Strategies for Success (and Failure) in Oil and Gas Exploration: Identifying What Works and What Doesn’t

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Presentation to the
Exploration Management Forum
The Conference Board of Canada
PRESENTATION OUTLINE

Strategies for Success
The Elements of Failure
Some Examples
What Excites Capital Providers
Strategies for Exploration Success

Background to the Study
The “Exploration Process” Defined

“A dedicated long-term intellectual and capital commitment to the assumption of risk and reduction of uncertainty in the search for commercial hydrocarbons where they have not previously been found.”
Strategies for Exploration Success

Even Fools are Lucky

These strategies are designed to achieve consistency in the exploration process.
Strategies for Exploration Success

#1

THE RIGHT PEOPLE

Success is a direct result of the quality and dedication of the team.
MANAGEMENT

- Experienced explorationists with a minimum of 15-20 years broad experience in a number of different basins with diverse stratigraphic and structural play types.

- Proven and successful "oil finders" in own right.

- Proven management and leadership experience.

- A verifiable track record of success in management of a similar enterprise.
MANAGEMENT

• Have a thorough understanding of risk management and economics.
• Not risk adverse; must understand that dry holes are an integral part of the exploration process.
• Think positively. *Oil is not found by nay sayers!*
• Able to prioritize and stay focused.
• Must have an open mind without a bias against particular regions or plays.
MANAGEMENT

► Able to nurture creativity of exploration staff.

► Able to identify and hire successful oil finders.

► Able to delegate.

► Excellent communicators.

► Patient.
EXPLORATIONISTS

► Must be the very best you can identify for their particular area of expertise. (“Poaching” of staff from the competition allowed).

► Only employ proven oil finders for key staff positions. 10 to 20 years experience in diverse structural and stratigraphic play types with the last five years in primary play area.

► Staff is cross-trained in geology, geophysics, and engineering so they can effectively communicate with each other.
EXPLORATIONISTS

► Must be creative and have good visualization skills.

► All geoscience employees must be computer literate and familiar (or at least aware) of latest technologies.

► Must appreciate the technical and business risks, and economics of their play concepts.

► Must be good communicators.

► Supplement staff with expert contractors and consultants on an "as needed basis"
EXPLORATIONISTS

Size does not a successful exploration team make

- Creativity
- Thinking “outside the box”
- Hard working
- Dedicated
- Exited – employees “sing the company song”

(vs. Texaco in the 1970’s)
Strategies for Exploration Success

THE TEAM IS ASSEMBLED.
NOW WHAT?
Strategies for Exploration Success

A Strategic Business Plan
Focus
Technological Resources
A Competitive Advantage
Capital Resources
A Commitment to the Exploration Process
Perseverance and Patience

(Some luck too ..... but, make it happen)
Strategies for Exploration Success

Define strategic play areas. This is a function of:

- greatest reserve potential at least finding cost;
- areas of maximum potential for new discoveries; availability of leases;
- best economics;
- risk diversification;
- markets;
- special knowledge which provides a competitive edge.

Development, operating and marketing costs must be carefully considered in the play selection process.
Strategies for Exploration Success

► Focus on a limited number of plays; 5-6 is a good number.

► Develop priorities, and stay focused.

► Pursue a portfolio with diversified risk, ranging from low risk/moderate reward, to modest risk/moderately high reward, to high risk/high reward.

► A conservative budget allocation would be 50% lower risk, 35% moderate risk, and 15% higher risk
Strategies for Exploration Success

• Look for new plays in, around and under established producing areas where there is an existing operating infrastructure.

• Get into a new play in the early stages. The largest reserves are generally found in the first phase of exploration in a new play.

• Lease new plays as quickly as possible before competition drives up costs.

• Develop a play orientation to a new area rather than a single prospect approach.
Strategies for Exploration Success

Only spend what you can afford - do not explore with high levels of debt!
Strategies for Exploration Success

Acquire as complete a data base as possible of non-exclusive and proprietary information.

