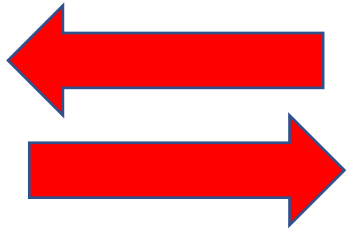
THE FUTURE FINANCING OF MINERAL EXPLORATION



Prospects **Money**

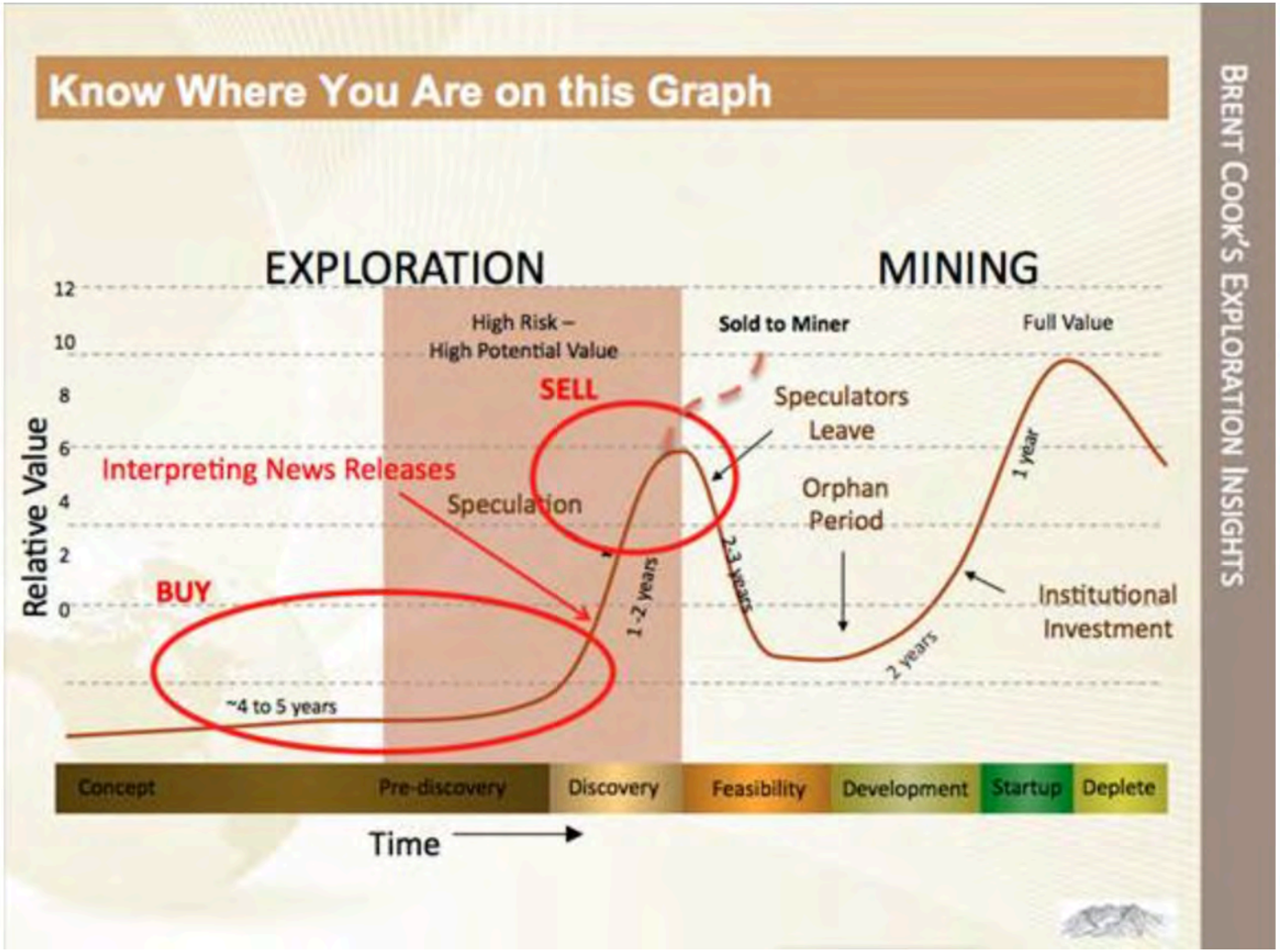
IS THE MODEL BROKEN?

Successful mineral exploration leads to discovery and it is the initial step in wealth-creating part of the mining value chain (Porter, 1985)

The way we as an industry finance early-stage exploration in the Global Junior Sector is inefficient, wastes capital and is no longer working.

(Western Mining Services,)

Let's be realistic about what time it takes to make a discovery



What does it take?

