Joint ventures – old risks and new challenges

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Abstract

There are many joint ventures (JVs), in the construction, automotive, manufacturing, resource and energy industries. Those in resources and energy involve capital intensive long life plants and infrastructure. Some have lasted for fifty years and represent approximately half of the aluminium and iron ore industries. However, the risk profile is changing. Many newer JV's are trying to establish large operations in less stable countries where they will dominate the economy. All have to weather many changes in product pricing, supply contracts and changes in competitive market positions. They will also have to address changes in infrastructure (power, rail and ports), in the resource base, the entry of state owned companies and governments as well as weather a trend of increased social sovereign risk and resource nationalization. Many of the parties to the JV's market their own products, while the remainder contract to others in the JV's, with prices set on international terminal markets. The aluminium industry and iron mines have relatively simple products and market arrangements, making it easier to learn as to the operation of the JV.

Keywords: Joint Ventures; risk framework; aluminium; iron ore.

1. Forms and rationale for joint ventures

1.1 Why establish a joint venture

A Joint Venture (JV) is usually established when the parties have a common objective, but each party does not have the resources or ability or appetite to develop, finance and manage the business and associated business risks by itself.

In the current environment of commodity price volatility, increased capital costs for projects restrictions on capital raising and debt finance, enhanced sovereign risk especially in respect of large scale projects and the drive amongst developers to reduce costs generally; de-risking projects through JV structures is necessary for developers to consider.

The JV is usually structured to carry out a business in a way that leverages the inputs and minimises the risks to the parties, or at least allocate the risks accordingly to that party best able to manage them.

The allocation of capital thus allows each organization to focus on that which it does best and address those risks that it is best equipped to manage. It also seeks to build on the competitive advantage of the parties. It is generally accepted that JV's, on average, create value for parent firms and that value creation is increased mainly due to synergies and common beliefs of individual participants, but decreased by the inherent tension between co-operative and non-cooperative behaviour in JVs [1].

The JV can be incorporated and governed by country company law or unincorporated and governed by specific agreements. As a collaborative commercial undertaking between parties, JVs resemble partnerships in many respects, but the law of partnership does not necessarily hold all the answers to the host of difficulties that may arise where the express terms of a JV agreement are in adequate. An outline of a legal framework is provided in [2].

Some [13], separate out two forms of joint arrangements, namely

(a) A joint venture arrangement in which the parties that share joint control have right to the net assets of the arrangements, and

(b) Joint arrangements in which the parties that share joint control have rights to the assets, and obligations for the liabilities, relating to the arrangement. This includes situations where the parties benefit from the joint activity through a share of the output, rather than by receiving a share of the trading.

The differences give rise to different ways of treating the assets and liabilities in the consolidated balance sheet. The generic term JV is used in this paper.

There is an increasing body of literature that covers long term and strategic management issues associated with general JVs [3, 5, 6, 7, 8, 9, 12]. Using a risk management approach, this paper provides a framework based on observations of a number of similar JVs within the aluminium and iron ore industries.

1.2 Types of JV's

1.2.1 Aluminium and iron ore examples

Some business types of JV are outlined in Table 1.

Table 1.Type of longer term Bbusiness JVs within alumina and aluminium industries and iron ore.

Identi fier	Type of JV	Examples in bauxite and alumina	Examples in aluminium	Examples in iron ore
A	Companies where **a major industry** producer organises a development and provides the resource and **other industry** producers or consumers take a shareholding so as to get an economy of scale and access to output. This includes mine developments where the other companies buy into the resource, as well as operating where they buy the raw material and the plant tolls that into output.	Queensland Alumina Ltd, Eurallumina Spa.,	Boyne Smelters Ltd, New Zealand Aluminium Smelter Ltd.	Samarco Channar Hope Downs
B	Companies where a **major industry producer** provides technology, management and marketing services and sometimes raw material supply and takes a **minor shareholding** while the major shareholder(s) are new to the industry and want to facilitate a major development in country, supply energy and be involved in marketing.	Ma'aden Alumina	Sohar Aluminium Ltd and Ma'aden Aluminium	Robe River Iron Ore Associates.
C	Companies where a **major industry producer** provides technology, management and takes a **major shareholding**, while the other shareholder(s) are new to the industry, but can provide resources and capital.	Alcoa World Alumina,	Tomago and Qatalum.	

