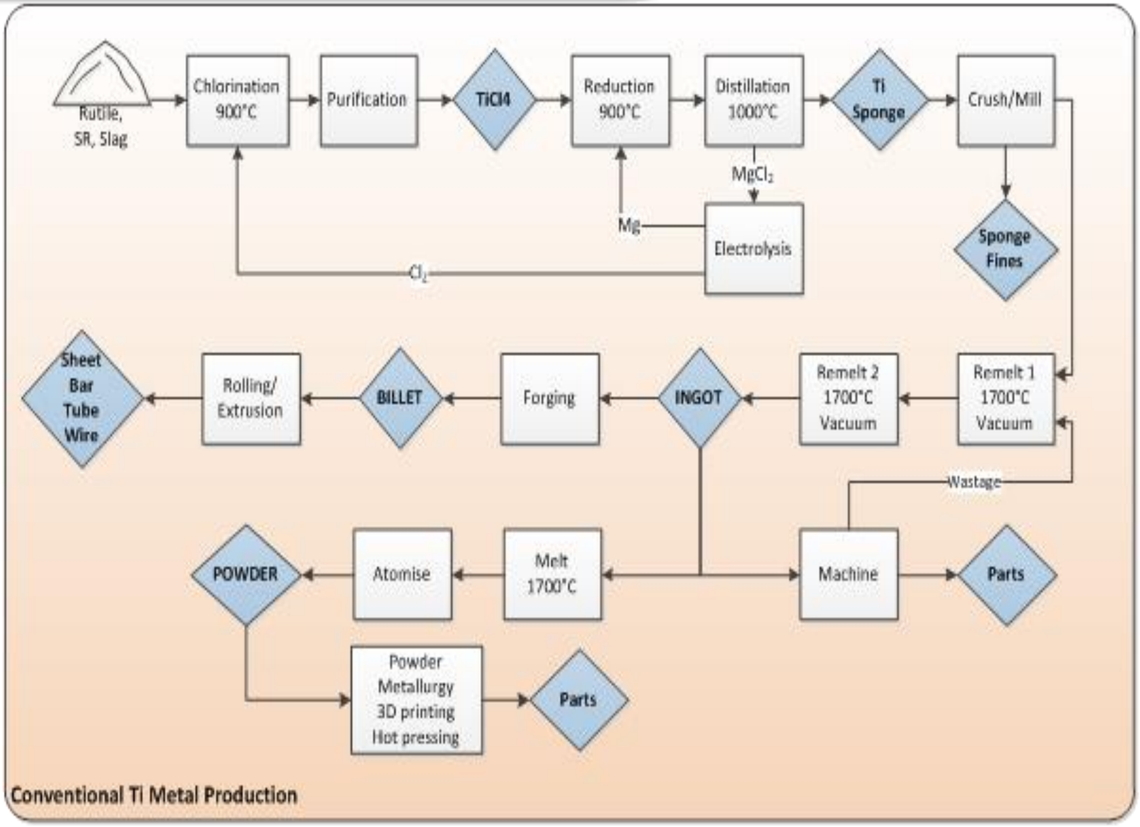
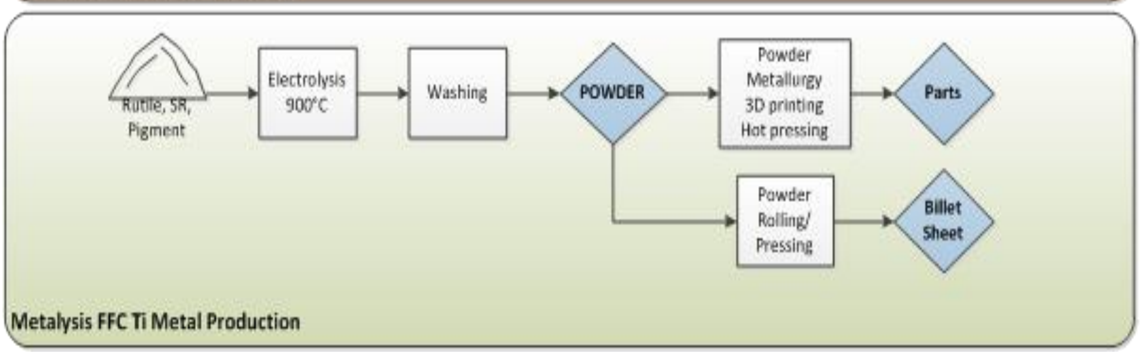
Decade developed	Technology	Impact on Productivity
1930s	Kroll process	Multiple stage, energy and labour intensive $TiCl_4$, Mg metal (liquid), multiple remelting/refining stages
1950s	Kroll process	Australian rutile used in the manufacture of titanium metal for aircraft
1990s	Metalysis	Mineral directly to metal in one step
2013	Metalysis	Mineral directly to metal in one step, Iluka invests



Ti-Metal Production





Technology	Buy-to-fly ratio
Kroll process	10:1 and higher
Metalysis	2:1 can be achieved

Factors Driving Innovation

- Desire to achieve
- Problem Solving
- Desperation / Survival
- Mistakes
- Risk Management
- Economics
- Tyranny of distance

Impact on Productivity in Mineral Sands

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All aspects from exploration to final product affected by technology and innovation:

- the discovery of deposits;
- increased confidence in deposit morphology;
- reduction in cost, schedule and footprint in new mine development;
- the mining of previously uneconomic deposits by improving separation efficiency;
- the restoration of mined areas to agreed standards; and
- new growth pathways for high value metals and alloys.

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