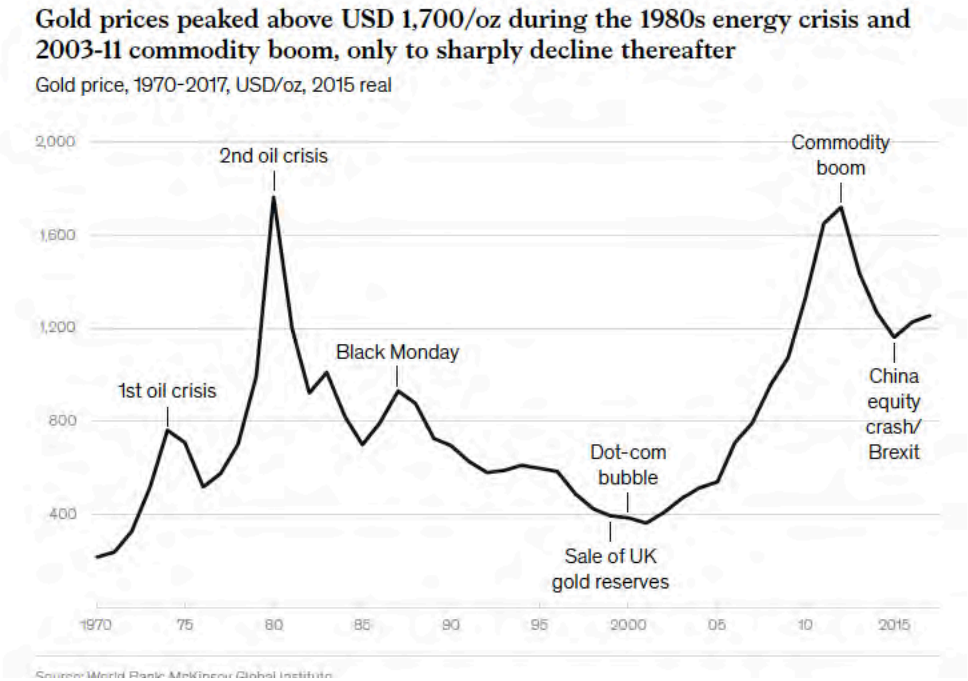
10 years?

≤10% of insitu value for all related exploration

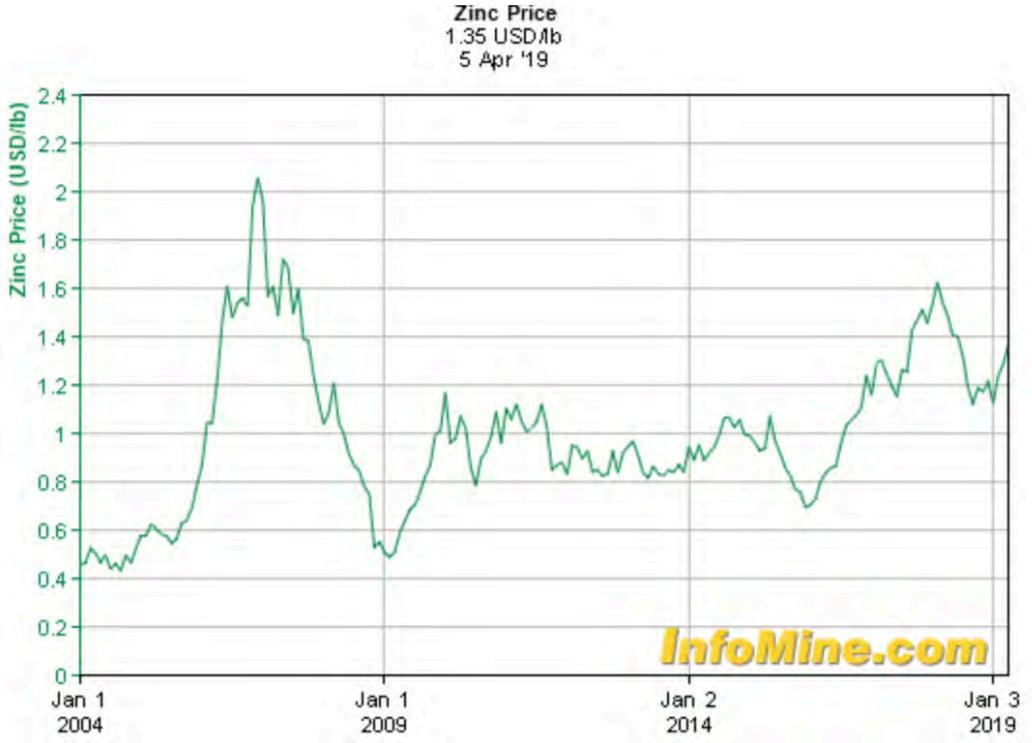
Mineral Exploration:
Discovering and Defining Ore Deposits
Wood, D. et al, Jan 2019 SEG Newsletter

E.g. Lisheen 20 million tonnes @ 12% Zn and 2% Pb = $6 billion in-situ value
Should be < $600 million over 10 years on all related exploration to discover and define resource and bring to DFS.

Investment in Juniors based on sentiment or strategy?
Project time span out out of phase with the price cycle