Identi fier	Type of JV	Examples in bauxite and alumina	Examples in aluminium	Examples in iron ore
D1	Companies where **several industry producers** take a shareholding and output in a new promising development in a new country, while minimising their individual exposures. There may also be some government, international finance company or indigenous group participants in an attempt to minimise social and sovereign risk.	Halco and Fria.	Alumar	Simandou (proposed)
D2	Companies where an **exploration company** organises a development and provides the resource and other industry consumers or traders take a shareholding to gain access to the output. There may also be some government, internal finance company or indigenous group participate in an attempt to minimise social and sovereign risk.			Various proposals in Australia and Africa.
E	Companies where a **major industry producer** and a **trading company** or companies combine. The trading company provides equity and takes an agreed output. The trading company may also arrange construction services and finance.		Albras, Portland	BHP Billiton JV's in WA

1.3 JV characteristics

1.3.1 Aluminium industry JV characteristics

While the location of the bauxite is determined by the country, the alumina plant is often determined by logistics and infrastructure and for aluminium by source of low cost power. A detailed history is outlined in [3].

Bauxite mine JVs were established initially in Australia, then spread to Africa and South America. Alumina plant JVs were established initially in Australia, then spread to South America. Alumina smelter JVs were established in Australia then spread to USA, Canada, South America and Europe.

In terms of global production, apart from China, my analysis of JVs account for 68 % of production of bauxite, 46 % of production of alumina, and 40 % of production for aluminium. They account for 63 % of the number of bauxite mines, 47 % of the number of alumina plants and 47 % of the number of aluminium smelters.

The types of JV's have been analysed and are shown in Figure 1.

Approximately 60 % of the aluminium industry JVs is involving two or more industry producers. This has often led to conflict of opinion and conflict of interest between competing producers with other interests in the industry.

Apart from a few exceptions that there has generally been only modest increase in capacity (called 'creep') after the initial 20 years and few JV plants have been expanded significantly after the first ten years.

As cost reduction is more readily achieved through growth, this generally has been reflected in a rise up the cost curve and a gradual technological ageing of the asset.

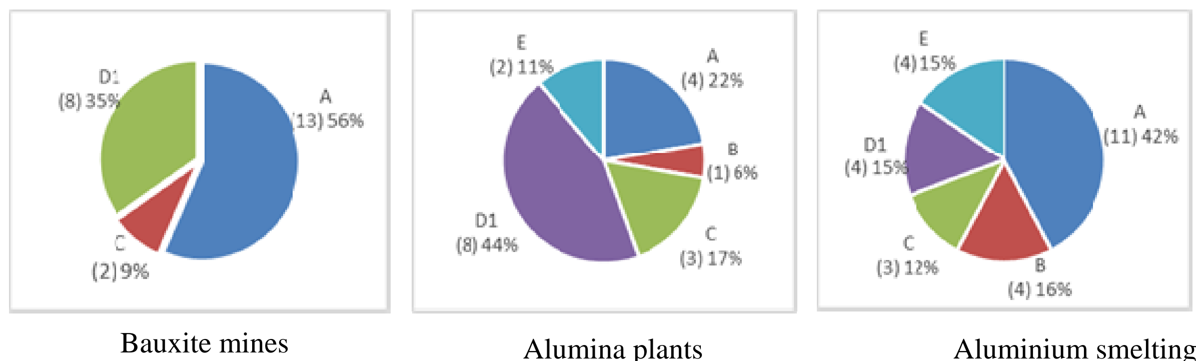

Figure 1.Types of aluminium industry JVs by production globally (except for China).

A	Major producer and other producers or consumers,
B	Major producer provides technology and takes minor interest,
C	Major industry producer provides technology and takes major interest with other non-industry players,
D1	Several producers with other stakeholders so as to minimise sovereign risk,
D2	Exploration company organizes the development with other consumers, traders and others,
E	Major producer with traders,
Note:	1. ( ) number of JVs by production,
	2. Bauxite mines > 2 mtpy, alumina plants > 0.5 mtpy, smelting > 0.2 mtpy.

