



Play Entry Strategies: Examples from the Western Canadian Foothills

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EXTENDED ABSTRACT

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Many authorities believe the most difficult and critical task in petroleum management is the selection of plays in which to explore, develop and produce. In the Western Canada Sedimentary Basin (WCSB), analysis of public information has made play evaluation and selection more transparent and affordable for a large number of operators. As many operators select the same "best" plays, the most difficult task becomes developing and implementing a competitive entry strategy into the selected play. Possible entry strategies range along a continuum from acquisition of producing properties at one extreme to pure greenfields exploration at the other. What entry strategies have successful new entrants pursued in recent history? Is there a "best" entry

strategy? Would investing in such an entry strategy create value at current costs and prices?

The Foothills Region of the WCSB has been the scene of significant industry activity and production growth since 1990. New entrants have been attracted to Foothills plays by the large undiscovered gas potential, large pool sizes, developing infrastructure and moderate risk. This paper describes a structured evaluation process for defining success criteria, selecting operators with significant activity and production in a play, analyzing how they entered their core areas and modelling their economic results. Profiles of operators that have been successful in a specific area of the WCSB Foothills region are also presented.

INTRODUCTION

The Foothills Region of the Western Canadian Sedimentary Basin (WCSB) has been the scene of significant industry activity and production growth since 1990. Due to the large undiscovered gas potential, large pool sizes, developing infrastructure and moderate risk, new operators are being attracted to enter Foothills plays.

Corporate strategies to enter plays can range along a continuum between two end members: the Buy strategy and the Build strategy (Figure 1).

The Buy strategy is characterized by the purchase of existing assets for ongoing production. This strategy entails low resource risk but little to no growth potential. The Build strategy is characterized by grass roots exploration activities with high resource risk and high growth potential. The timing and amount of acquisition capital versus the exploration and development capital invested are key differentiators between the Buy and Build entry strategies. The Buy strategy is commonly the domain of the income trusts while the Build strategy is the domain for the exploration firms. Operators skilled in exploitation and extension of trends combine aspects of both the Buy and Build strategies.

PLAY ENTRY EVALUATION PROCESS

This paper describes a structured method that was developed to analyze the entry strategies of selected operators into a selected geographic area. To supplement the description, selected case study results have been used to illustrate the steps of the process. The specific area selected for this case study is sizeable, yet is a subset of the larger Foothills region of the WCSB. Although the case study results are real, the identities of the plays and operators have been disguised for confidentiality purposes.

This structured method consists of four steps; each is described in the following sections.

1. Play Analysis
2. Operator Analysis
3. Entry Analysis
4. Value Analysis

PLAY ANALYSIS

For the purposes of this paper, a play is defined as a family of geologically related discovered and undiscovered pools within a geographic region. Prospects are the untested leads that may be undiscovered pools in the play. Discovered pools are producing properties with similar producing characteristics. Pools

often share gathering, processing and operating infrastructure.

The objective of Play Analysis was to prioritize plays for further review by comparing the producing characteristics and activity trends for each play. To begin the play analysis, all existing gas production was grouped by geological play. Although aggregate production within the selected area has been increasing at over 11% per year since 1990, Figure 2 demonstrates that there are both growing and declining production trends for established plays and rapid growth in some emerging plays.

For each play, data for ranking criteria were examined: play production growth, average rate added per well, EUR per well, play activity levels, exploratory well success rate, and remaining undiscovered potential. For example, Figure 3 illustrates the rapid growth of drilling activity targeted to a Foothills play. Although less than 25% of the wells were exploratory, the success rate for commercial wells in the target zone for these exploratory wells was 35%.

Once all data sources were reviewed and analyzed, the results were compiled into a summarized table and the plays were ranked for further analysis.

OPERATOR ANALYSIS

The primary objectives of Operator Analysis were to identify operators that entered Foothills plays since 1990 and to select for analysis new entrants that increased production through exploration and development.

Graphs of production data by operator and by play were used to identify initial production timing and growth for operator/play combinations. Figure 4 illustrates the production profiles for six current operators. These graphs have been annotated as to whether the operator was an entrant or a legacy operator and the operators' production growth post-entry.

Figure 5 illustrates 2002 raw gas production rates for the largest current operators in the selected Foothills area. For each operator and producing well, the production was classified by asset source based upon a comparison between the current operator name for each well and the initial operator name for that well.