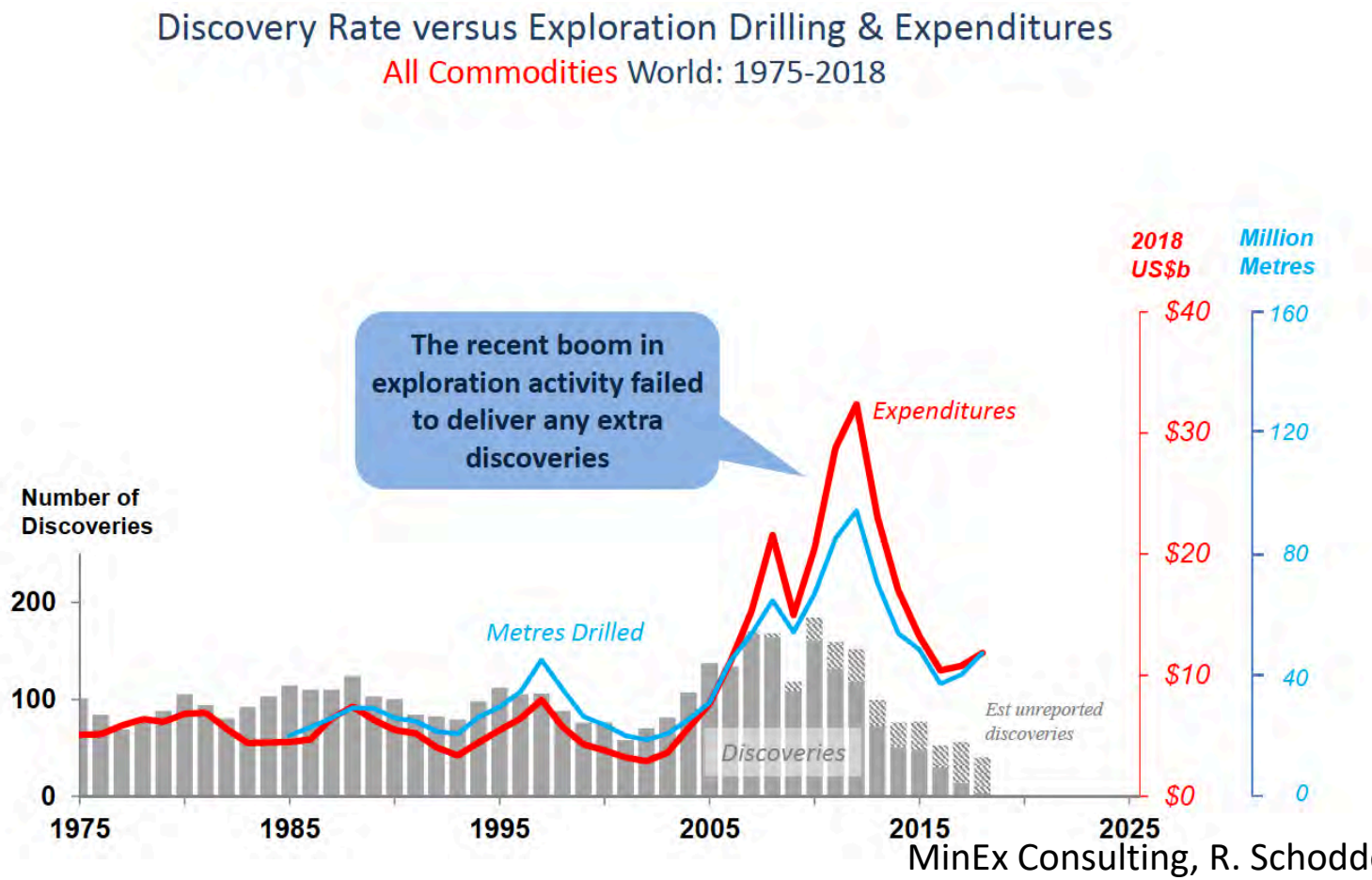
Gold price over 45 years



Zinc price over 15 years

Don't worry about the current metal price. It will take 15 years before production of metal. Investment in early-stage exploration should be counter-cyclical to metal price but do pigs fly?

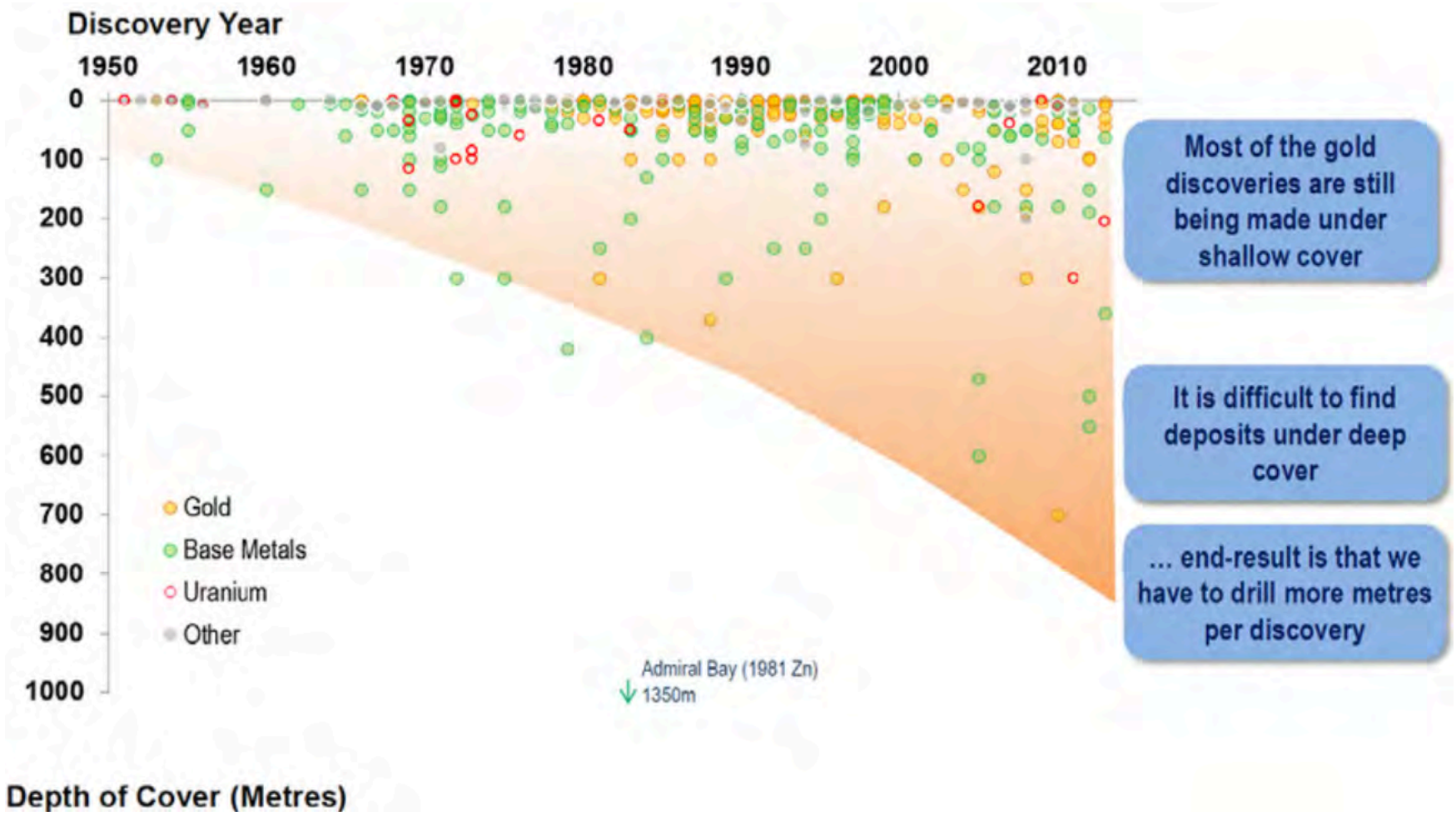
This is serious…….



