Exploration and Production:

Keys to Success and Common Reasons for Failure

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Keys to Success and Common Reasons for Failure

- Understanding the EP business
  – Phases of the business and ‘best in class’ attributes
- Understanding Strategies of Integrated Companies
  – Key to independent EP company success
- Independent EP Strategies
  – Identifying opportunities and niches

Three Phases of Exploration and Production

1 Early Exploitation

NEW PLAY AND FRONTIER

- Few competitors
- Majors, acreage brokers
- Risk takers
- New technology
- High upside
- No Infrastructure
- Generous tax terms
- e.g. Deepwater

2 Main Exploitation

MAJOR DISCOVERIES

- Many competitors
- Majors, NOCs, EP companies
- Main area of industry spend
- Established technologies
- Expensive entry
- Low upside
- Major asset trading

3 Mature

OVER-INVESTMENT

- Many players
- Majors, NOCs, EP companies
- Low/negative returns
- Reinvestment reduced
- Little exploration activity
- Infrastructure ownership hinders new entry

Adapted from Browne (1999), Halbout (2003)

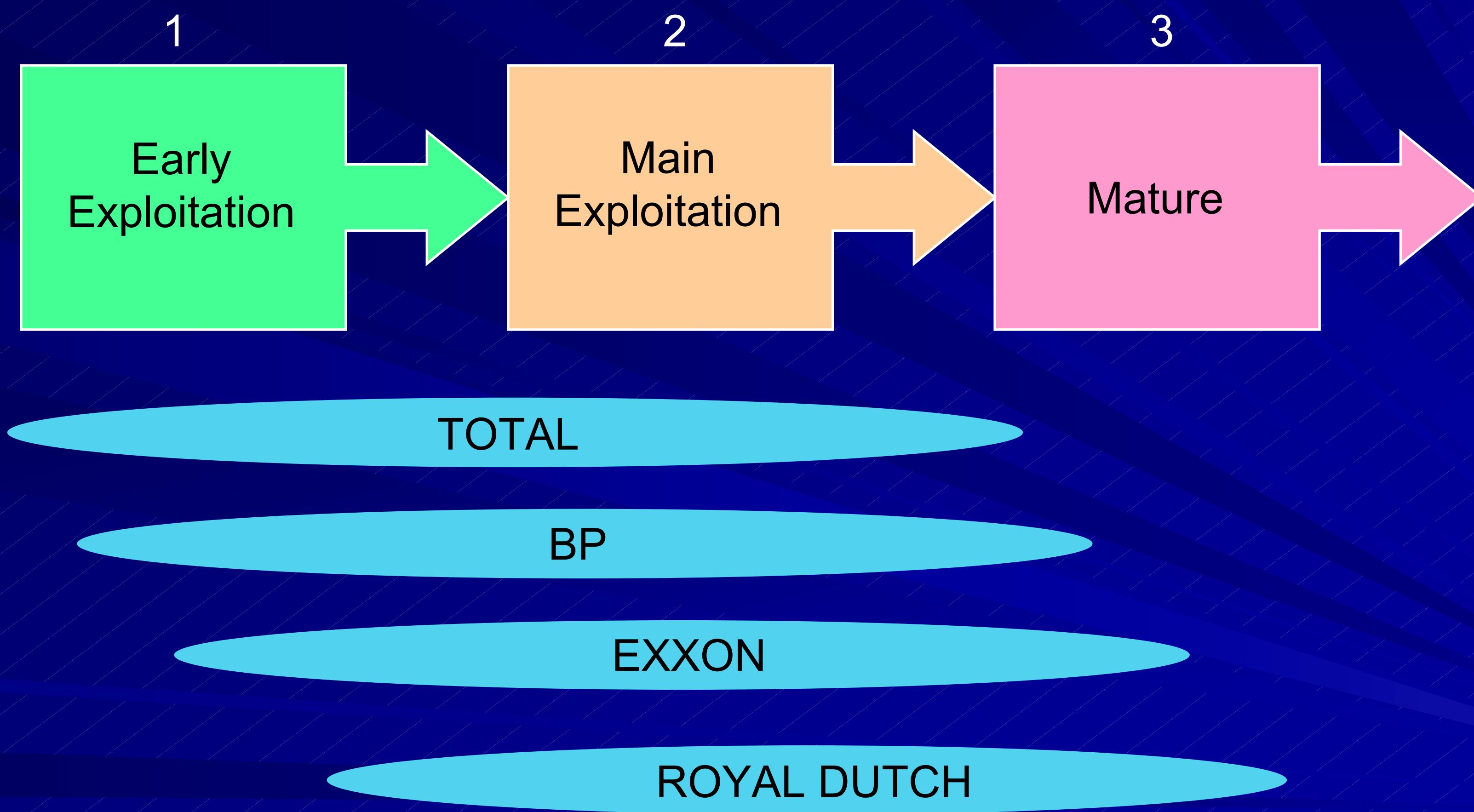
Features of 'Best In Class'

- Goal: A Portfolio of assets that minimises complex managerial structure and focuses on projects that offer the best opportunity for high profitability and growth in the near and long term

MATERIALITY		CAPITAL EFFICIENCY		VALUE CREATION
Number of high impact discoveries Strategic focus Preservation of regional knowledge Optimised portfolio Clear access strategy	+	Finding costs Balances risk assessment Optimised development of reserves Clear exit strategy Constant investment reviews	+	Cycle time to commercialisation Realistic cycle times Optimal shareholder management

Adapted from Wood (2000)

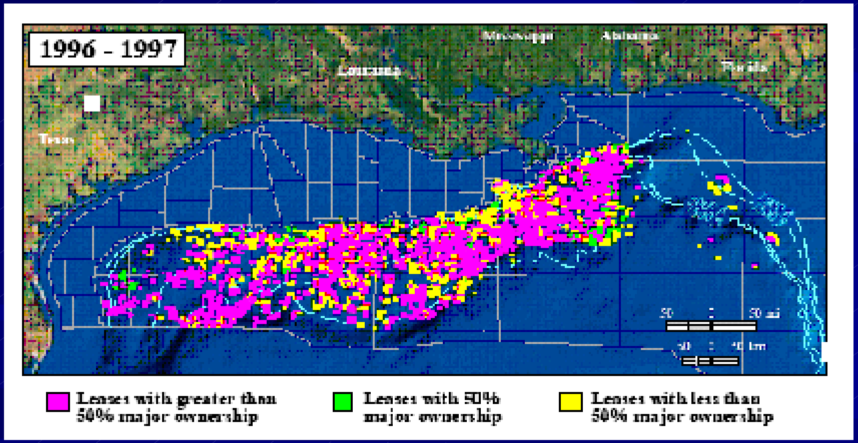
Integrated Oils: How do they fit this picture?



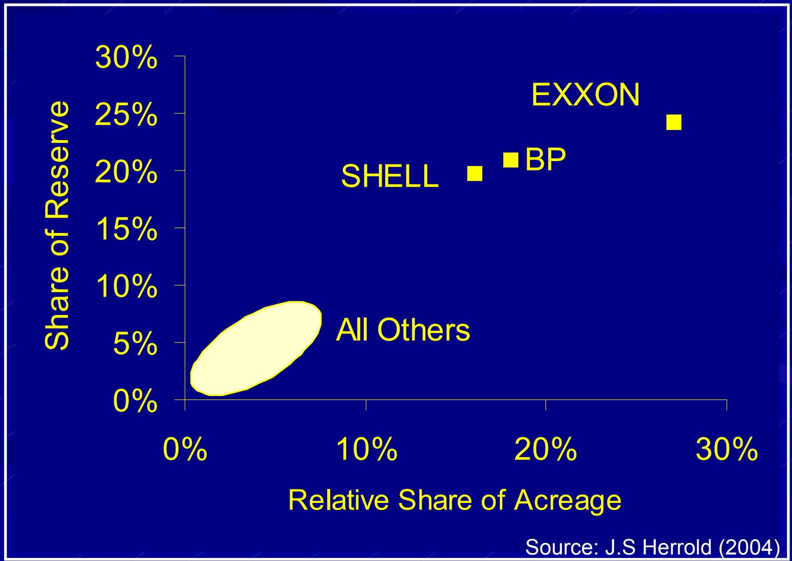
Early Exploitation: Integrated Oil Strategy

- Become a 'basin master'
  - Gain insight into 'hot exploration areas'
  - Leverage long-term relationships
  - First mover advantage