The definitions of these asset sources are as follows:

Asset Source	Criteria
Internal Growth	The well remains operated by the operator that drilled it
Corporate Acquisition	The initial operator has been corporately acquired, and the well remains with the successor
Asset Acquisition	The well is now operated by an operator unrelated to the initial operator (evidence of a sale of an asset)

Production sourced from the Asset Acquisition provides the initial clue regarding the acquisition component of entry strategy for new entrants.

The criteria used to select operators for detailed entry analysis included: minimum levels of current production, observations of recent production growth, a variety of plays and a diversity of entry strategies.

ENTRY ANALYSIS

The objective of Entry Analysis was to infer how each new entrant established its current position.

The most direct source of information is the operator. Most operators withhold this information on strategies (both successes and failures), with the belief that what they have learned gives them a competitive advantage.

Processes were developed to reverse engineer the operator's entry strategy(ies) from well, production, pool, land agreement, facilities, and other information contained in public databases. These databases are not always complete, current and accurate. Due to these uncertainties, good judgment in the analysis is paramount.

To reverse engineer these strategies from the data requires answers to some key questions:

1. In what order were wells drilled into this play? By whom? The initial wells are the most important to the analysis.
2. In what order were wells put on production? By whom?
3. When were the producing lands acquired? By whom?
4. What asset transactions occurred? When? Between which parties? What assets were included in the transactions: land, non-producing wells, producing assets, other?

5. When were initial and subsequent pipeline and facility installations undertaken? By whom?
6. What technologies were employed? (e.g. horizontal wells, dual completions, other)

To illustrate the data integration required, one selected operator's entry strategy into one play is highlighted; see Figure 6. In mid-1995, this current operator commenced producing three wells that had been drilled during the 1970s and 1980s by a previous operator. The lands containing these wells and significant amounts of land surrounding these wells had been originally acquired by the initial operator from the Crown prior to 1990. After a short production period from those original three wells, the operator drilled, connected and produced a series of its own wells. These additional wells, located on those old lands, and on new lands acquired post-1990, contributed to a ten-fold production increase.

The strategy employed by this operator was to acquire and develop non-producing old lands. This is a strategy located near the midpoint of the continuum (Figure 1).

VALUE ANALYSIS

The final question to be addressed by the process was 'Would an operator create value today by entering and participating in the play as the original operator did?' Economic cases were created to model the historical production and investment profiles. Valuations were carried out assuming current day costs and netbacks and a 100% working interest participation level. Outputs for economic parameters were expressed on a before tax basis.

Profiles of the activities carried out by the selected operators were based on the interpreted entry strategies. These profiles included:

1. the nature and value of an initiating transaction
2. volumes and values of acquired lands
3. numbers of, types, and depths of both productive and non-productive wells
4. estimates of seismic, facilities and other related activities

The activity profiles, combined with present day cost estimates, were used as the capital cost inputs to the valuation model. Production inputs were derived from the actual play outputs, including adjustments for shrinkage losses and liquid yields. Commodity prices, operating and processing costs, royalties and other costs were also input into the economic evaluation.

The results from these economic analyses are specific to each operator/play combination. However, comparison of results for all operator/area combinations identified some general trends. For the entrants examined:

1. Entrants pursuing pure Build strategies had the widest range of valuations from returns in excess of 50% to value destruction. Better play selection and execution accounted for better results.
2. Entrants pursuing hybrid Buy and Build strategies showed a smaller variance in their range of more modest internal rates of return (between 15-25%).
3. Operators entering Foothills plays require significant management commitment and patience to achieve exploration success, production and economic payout. In addition, new entrants must understand the capital at risk and the significant capital required to achieve first production.
4. Evaluation of each individual operator yielded unique insights – the value is in the details!

CONCLUSIONS

Development and application of this structured play entry evaluation process has resulted in the following conclusions:

1. Proper evaluation of how operators entered their current operations provides prospective operators with valuable lessons.
2. There are many different routes to successfully enter these plays. Each strategy offers different levels of risks and rewards.
3. Application of the play entry evaluation process resulted in valuable interpretations of the strategies pursued by recent entrants. Entrants that develop a competitive play entry strategy based on the experiences of others are more likely to be successful.