MinEx Consulting, R. Schodde, 2019

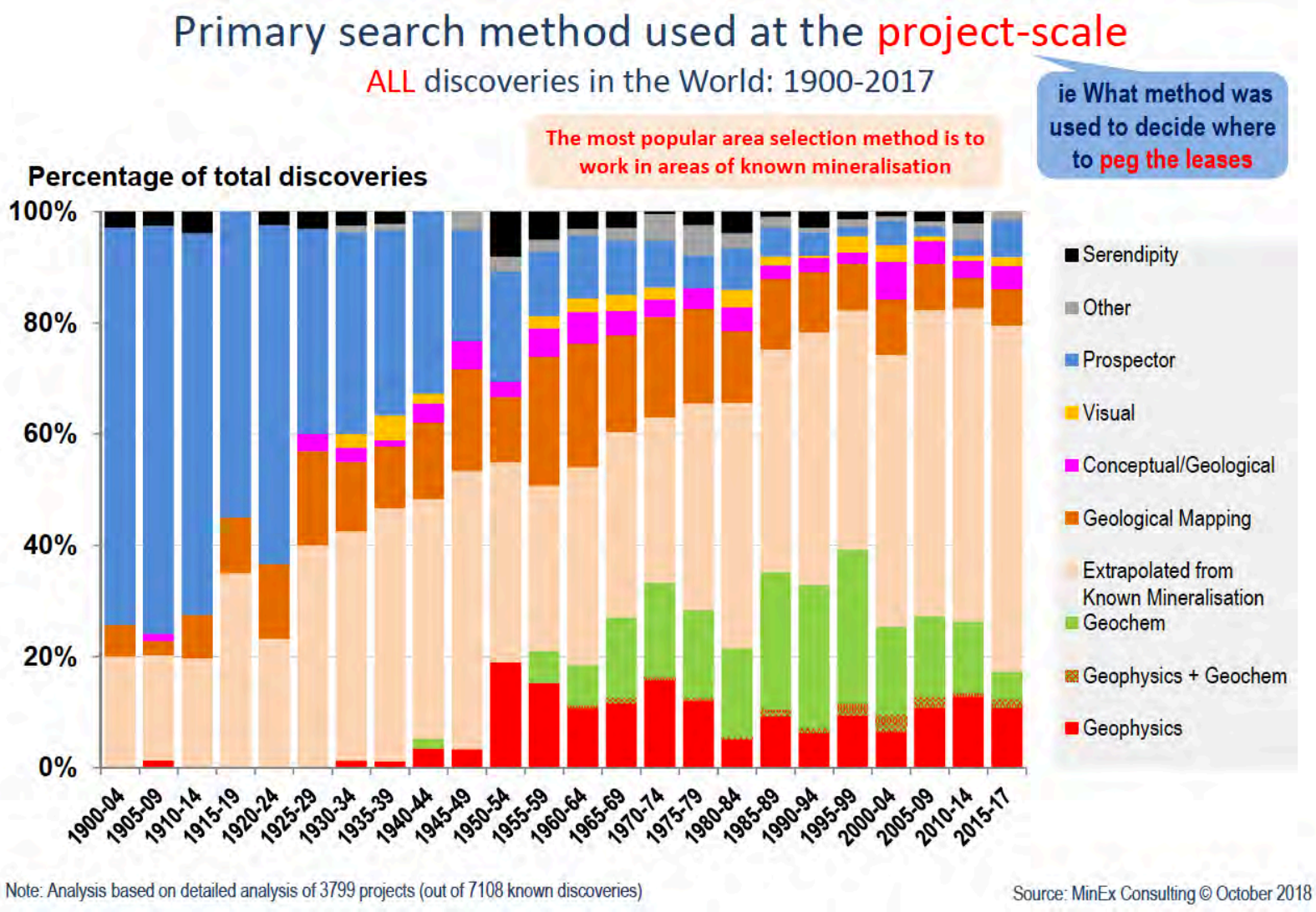
Why?