Example: Gulf of Mexico Deepwater



Example: Aggregate Position in 'hot' exploration areas*

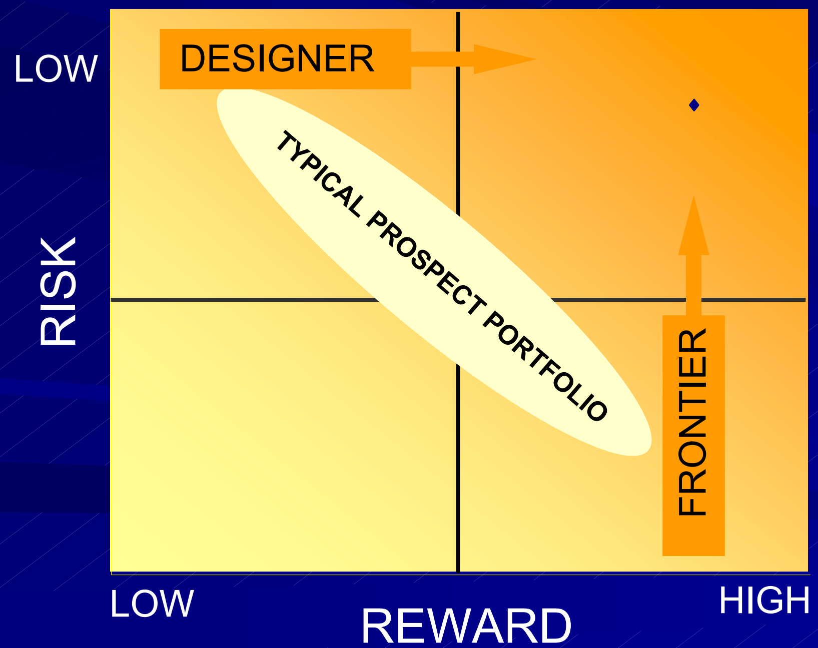


* Angola, Caspian, GoM, Nigeria

Majors have flexibility to optimise the portfolio

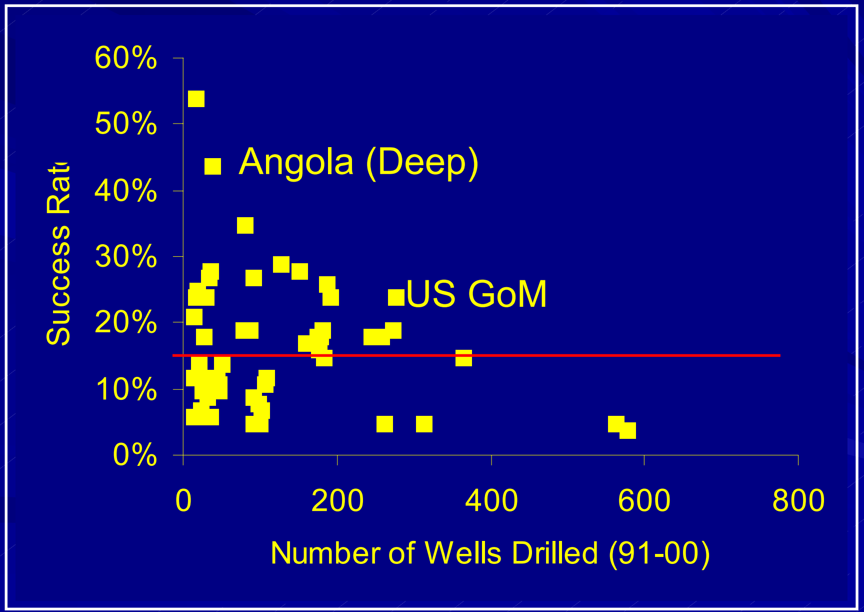
- Average global success rate is 1 in 6
- Need to balance risk and reward

Optimising the Risk



Source: After Wood (2000)

Average Commercial Success Rates

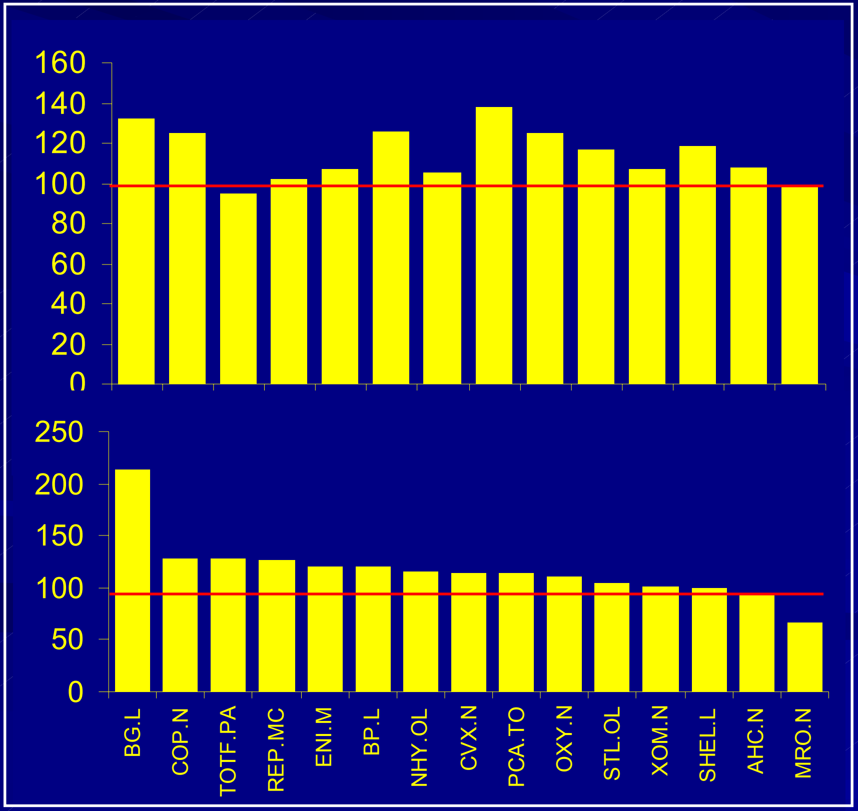


Source: Wood Mackenzie (2003)

Exploration: Majors Track Record

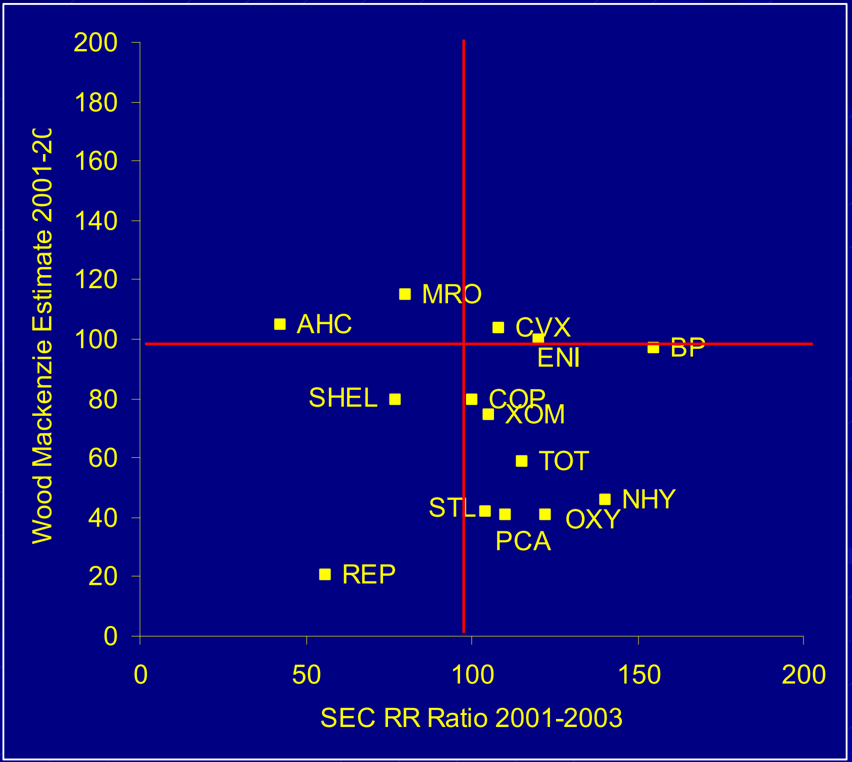
- Only just replaced reserves annually since 1990
- Big difference between the various companies
- SEC reserves do no reflect actual performance

Organic RR Ratio 90-03



Source: Company Data

Reconciling SEC versus Actual

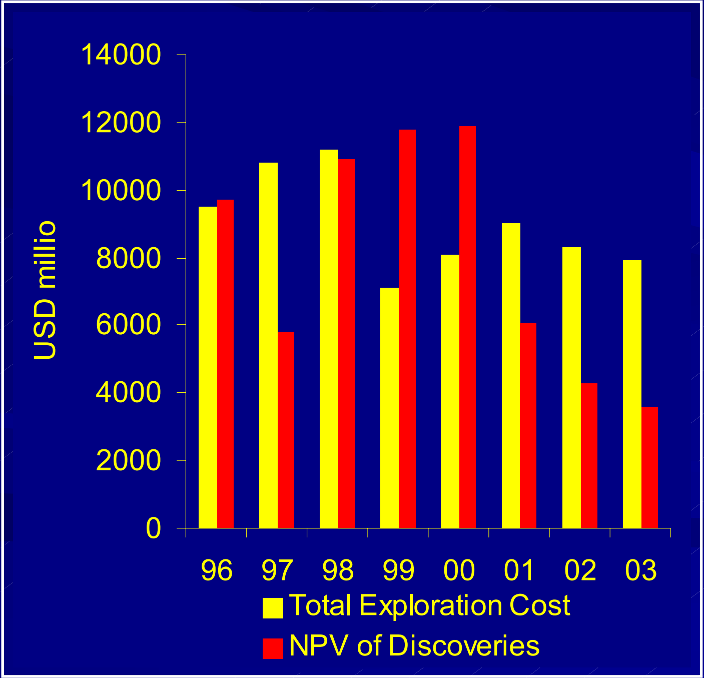


Source: Wood Mackenzie (2003)

Exploration: Have the Majors Added Value?