Continuum of Entry Strategies

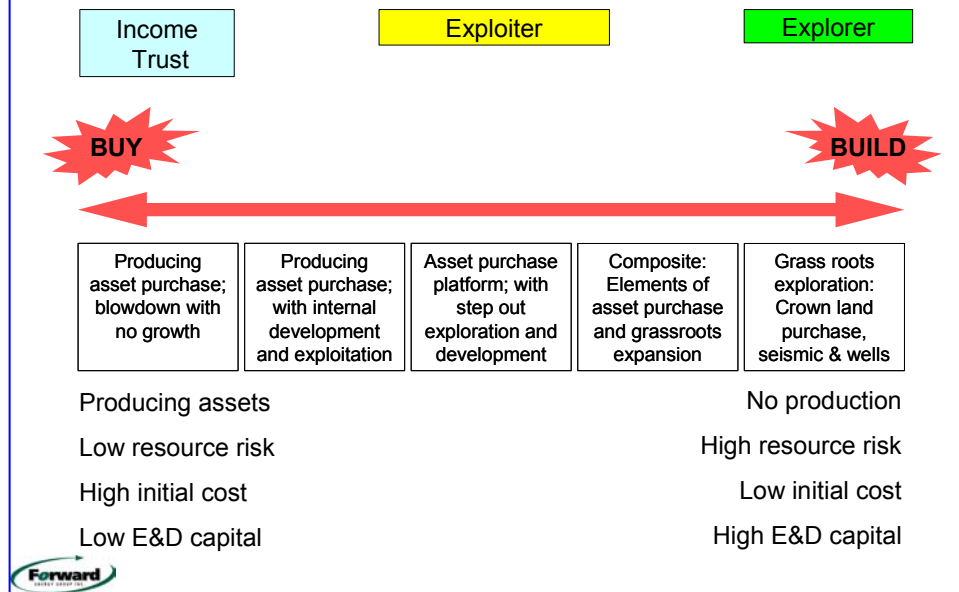


Figure 1

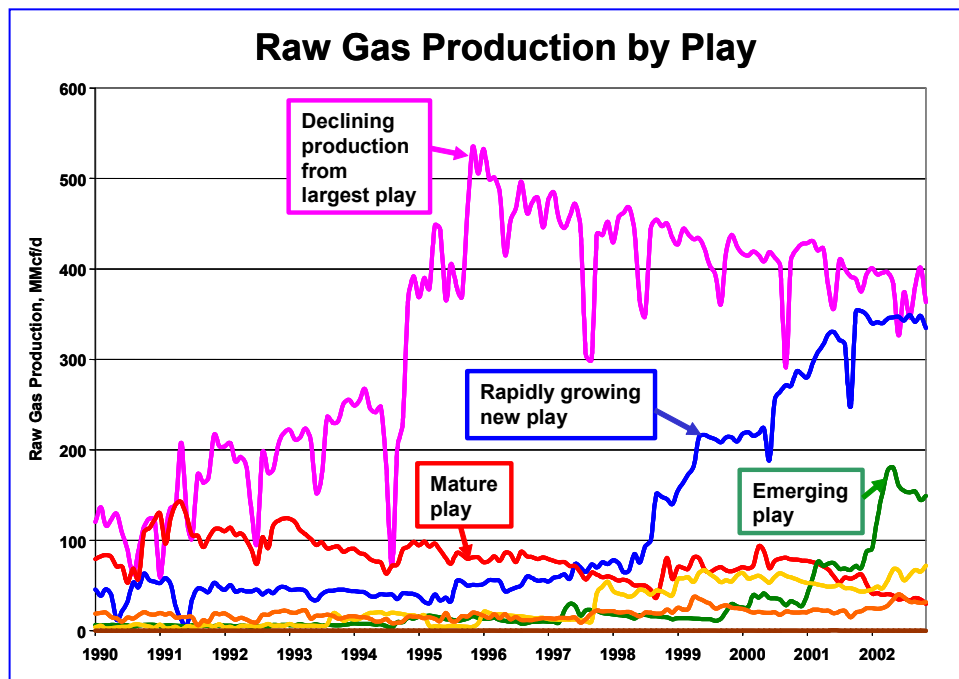