We are forced to go deeper



Major challenge - Exploration is failing and unsustainable – Schodde estimates that US$65 billion was expended to unlock US$30 billion worth of gold between 2007 and 2016.

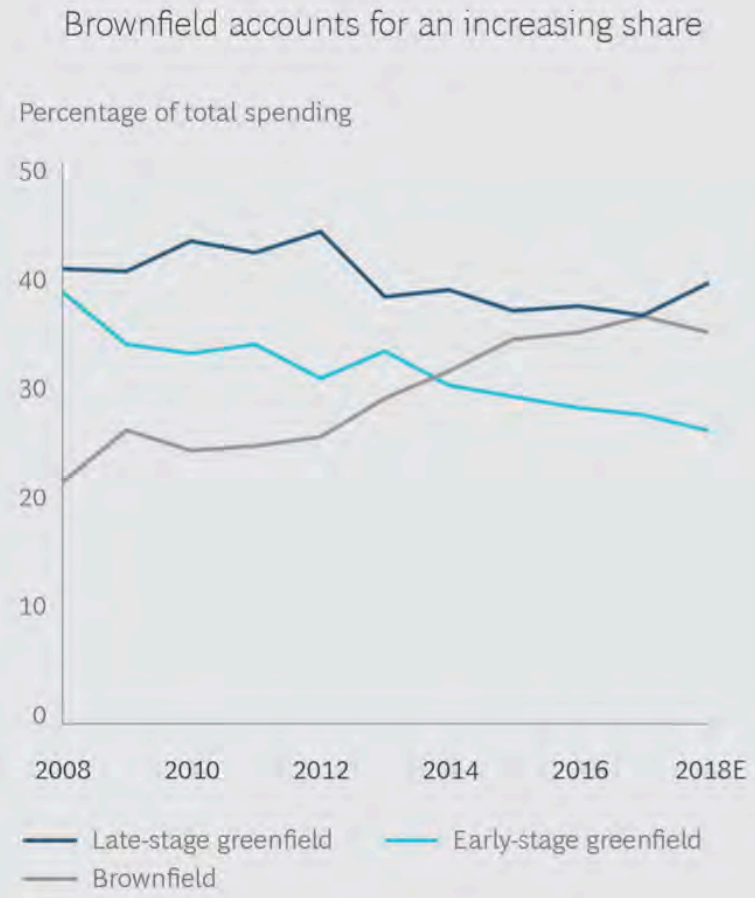
A growing focus on brownfield