*Do not skimp on data – this is the life blood of the exploration process!*
Strategies for Exploration Success

AVOID AREAS WHERE:
► there is only a single exploratory play;
► new information could kill your exploration concept;
► the play is sensitive to oil & gas prices;
► where costs could easily exceed estimates;
► leases are hard to obtain or are not available;
► and where there is no end in sight to environmental regulatory roadblocks, or political and economic instability.
Strategies for Exploration Success

- Pace exploration costs over time to avoid "discouragement", to learn more about area over time, and thereby be able to stay in play longer.

- Be disciplined. Do not cut and run after the first or second dry holes in a new play, or exit because oil and gas prices have declined. See the evaluation process through.

- Develop a competitive edge in a new play by utilizing a new technology.

- Exit play when you no longer have a rational for being there.
Strategies for Exploration Success

- A rule of thumb is that the exploration budget should be in the range of 0.5 to 1.0 times the development budget for an established company. If the exploration budget of a mature company exceeds this guideline, then the exploration effort is not being successful in setting up development situations.

- Always perform a detailed post-mortem on dry holes, inclusive of your pre-drill risk assessment.

- Leverage staff through use of expert consultants.

- Identify area and play experts; best prospect generators in play; employ or use them as consultants.
Strategies for Exploration Success

FOCUS ON NEW PLAY AREAS WHERE:

• existence of mature hydrocarbons is already demonstrated;
• there are multiple play possibilities;
• there is large reserve potential (>100 MMBO in aggregate);
• good seismic can be acquired;
• the market is readily accessible;
• where one or more staff members have direct knowledge of area.
Strategies for Exploration Success

► Keep current of competitor activity and new opportunities in play area; good scout data is essential!

► Pursue diverse plays with a range of risk and reward.

► Identify and develop majority of own new plays, but always look at outside submittals.

► Utilize a team approach to play area evaluation.

► Think positively!
Strategies for Exploration Success

Establish reputation as an aggressive and technically competent "player" ready to take good outside originated submittals. This will act as a magnet for good opportunities.

Look at outside prospects on regular basis to know what the competition is doing and thinking.
Strategies for Exploration Success

• Establish an "Exploration and Production Committee" to coordinate the exploration and development/production activity. Geologists, geophysicists, engineers and landmen should understand and appreciate each other's skills, responsibilities and limitations.

• Establish a regular procedure for peer review of play concepts and matured prospects; weekly technical staff meetings are one way to do this; include geologists, geophysicists, and reservoir engineers in the process.

• Keep on top of technological developments. Send staff to continuing education courses. Encourage them to be active in their professional societies.
Strategies for Exploration Success

RISK MANAGEMENT:

• Thoroughly assess risk by reducing or eliminating uncertainty in your evaluation of each play element. This does not mean one must eliminate risk, but merely better understand it.

• Use a portfolio approach to the exploration process – make statistics work for you!

• Actively manage the portfolio to continually high grade your prospect portfolio.

(Rose & Associates methodology)
Strategies for Exploration Success

Manage expectations of management, the board, and investors by preparing a three to five year risk-adjusted economic model of your prospect portfolio. Overlay this on the company balance sheet and income statement to show projected cash flow and earnings.

P90 - P50 - P10
Outcomes
Strategies for Exploration Success

**GOING INTERNATIONAL:**

Same Concepts apply, but.....
Do not attempt to “re-invent the wheel”

Build a staff of highly experienced international explorationists who have lived and worked internationally most of their careers. The initial team should consist of a geologist, a geophysicist, staff or consultant engineer, and a contracts person, each with more than 20 years experience.
Strategies for Exploration Success

INCENTIVIZE YOUR EMPLOYEES

- Peer recognition for job well done
- Cash bonuses
- A “piece of the action”
  - stock options
  - Overriding royalty interests

.... And they will sing the company song!
Models of Success

- Amoco in the 1980’s – Rockies Overthrust, Deep Tuscaloosa
- Anadarko Petroleum 1990’s – GOM Sub-Salt, Yegua, Algeria
- Zinn Petroleum – Haynesville Sand in Alabama
- Trend Exploration – Pinnacle Reef Play in Indonesia, Nevada
- Canadian Hunter- Elmworth Deep Basin Gas Play
How to “Crash and Burn”
The Road to Failure