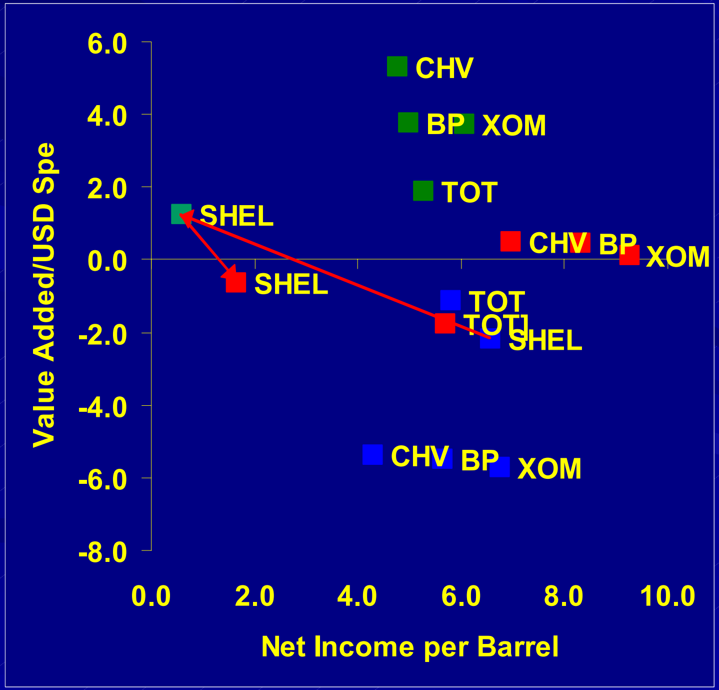
- Majors have invested $50 billion from 1996-2001
- Only created $23 billion in value
- Only 13 out of 25 companies have added value

Exploration spend vs NPV



Source: Wood Mackenzie (2003)

Value Added vs Income

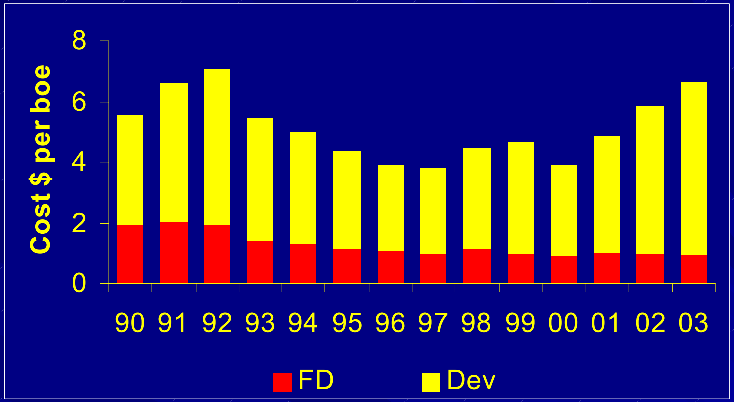


Source: OIES (2005)

Exploration: Key Reasons for Failure

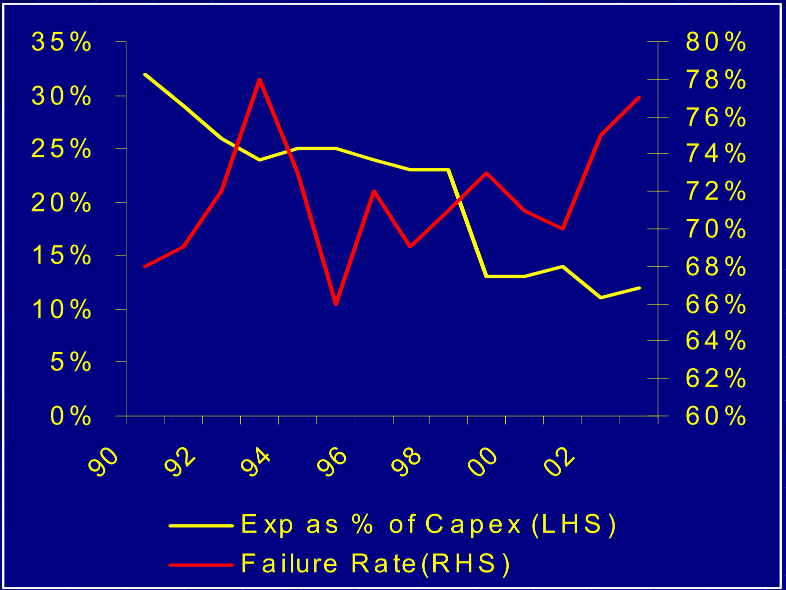
- Exploration spending fallen as a percentage of upstream capex
- Failure rates starting to rise as acreage positions diminish
- Rising cost pressure

Finding and Dev Costs



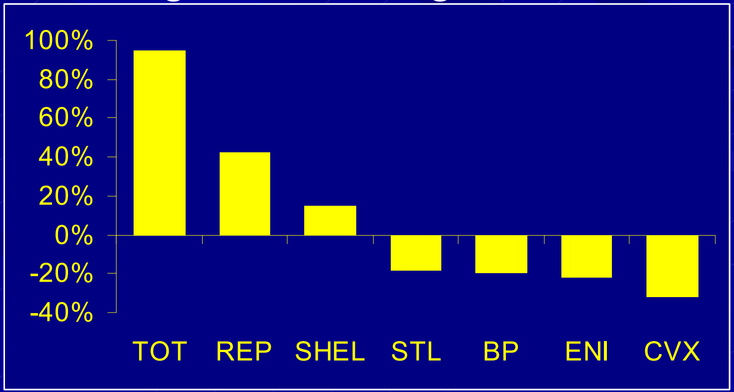
Source: Company Data

Success Rates and Falling Capex



Source: Company Data, CSFB (2004)

Changes in Acreage Positions

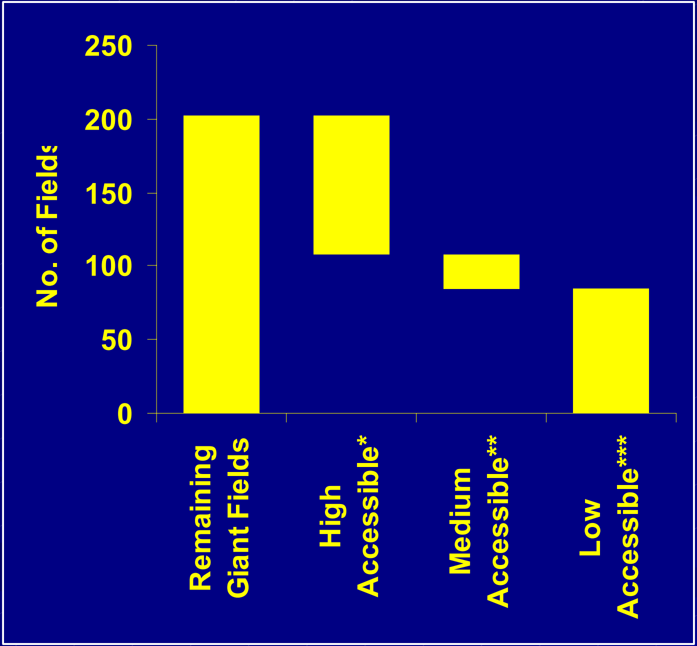


Source: Company Data

Exploration: Where next for the majors?

- Access is an issue for all companies
- Alliances with NOC are inevitable
- Further consolidation in the absence of growth

Undiscovered 500 mmbbl fields

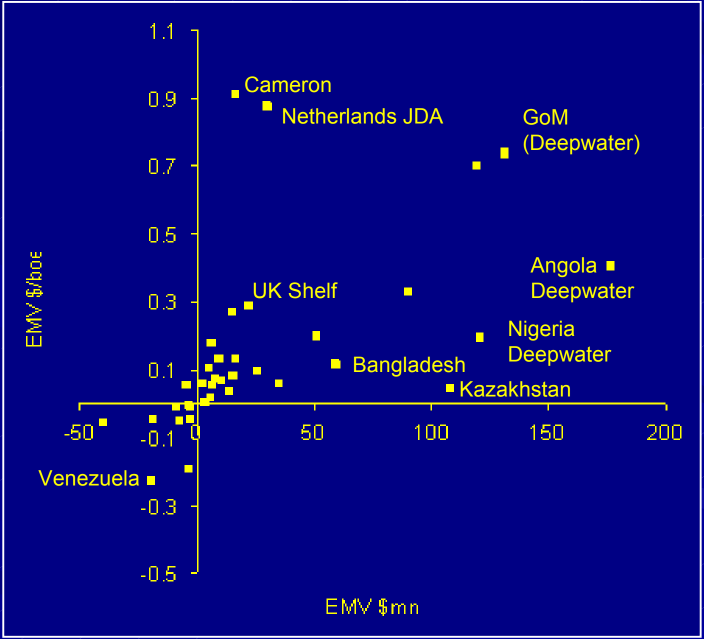


* All others ** China, Oman, Russia, Venezuela

*** Algeria, Iran, Kuwait, Libya, Mexico, Saudi Arabia, UAE

Source: USGS, JS Herrold

EMV: Deepwater Attractive

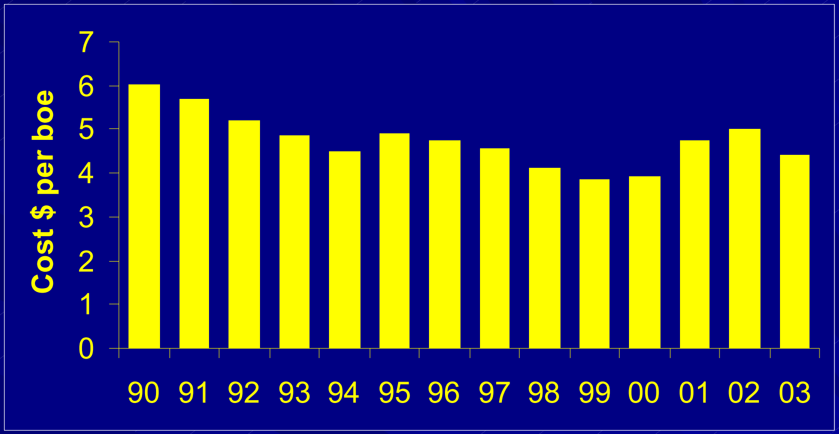


Source: Deutsche Bank (2003)