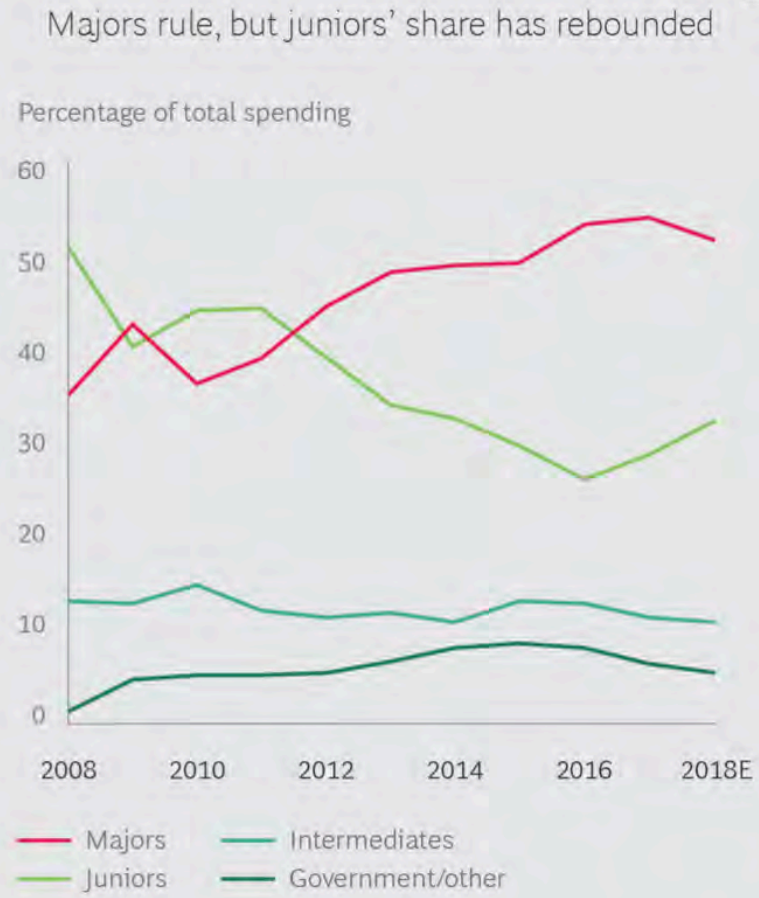


MinEx 2019, R. Schodde

Rising brownfield and re emergence of Juniors

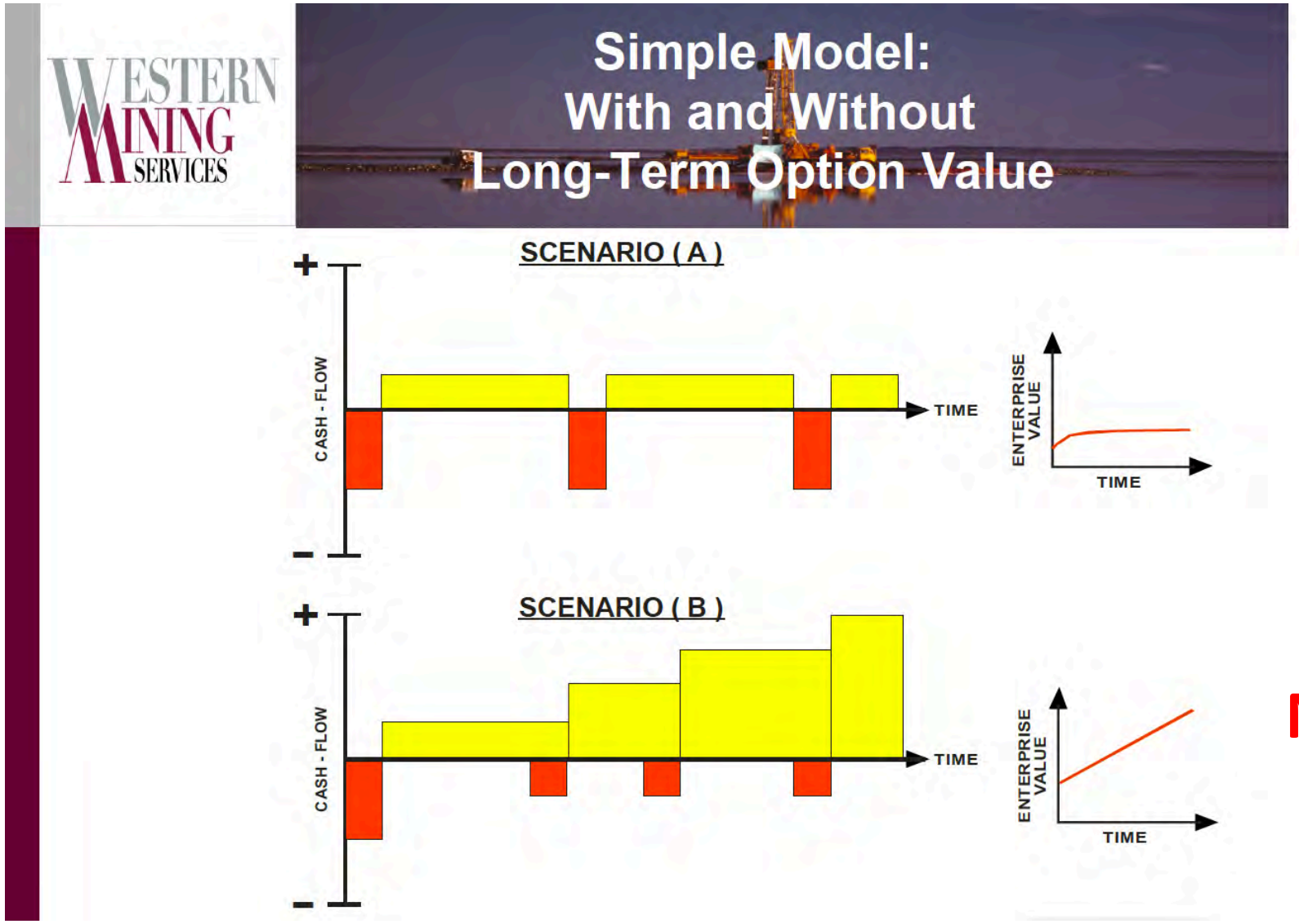
EXHIBIT 4 | Exploration Spending Is on the Rise





Source: S&P Global Market Intelligence.