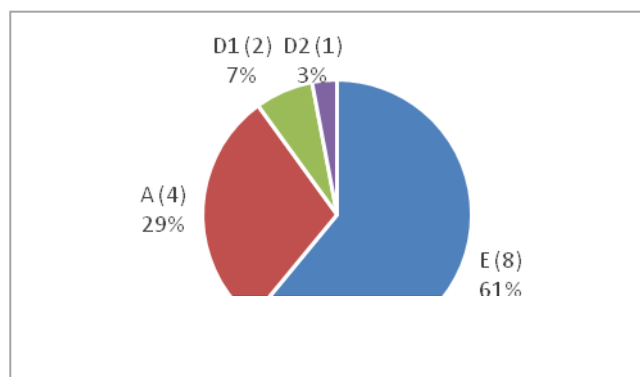

Figure 2. Globally traded iron ore JV's.

Note: 1. ( ) number of JVs by production
2. Iron ore mines >10 mtpy.

The extent of each type of JV varies by sector. In bauxite the types and timing are split between Type C in the 1960's and 1980's and Type D in the 1970's. In alumina, the types and timing are split mainly between Type A in the 1960's and 1980's, Type C in the 1960's. In aluminium, the types and timing are split mainly between Type A in the 1970's and 1980's, Type B in the 2010's, Type D1 in the 1980's to 2000's, and Type E in the 1970's and 1980's.

With the very high capital cost of Western plants (approx. US$7,500 to US$10,000/annual tonne, compared with plants in China at US$2,000-2,500/at), Chinese output has grown dramatically and only selected plants will be built in the future based on unique power supply arrangements, eg. in the Middle East. The trend is now to leverage on a Type B, where a major

producer provides technology and take a minor shareholding. However, in the longer term, plants in the Middle East will be 100 % owned as they continue to develop their own technology successfully [4, 14].

1.3.2 Iron ore JV characteristics

With increasing sales of seaborne traded iron ore to Japan, Korea and China, this market now dominates total iron ore production.

Historically, most seaborne trade has come from Australia, Brazil, India, Canada and South Africa. Initially JVs were established in Canada and Australia in the 1960's. JVs account for 42 % of production and 51 % by number of mines. Most are now in Australia.

The types of JVs are shown in Figure 2.

As production has increased, or new mines developed to replace depleted resources, sharing of existing infrastructure (rail, ports and power suppliers) has often become an issue.

This has required changed arrangements for:

- Handling of products from different JVs on a common rail system, that might be a common user or a single system,
- Sharing of port arrangements with others,
- Development and rationalisations to blend from different mines and JVs into a common grade(s) so as to optimise capital and operating costs,
- Power supply by others.

Approximately 60 % of the existing JV's are of Type E, involving a single producer and a group of compatible Japanese traders taking a small interest as foundation participations in a long life mine in a favourable mineral province.

The lead trader philosophy is to take only a minority share and to actively contribute to the JV effectively and harmoniously with synergistic opportunities. This style then provides a positive atmosphere to the JV and a minimal conflict, apart from when production needs to meet a global oversupply situation.

Consequently most JVs have grown substantially in size as the market has expanded. The major industry player has then used the JVs as their expansion vehicle, rather than carrying out their own developments.

However, more recent JVs have tended to also include Korean and Chinese traders and producers making up a larger share of the JV, adding complexity.

Meanwhile, with the rapid increase in Chinese demand and prices, many proposed developments in Africa and Australia have been in Type D2, where an exploration company organises the development with second tier Chinese producers, traders or construction firms. The main market is China, and proposals now involve Chinese groups, as potential customers, traders and equipment suppliers/construction contracts. China is also interested in advancing their commercial and political ties with particular countries, so JVs have been proposed that separate out mine and infrastructure and weaken the commercial bond for the success of the JV.