Mature Provinces: Majors Strategy

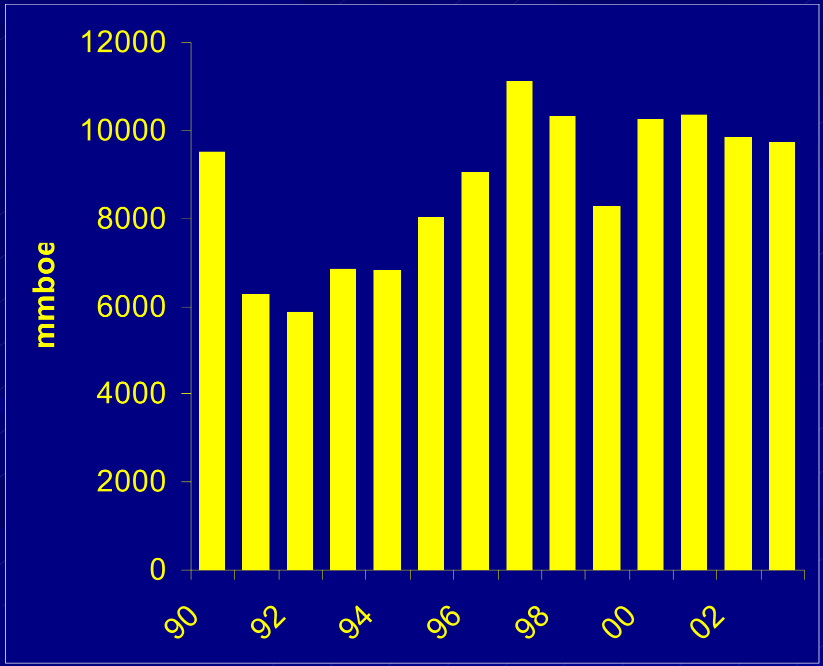
- Focus on cost reduction
- Focus on maximising margins
- Focus on portfolio optimisation

Production costs reduced



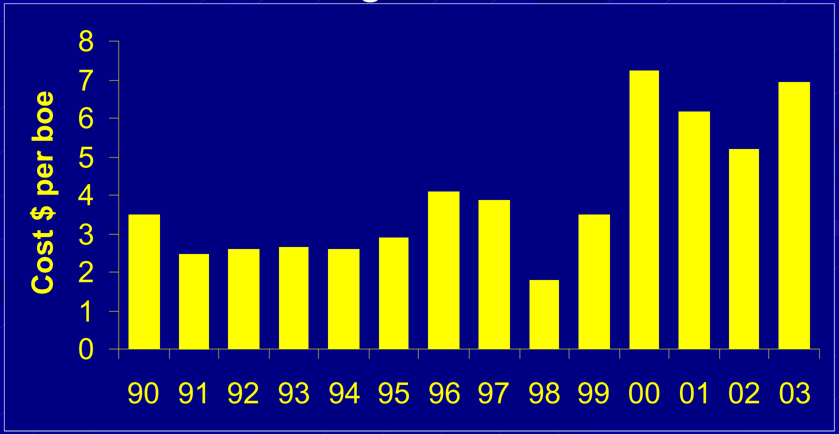
Source: Company Data

Volume of Reserves Traded



Source: Company Data

Earnings enhanced

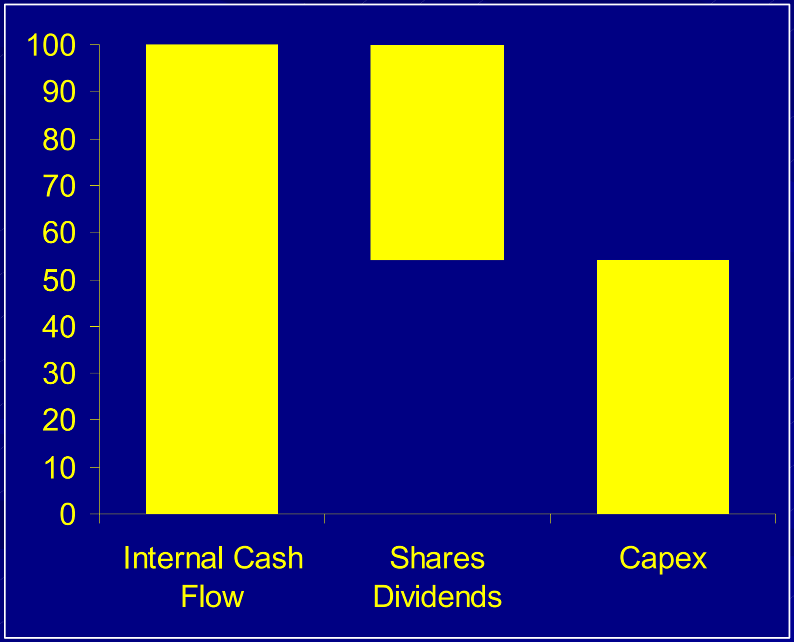


Source: Company Data

Main Exploitation: 'Cash Cow' for Majors

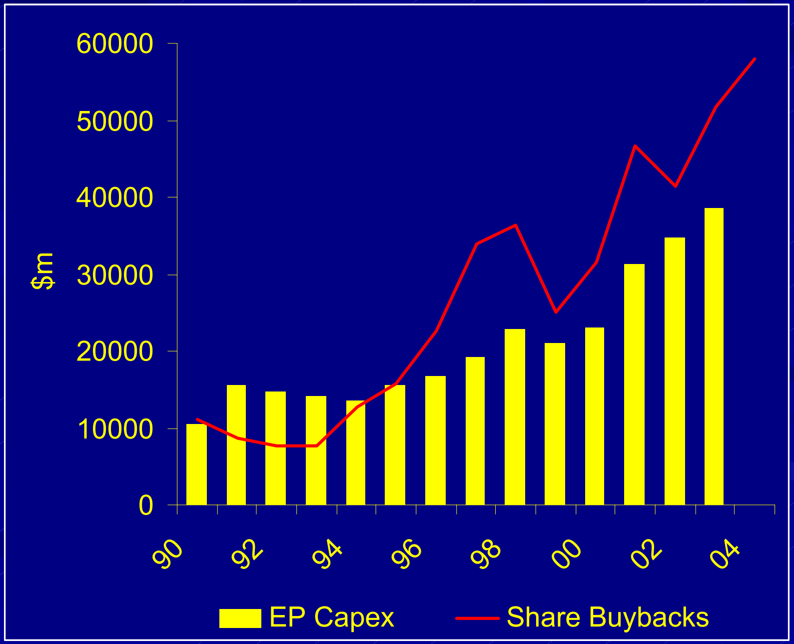
- Main area of investment but…
- Internal and external constraints on growth
- More money now returned to shareholders than invested upstream

Majors Internally Financed and…



Source: OIES, Company Data

Cash Returned to Shareholders



Source: OIES, Company Data

Majors EP Strategy: Conclusions

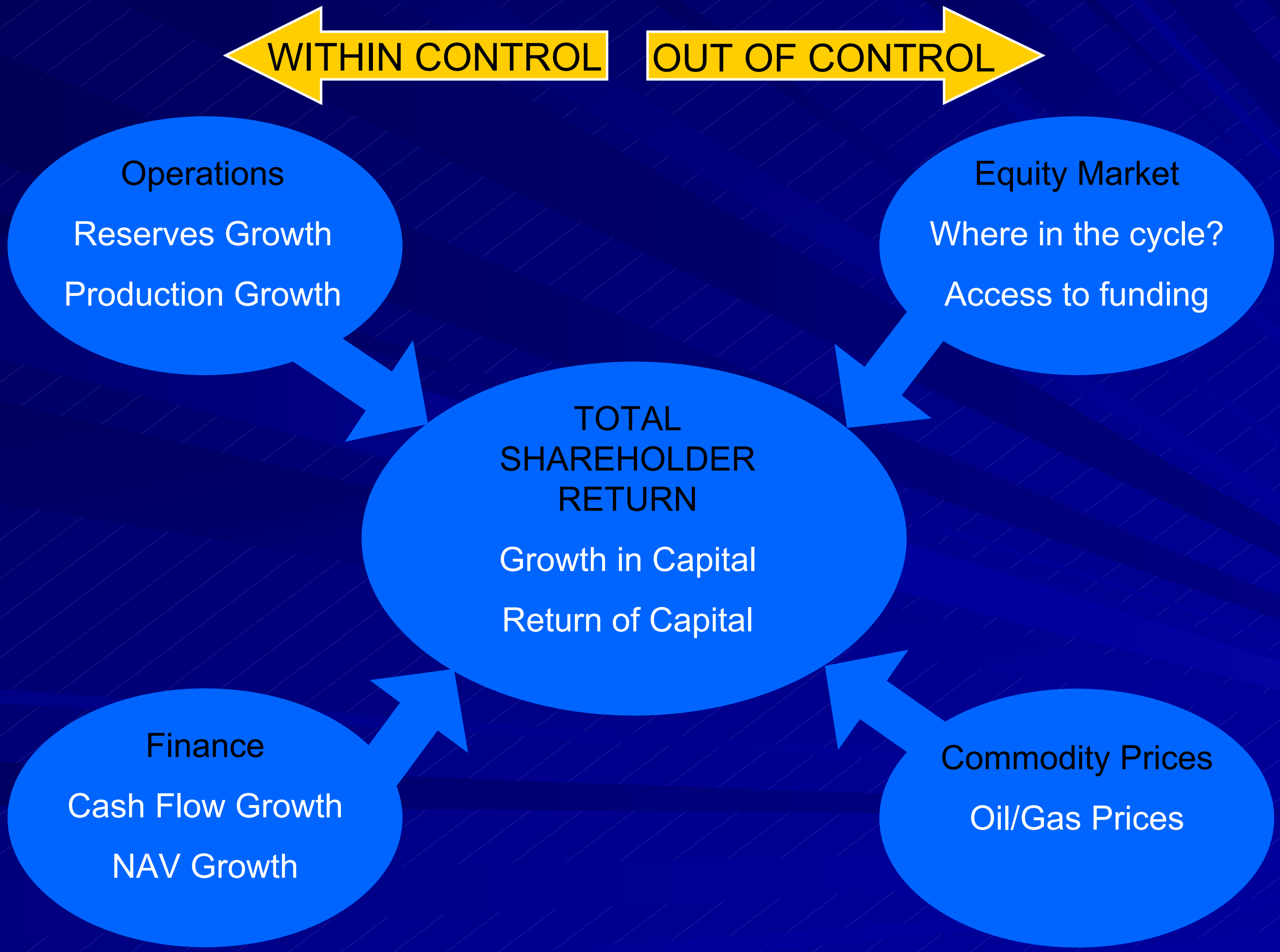
IN

- To be successful a company has to spend enough money on new business to ensure it has a significant share of initial finds