Figure 2

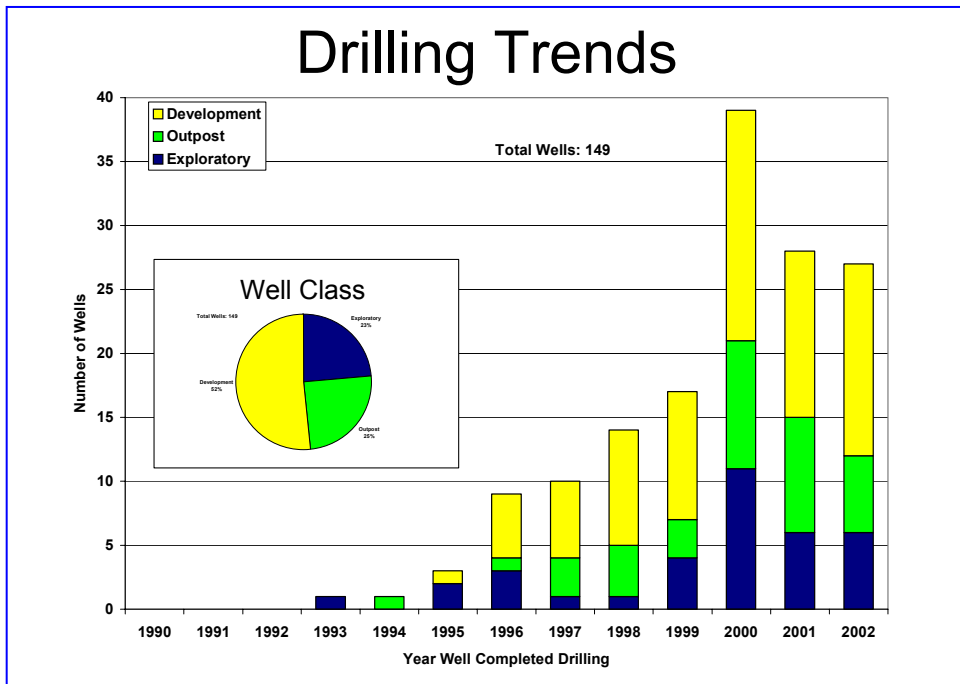


Figure 3

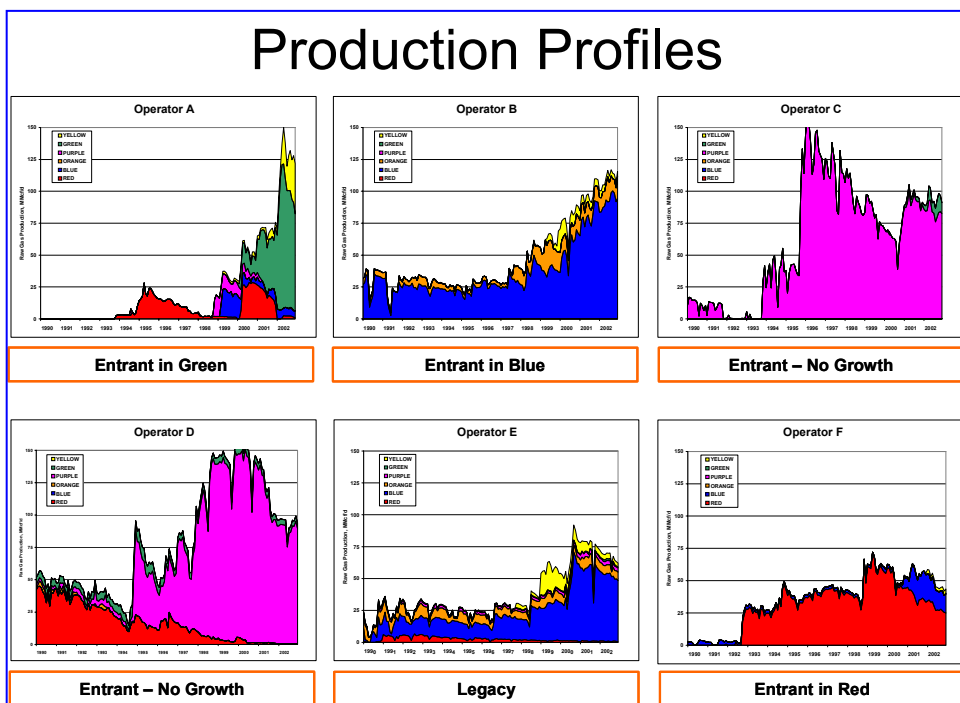