- An inexperienced management team.
- Operating in areas where management and staff have little prior experience and expertise.
- Risk adverse....... "No dry holes" attitude.
- Apply old ideas in mature exploration provinces.
- Repeat "old mistakes" by failing to identify and evaluate all available and relevant data concerning a new play.
The Road to Failure

- Skimp on data acquisition costs.
- Get into a play late in the game.
- Exit play too soon, prior to complete evaluation of play concept and all available data.
- Inadequate risk spread among plays.
- Expect to generate prospects entirely in-house and operate everything.
The Road to Failure

- Prematurely reject new play concept on basis of early risked economic analysis.
- Entrenched bias against certain regions..... "Forget it. We've been there before".
- Poor market analysis.
The Road to Failure

- Discourage creativity through bureaucratic and/or cumbersome corporate policies.

- Pursue opportunities on a helter-skelter basis geographically with no basin or play limits.

- Reject a prospect because the lease burdens exceed an established guideline. (The Indonesian production sharing contracts have only a 15% NRI on "profit" oil).
The Road to Failure

- Limited exploration budget.

- Too much money to spend and not enough places to spend it judiciously. Avoid the tax advantaged “year-end” problem.

(Need adequate capital to execute the business plan on a fully risked basis)
SOME EXAMPLES OF STRATEGIES THAT FAILED

► American Quasar – Rockies Overthrust
► Transco Energy- Alabama CBM
► Chesapeake Energy – LA Austin Chalk
► Gas Utility Exploration – Equitable in the GOM
► Drilling Funds of the 1980’s - E.F. Hutton
► Weeks Petroleum- International “home runs”
► Texaco North Sea (1970’s) – a creative void
ARE THE CAPITAL MARKETS INTERESTED IN EXPLORATION?

(......Big “E”)}
YES.....

BUT, VERY SELECTIVE
WHAT THE CAPITAL PROVIDERS ARE SEEKING

USA Private Equity

Institutions are investing through fund managers

Yorktown – Centurion Exploration
Lime Rock & Greenhill – LMP Resources
Warburg Pincus - Kosmos Energy
WHAT THE CAPITAL PROVIDERS ARE SEEKING

CANADA

I believe the tide is turning...slowly; but, Canadian investors are famous for taking risks!

Active flow-through share market

(better to talk to the likes of KERN Partners and ARC Financial)
WHAT THE CAPITAL PROVIDERS ARE SEEKING

#1

A proven management team with a track record of creating shareholder value.
WHAT THE CAPITAL PROVIDERS ARE SEEKING

► A well conceived business plan that is credible in terms of capital requirements, timing, and projected cash flow.

► A management team that is at risk in terms of its own financial commitment to the venture – “parallelism of interests”.

► A staff of proven oil finders – preferably a team that has worked together successfully in their prior employments.
WHAT THE CAPITAL PROVIDERS ARE SEEKING

► Intellectual capital.

► Ownership

► A competitive advantage.
WHAT THE CAPITAL PROVIDERS ARE SEEKING

► A balanced portfolio of opportunities with a range of risks.

► A reasonable number of prospects that are leased and ready to drill - (capital will not be idle).

► A significant leasehold in play concept fairways.
WHAT THE CAPITAL PROVIDERS ARE SEEKING

► A demonstrated ability to source future leads and prospects – the “conveyor belt” for future drilling opportunities.

► A **fully risked** IRR north of 30-40%
WHAT THE CAPITAL PROVIDERS ARE SEEKING

Most investors require net assets inclusive of proven reserves, land and seismic that provide “security” to their risk capital.

Some current production and proven reserves significantly increases the universe of potential equity investors.
CONCLUSIONS

There are fundamental organizational and philosophical criteria for long-term success in exploration.

Getting it “right”
Creates significant shareholder value.
For those who do not explore wisely, there is an alternative......
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Skip is a past national Secretary (1993-1995) of the 31,000 member American Association of Petroleum Geologists, and was President of the AAPG Division of Professional Affairs in 2000-2001. He presently serves on the Executive Committee of the American Geological Institute, a federation of 43 geoscience professional societies representing over 120,000 members. Skip is also on the board of the Burgess Shale Geoscience Foundation, Field, B.C. Hobbs writes and lectures frequently on energy economics and energy policy, and the business side of oil and gas.

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