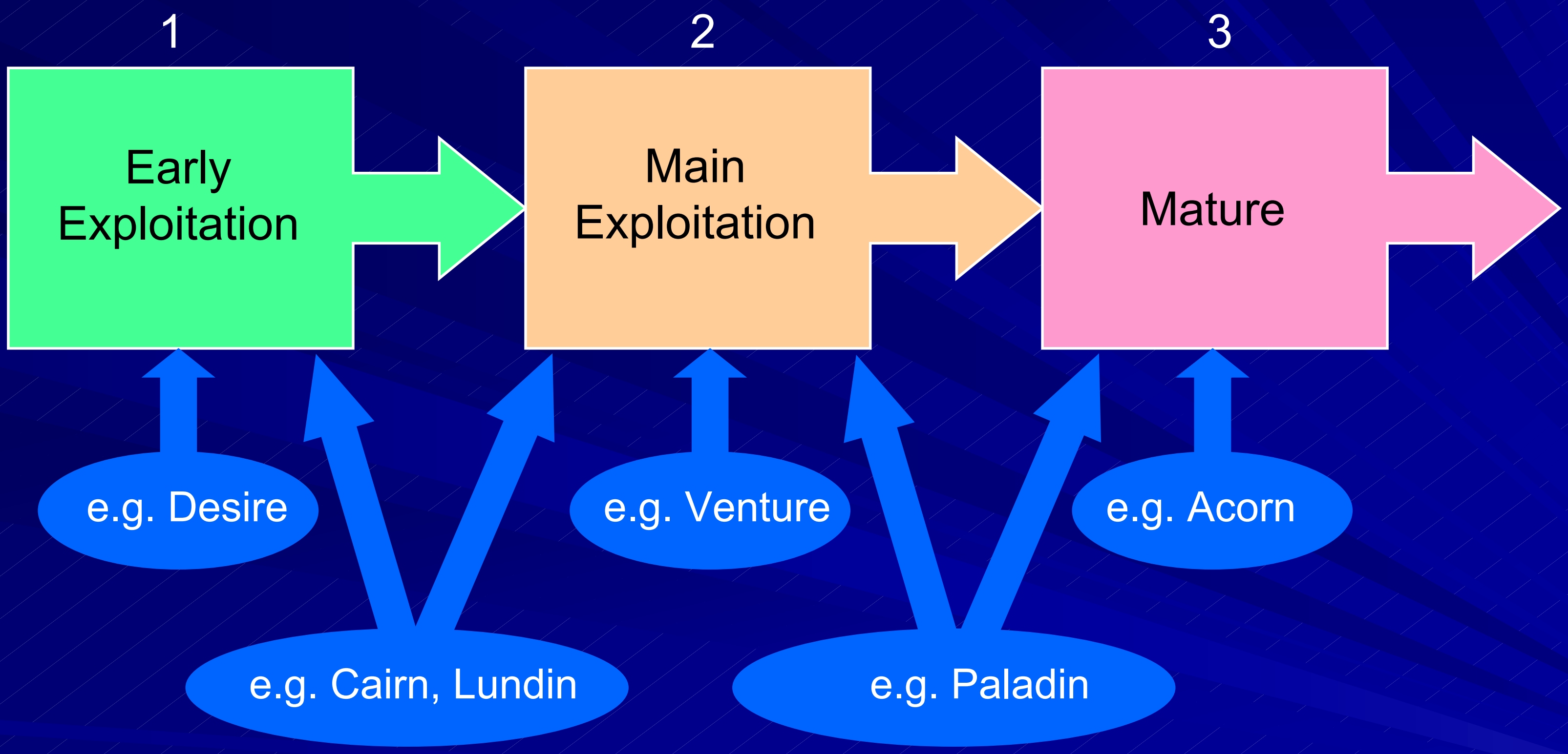
- To be successful a company must know when it has reached the point where further investment would be unproductive

OUT

What Determines EP Company Success?



EP Companies: Where do they fit?



EP Companies: How do they grow?

EXPLORATION

Cost of access

Technology

Good Data

People

EXPLOITATION

Modelling

Project Management

Infrastructure Access

REHABILITATION

Contract terms

Reservoir modelling

Project management

ASSET DEALS

Correct deal analysis

Strong technical diligence

Financial strength

CORPORATE

As left +

Finance

Communication

Integration Skills

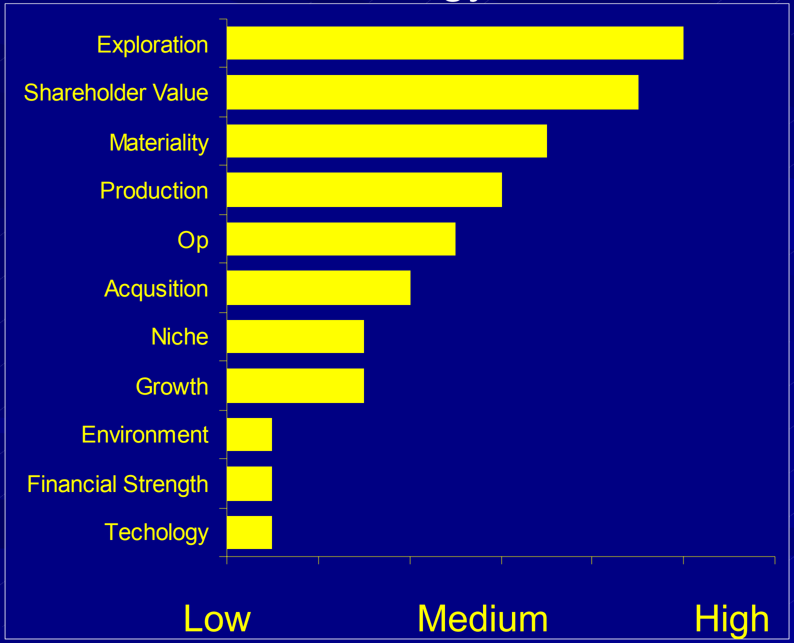
ORGANIC GROWTH

ACQUISITIVE GROWTH

EP Companies: Stated Strategies

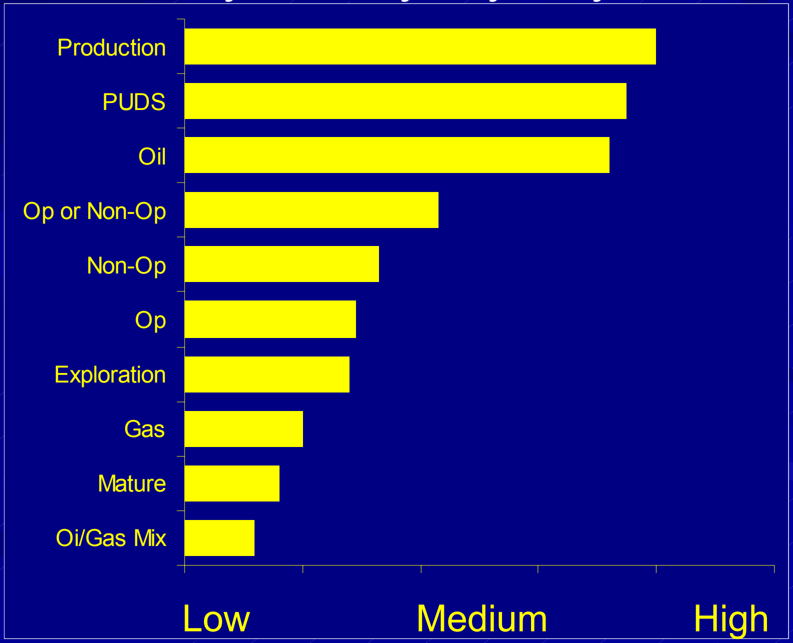
- Stated strategies are very variable
- Value, growth and material positions require
- Actual strategy often varies from stated strategy