Figure 4

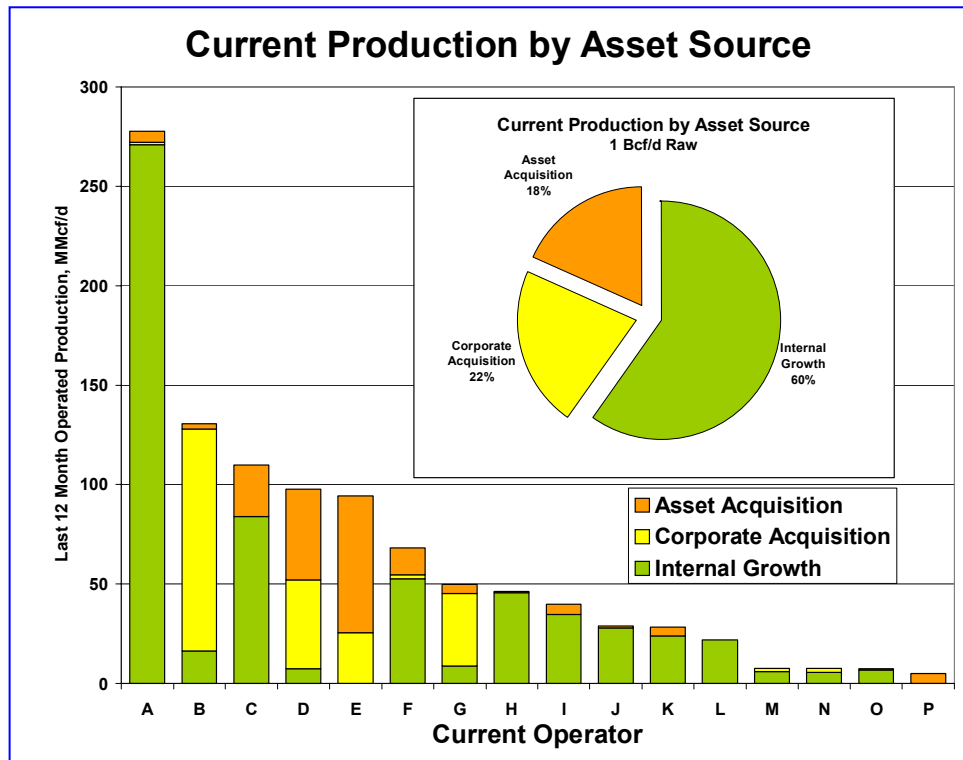


Figure 5

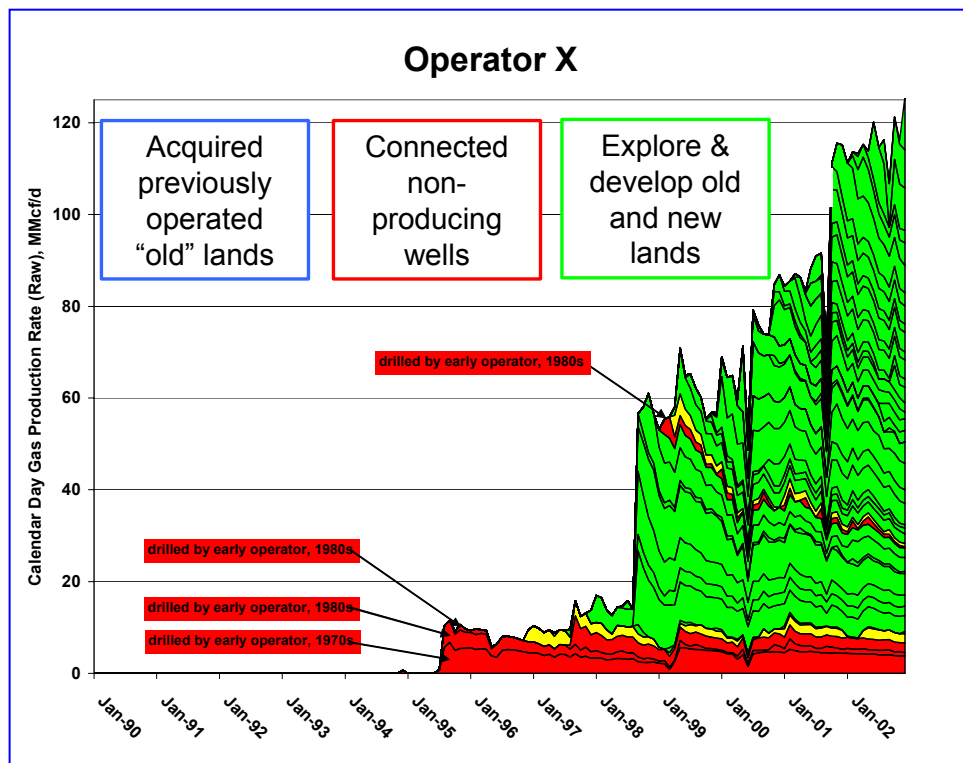


Figure 6