Tier One Deposits are rare beasts



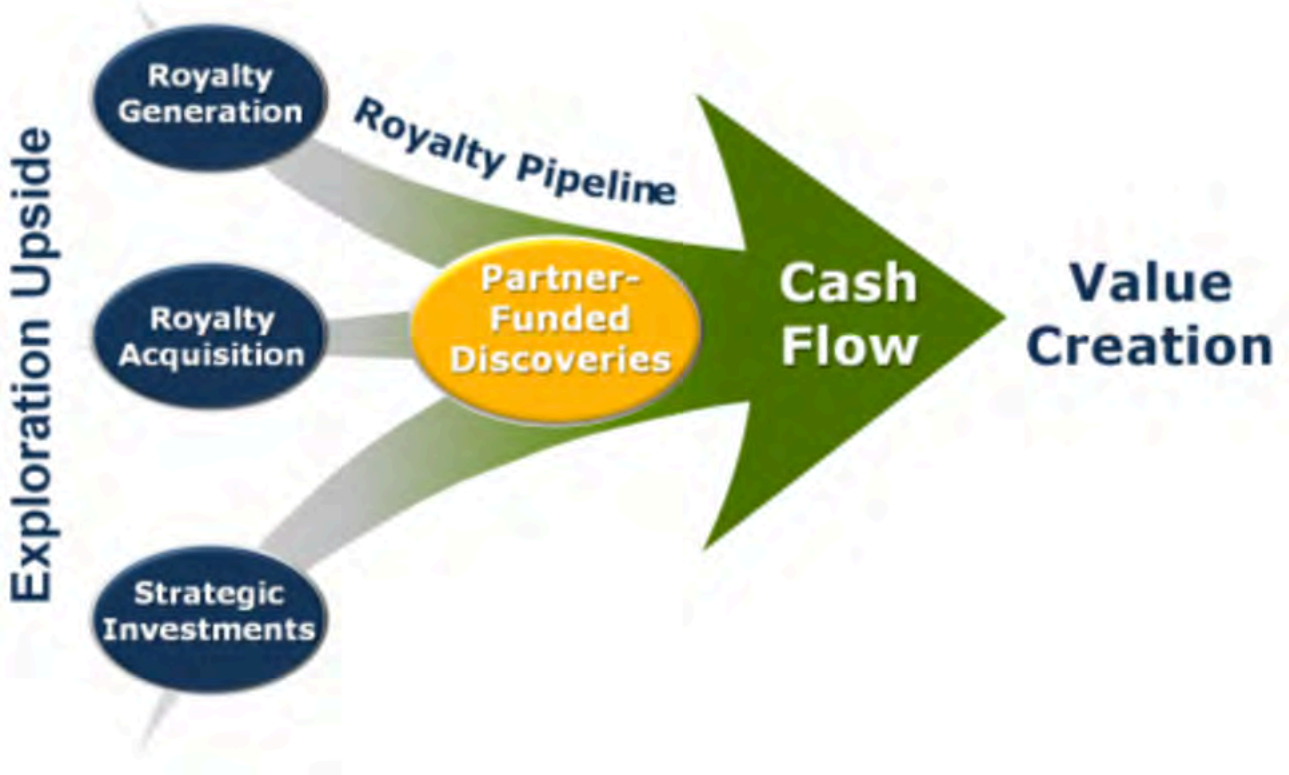
Lisheen

Navan

Sources of Financing for Juniors

Sources of Exploration Funding

Project Generator Model - EMX Royalty



Project Generator Model/ Elephant-Hunter

Exploration strategy – discover deposits it can sell to fund future exploration.

Junior Growth Model – Cash Flow from ops

Now a mid-tier gold miner in Ghana

Boutique high-grade zinc DSO mining in southern Turkey

…….. Is there a role for Government to fund discovery-drilling as exploration gets deeper and more conceptual and beyond the financial capability of Juniors?

South Australia Case Study I

Value proposition for Governments' supporting exploration
CASE STUDY 1: 2014 Review of South Australia's PACE Programs

PACE
PLAN for ACCELERATING EXPLORATION

The Review assessed the benefits of the PACE Program which was introduced in 2004. Total spend (to June 2014) was A$56m.

PACE is focused on getting the right mix of prospectivity, programs, promotion and people.

Key themes are:

1) Balancing resource development with conservation
2) Drilling partnerships
3) R&D on exploring under cover
4) 3D geological models
5) Working relations with Indigenous Communities
6) Baseline geochem survey
7) Better data delivery
8) Stronger promotion through having expert resource ambassadors

Economic Benefits of the A$56m spent on PACE between 2004-2013

- Extra A$700m invested in private mineral exploration (20:1 leverage)
- Extra A$2400m in State Mining Revenues (a factor of 44x)
- The collaborative drilling program led to 2 major copper discoveries and 14 other significant deposits
- Establishment of 2 leading research centres in SA … Deep Exploration Technologies CRC and SA Centre of Geothermal Energy Research