What is in the strategy statement



Source: OIES, Company Data

What they actually say they want

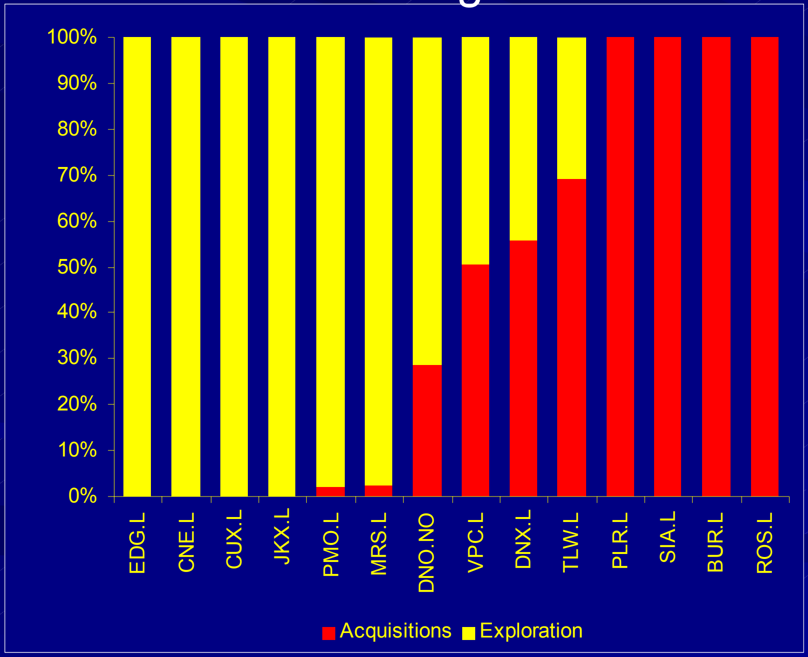


Source: OIES, Company Data

EP Companies: Strategic Differentiation

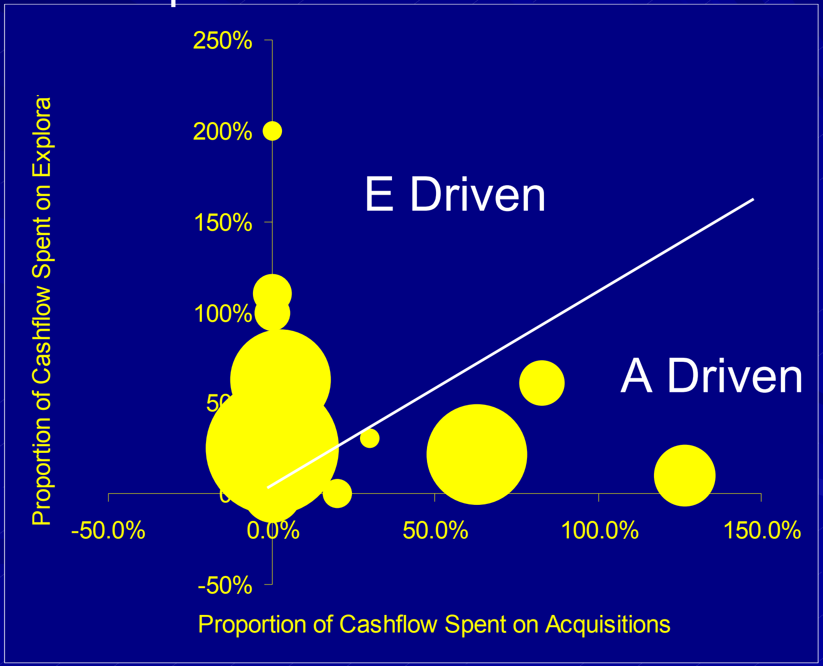
- Despite offering balance strategies clear distinction between :
  - Companies who have added all reserves through acquisitions
  - Companies who have added all reserves through exploration

Additions through E or A



Source: OIES, Company Data

Capex is either E or A driven

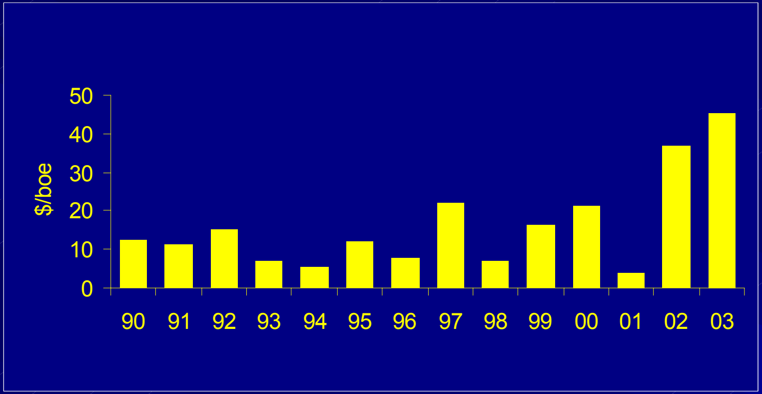


Source: OIES, Company Data

EP Companies: Just how successful?

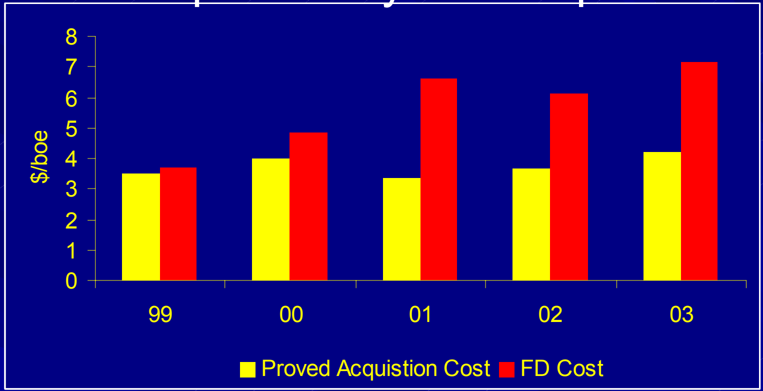
- Most of the growth in the sector comes through acquisitions (cheaper)
- Step change exploration success is rare (volatile)

Erratic FD track record



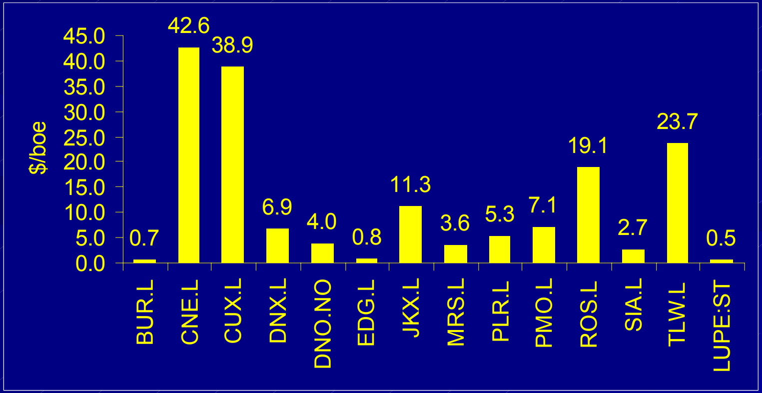
Source: OIES, Company Data

Cheaper to buy than explore



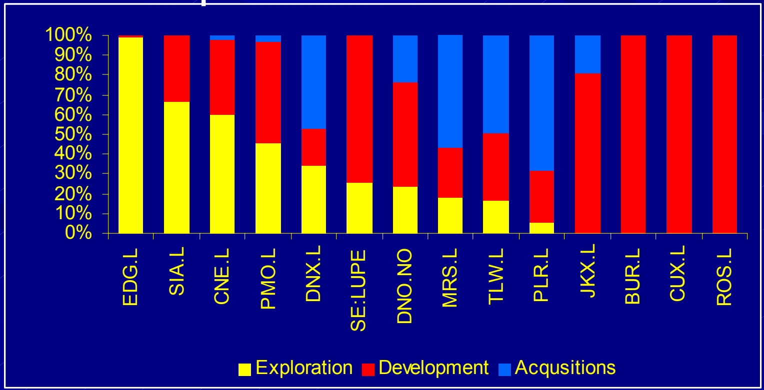
Source: OIES, Company Data

FD Cost 01-03 Hit or miss!



Source: OIES, Company Data

Capital Allocation 01-03

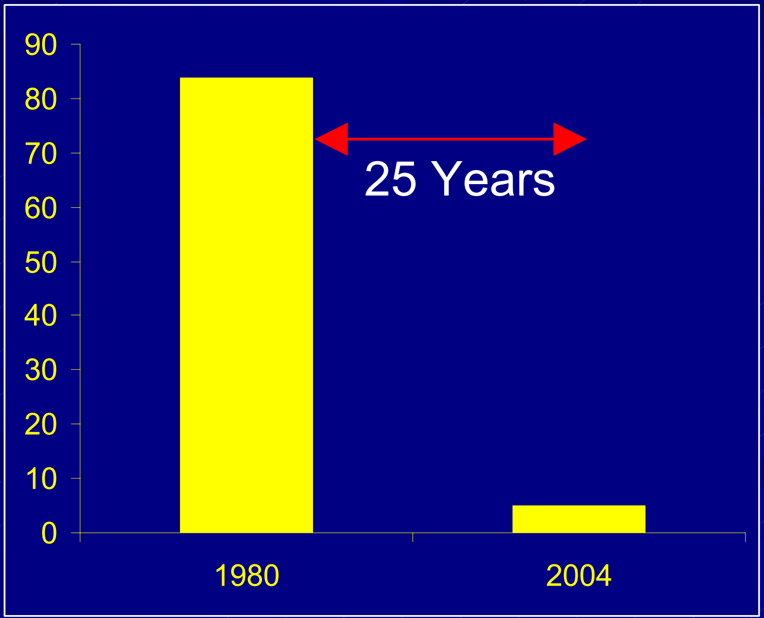


Source: OIES, Company Data

EP Companies: Only a short time to deliver

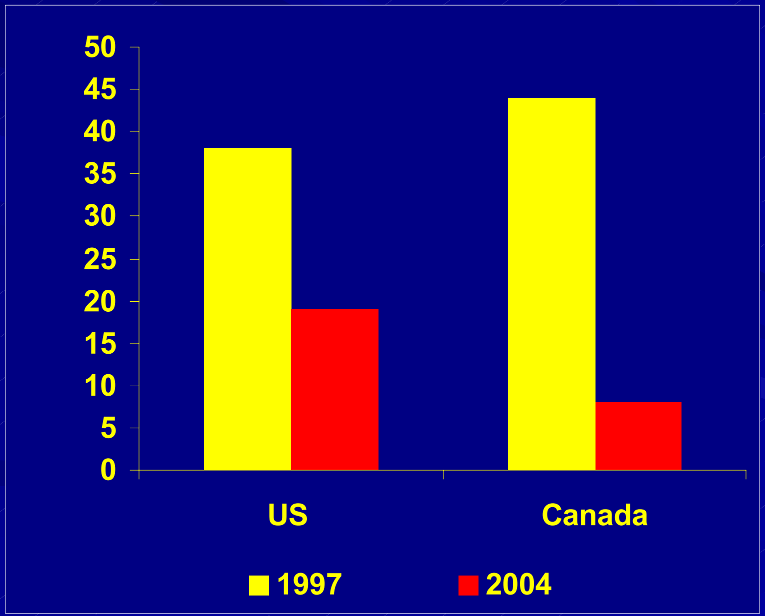
- Average life of project from 1st exploration to abandonment is 25 years
- Average life of EP company is less than 10 years
- Management has deliver outstanding results and quickly

US EP Companies to Survive 25 Years



Source: JS Herrold, Harrison Lovegrove

Change in EP Company Numbers 97-04

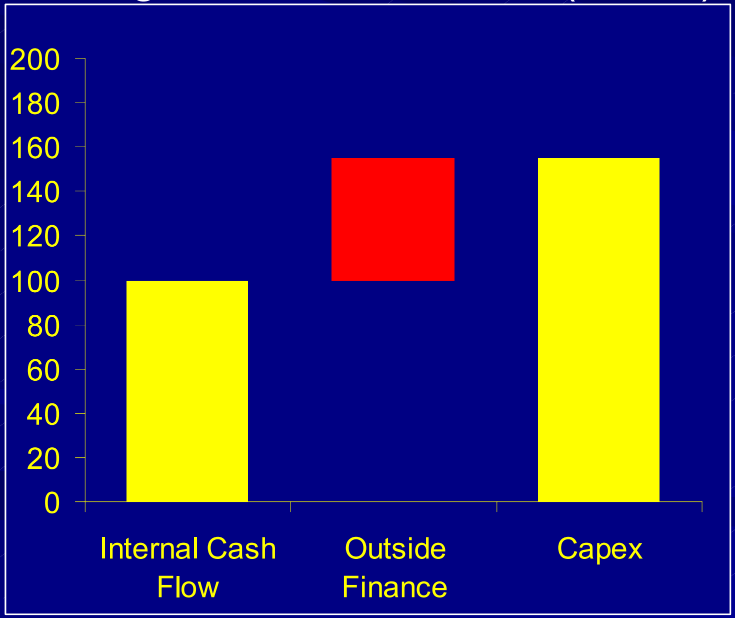


Source: Morgan Stanley

EP Companies Usually Capital Constrained

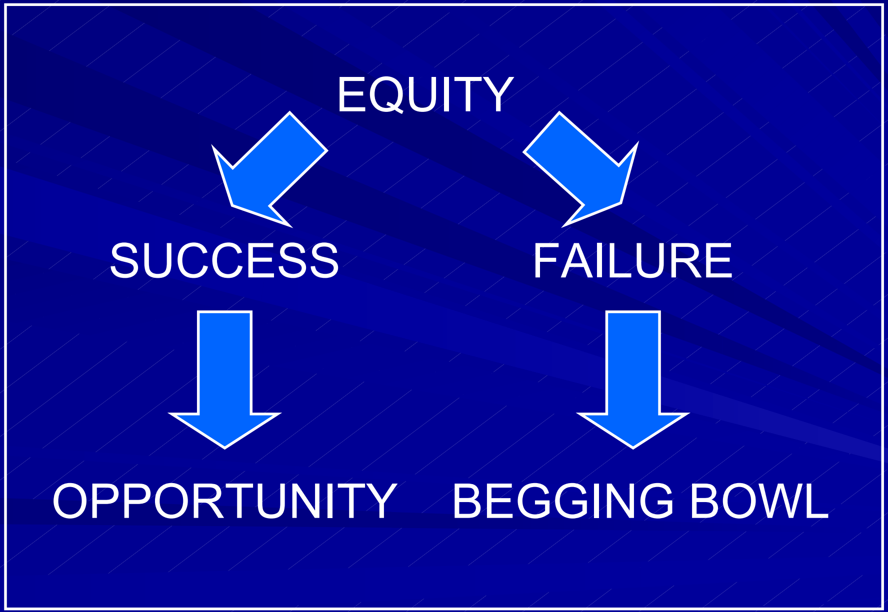
- Most EP companies rely on 'Other Peoples Money' to:
  - Finance the gap between cash flow and exploration
  - Run the business as a going concern
- Failure to maintain a robust balance sheet is common concern

Living Outside of Means (01-03)



Source: OIES, Company Data

A Fine Line between Success & Failure

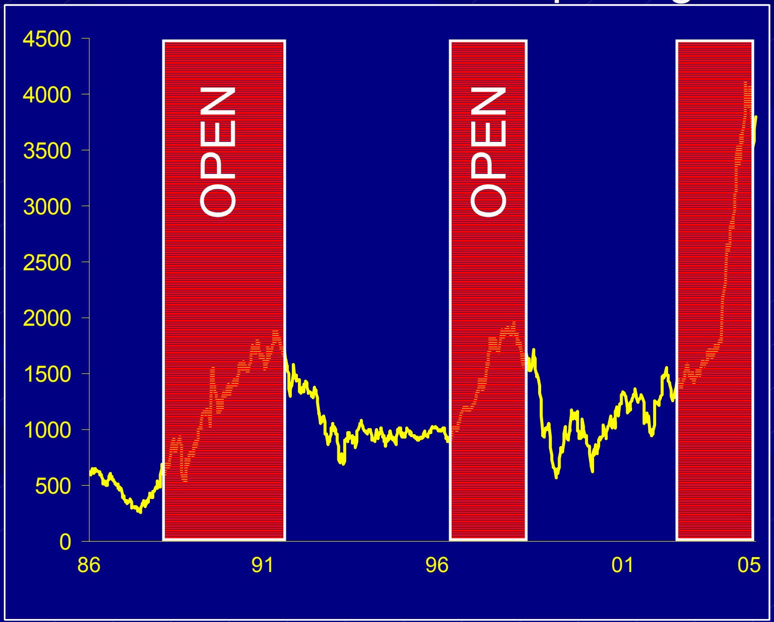


Source: OIES

EP Companies: Equity Market Sentiment

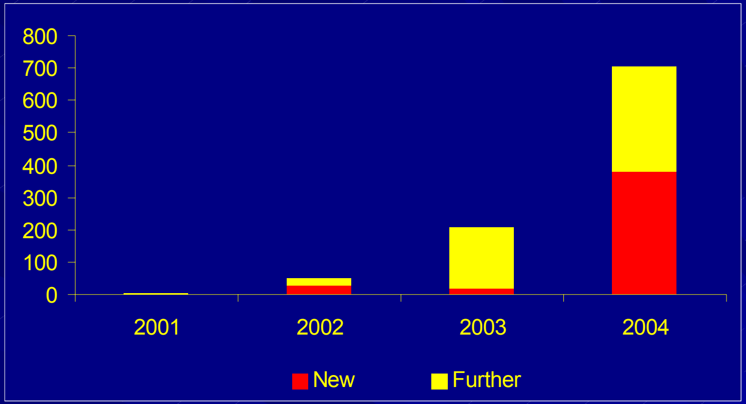
- There are periods when the equity market views the sector positively
- EP companies must refinance during these periods
- The high expectations are rarely fulfilled

EP Sector and Market Opening



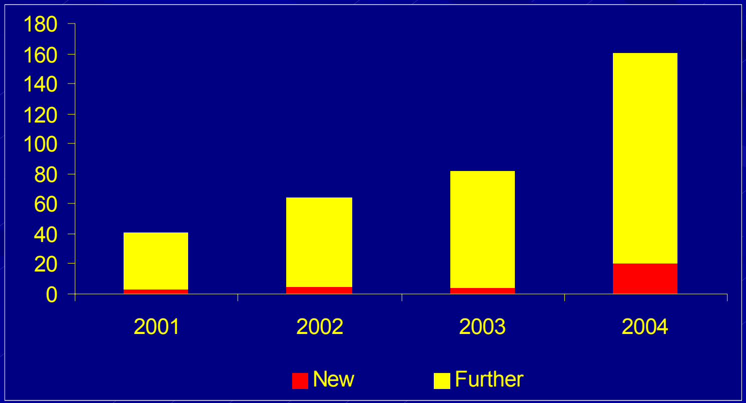
Source: OIES, Datastream

AIM: Value New Deals (£m)



Source: London Stock Exchange

AIM: Number of Issues

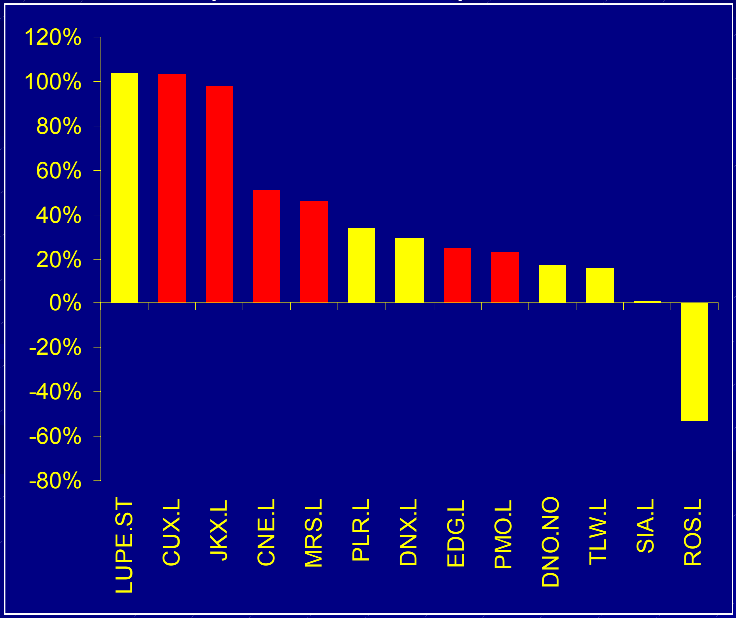


Source: London Stock Exchange

EP Companies: So who has succeeded?