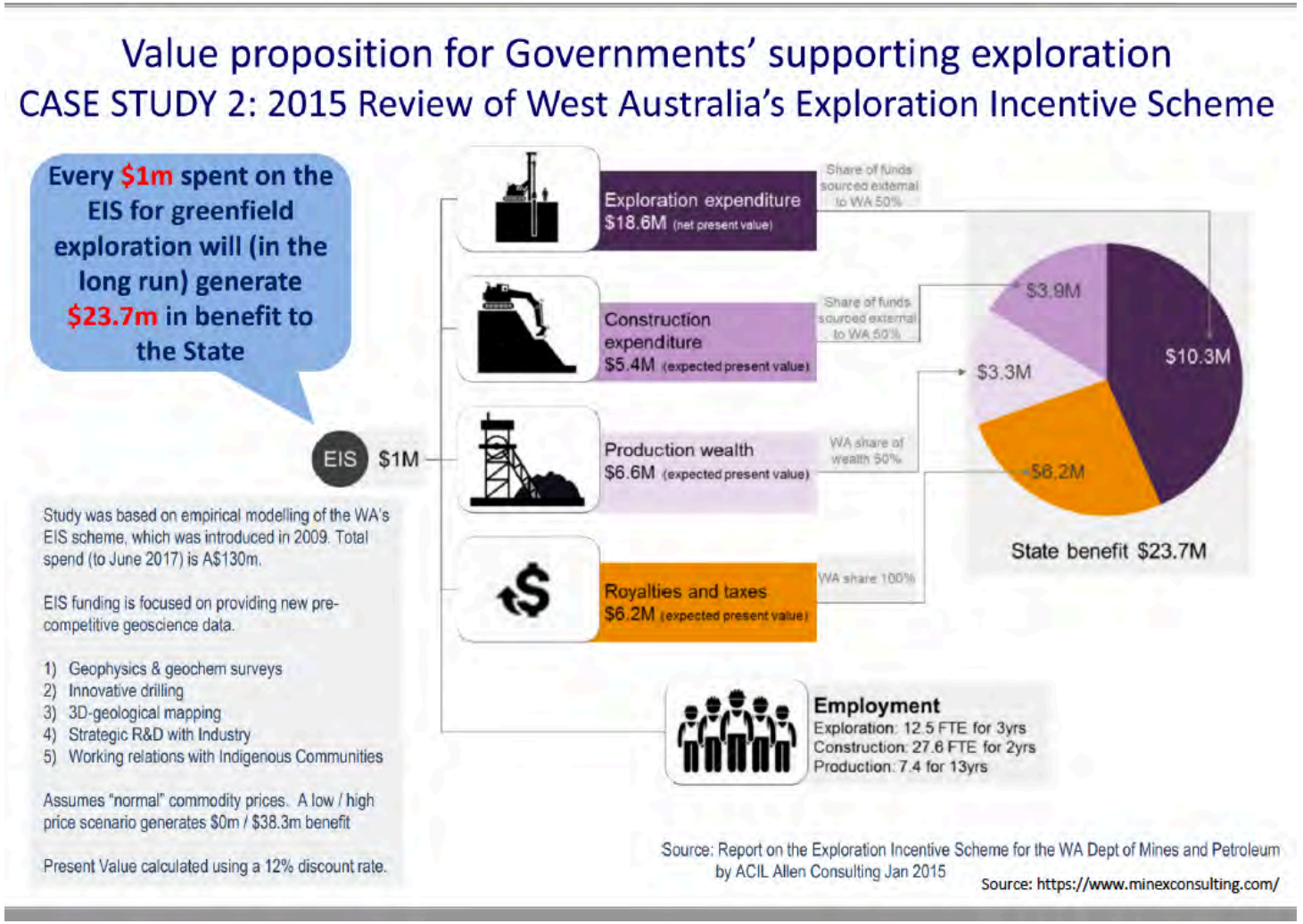
Other benefits to South Australia

- Internationally recognised as having "best practice" policies & regs … such as "One stop shop" and improved land access decision making
- SA now recognised as a leader in developing exploration technologies
- Higher PPI & MPI ratings in the Fraser Institute surveys

Source: https://www.minexconsulting.com/

Source: Report on the Evaluation of the Plan for Accelerating Exploration (PACE) for the SA Department of Manufacturing, Innovation, Trade, Resources and Energy by Economics Consulting Services April 2014

West Australian Case Study II



For risk-takers it can be like a cow looking into an engine

Technically complex

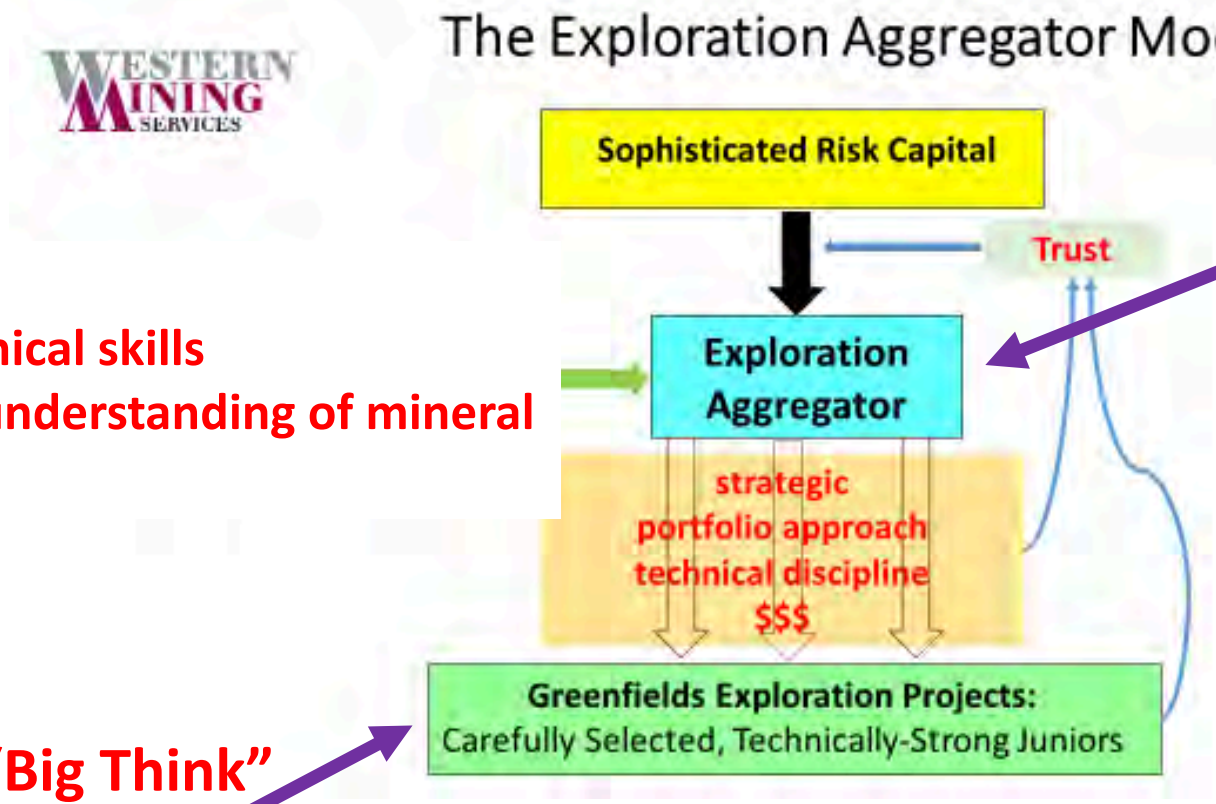
Trust

Multiple interwoven strands

More an art than a process

All about the people and leadership

How it Might work for Ireland and its world-class Zn-Pb ore-field



Financial literacy
World-class technical skills
Strong strategic understanding of mineral exploration

NTMA
- ISIF Co-Invest?
Venture Capital Fund?

Juniors using "Big Think" and opening up the search space

State-sponsored research is great but only drilling finds orebodies

You can only guarantee failure.
You only need to be right that one time,
usually for the wrong reasons – *Dan Wood*