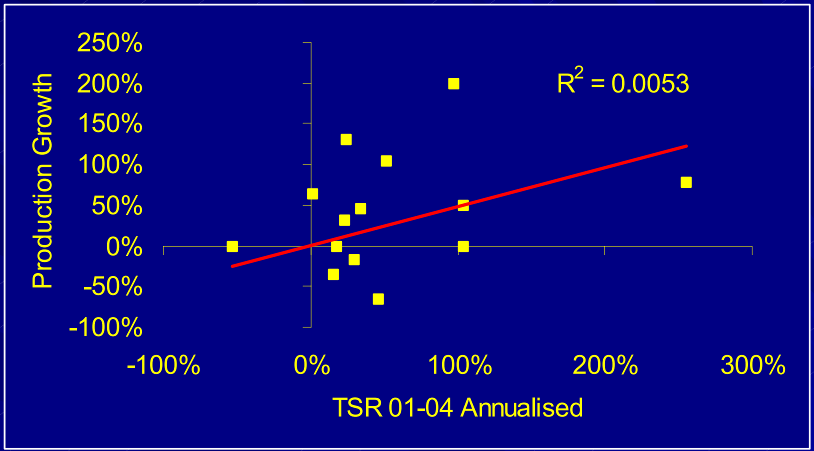
- There is no consistent pattern
- Equity markets now discounting exploration success which is a risk

TSR (Annualised) 01-04



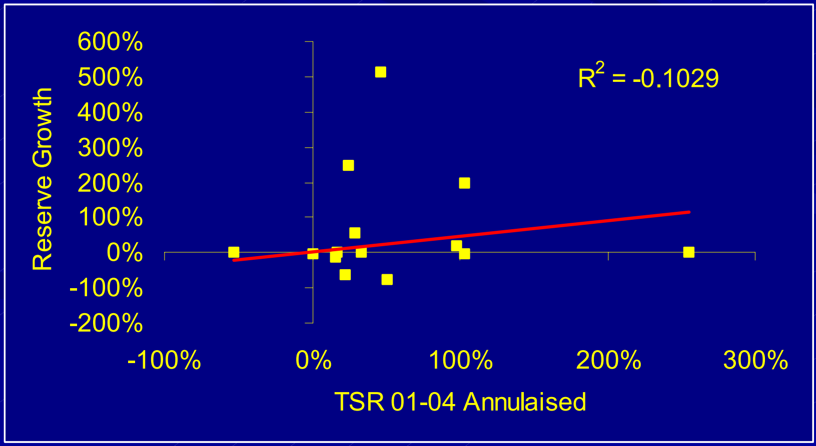
Source: OIES, Company Data

Production Growth vs TSR



Source: OIES, Company Data

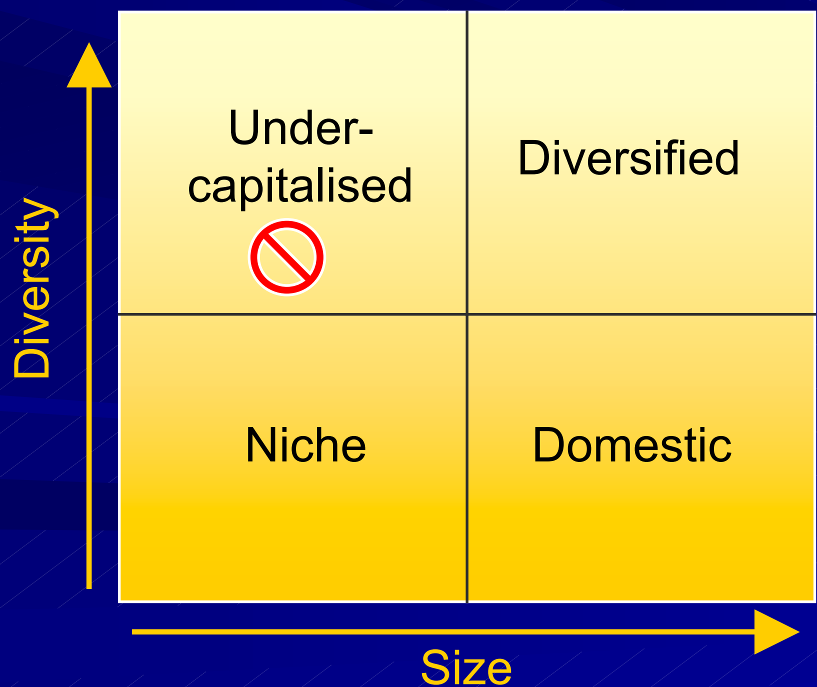
Reserves Growth vs TSR

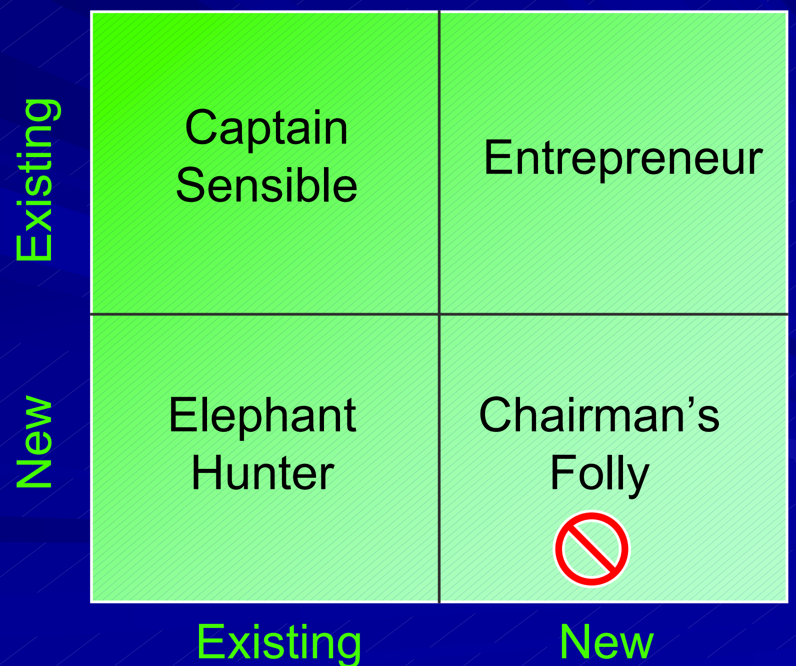


Source: OIES, Company Data

EP Companies: Common Reasons for Failure

- ‘Scatter Gun’ approach to exploration
- Extremely diversified portfolio and failure to deliver projects
- Weak balance sheet
- No clear exit strategy



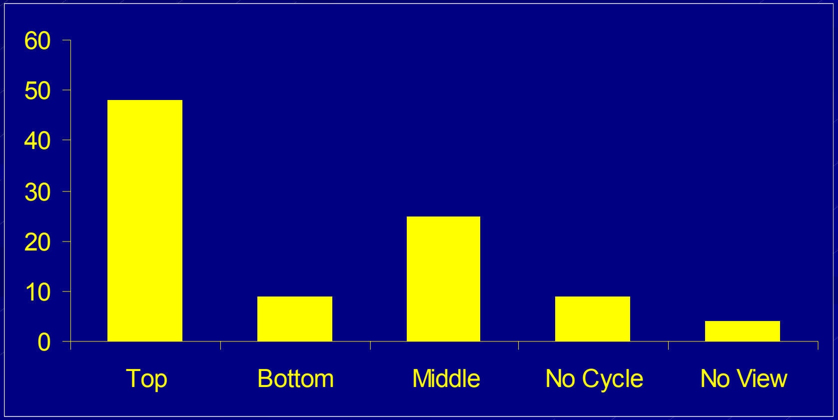


Source: Harris, Jeffs (1993)

EP Companies: Common Reasons for Success

- Focus:
  - Offset the advantage of size through strategic differentiation
- Competence:
  - Recognise where in the chain you have competence and exploit it
- Opportunistic:
  - Be opportunistic and take advantage of deals where you have insight

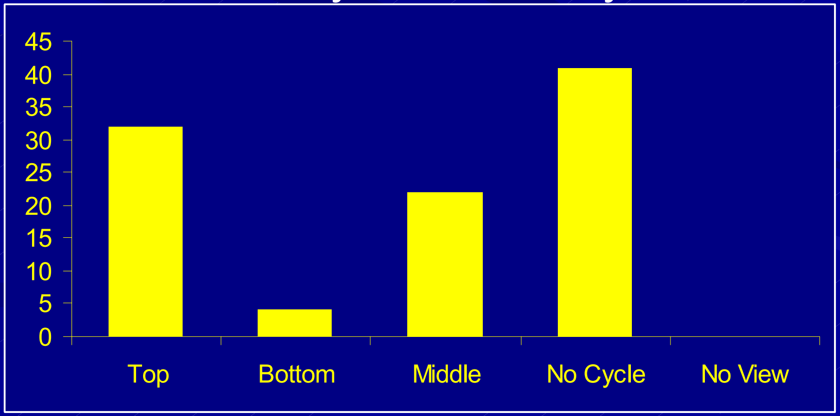
Is there a cycle? Financial view



Source: OIES

V

Is there a cycle? Industry view



Source: OIES

Even Fools are Lucky!

- But to achieve consistency need to:
  - Deliver above average results. This typically occurs when a niche is exploited
  - Remain entrepreneurial, flexible and opportunistic, keeping all options open
  - Remember that teams are usually too small to deal with more than a 3 core area strategy.
- Remember that:
  - The growth potential of an individual company that competently exploits a niche is significantly higher than all the factors that influence the entire group

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Keys to Success and Common Reasons for Failure

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