2.0 Risk framework

2.1 There are many similarities between a business JV and a political coalition

When David Cameron, the incoming Prime Minister of UK, formed a coalition in May 2010, he asked Angela Merkel, the Chancellor of Germany for advice. Her advice was based on considerable experiences within Europe, and was that "the secret of success was an agreed agenda, known to all key players".

This is an excellent over riding principle but alone is not sufficient to base a JV over the life of capital intensive assets which must survive many changes of political coalitions and business circumstances, particularly with the changing nature of international prices.

One of the main challenges and decision making of JVs is that two or more boards are involved, often with different company cultures. These boards have to agree on fundamental matters such as capital calls, development plans, major budgets and capital spend. It is important for JV parties to agree up front on a clear and coherent strategy for the business and to prioritise in the JV Agreement an effective project governance process, a workable co-operation framework identifying the matters on which each party will have final say, and to embed a binding and uncomplicated dispute resolution process for any matters where party decision making is jointly weighed.

2.2 Strategy: some observations from the aluminium industry

- It is vital to establish the clarity of purpose and short term strategy at the outset, as are the basic characteristics of medium and long term strategy. This simplifies the task of the CEO and mitigates risks associated with differences in strategy, culture and expectations of the JVs constituent parties. It is also vital to measure and spend sufficient effort on strategy [10].

- Annual reporting by CEO against short/medium/long term strategy will discipline JV management and identify practical adjustments that need to be made in ensuring a realistic/workable strategy in future.

- The difficulty of gaining consensus on the strategic direction increases in proportion to a power of the number of parties, as well as the different languages, the cultures and the different interest groups involved. As initial establishment risks are reduced and the objective of the JV becomes production and cost minimization, it may be appropriate to minimize the number of cultures and complexities through a reduction in the number of parties so as to obtain a greater clarity of purpose.

- The interests of the parties change over time and unless a win-win outlook of each of the parties (and the JV) is maintained, tensions and conflicts can dominate strategic decision making. This is particularly important when one or more of the parties also operates within the same business sector.

- As with all successful Boards, the JV Board Members must be able to contribute in their own way at a level greater than the Chief Executive Officer (CEO), so as to be able to add value. They need to be able to gain and maintain the respect of the CEO, without compromising the right to guide, hire and fire the CEO. Their capacity to act in the best interests of the JV, rather than the parent company who nominates them, is also an issue that relates to dot points above.

- As a JV develops beyond the first generation of principals who established and guided the formation, the new representatives of the parties come from subordinates of the originators, or new staff within their respective organisations. Often there is a diminishment of the strategic intent and guiding vision and more focus is on governance and setting end point measure for the CEO.

- It is often useful for the JV parties to meet periodically by themselves, without the involvement of the CEO and management, usually with an independent facilitator, to align and agree overall strategic objectives. This is particularly useful when CEO's change. Input from independent consultants can often be of value in breaking down tension and existing group think, as well as broadening the JV.

- In the formation of a business JV involving raw material supply by one party, eg Type A, it is necessary to establish pricing and quality mechanisms. If in time these become distorted from the market, the difference can result in considerable friction within the JV often resulting in suboptimal performance and a deterioration of the asset condition and potential. It is important to lay out the intent of the JV at the onset, or if needed endeavour to agree an updated intent at a later point in time. With this intent major review mechanisms, with independent input and or arbitration can be undertaken to recalibrate pricing of inputs.

2.3 Governance

- It has been observed that there is little practical difference reaching agreement when one party has 10 %, 49 % or 51 % or 90 % interest in a JV as in general most JVs operate by consensus management.

- A structure for meetings is necessary but not sufficient. Within the JV it is easy for misunderstandings to occur as a result of companies with different cultures and values, sometimes different language, different authority regimes, different financial capacity, saving face etc.

  It is good practice to:
  (a) Endeavour to have all decision makers together at the key meetings.
  (b) Record the minutes at all meetings, during the meeting and for all to sign prior to calling the meetings closed.

- The attitude borne of the consensus approach and/or competitive tensions often leads to inappropriately restrictive authority levels for the CEO, especially with respect to capital expenditure. This inhibits the entrepreneurial drive and professional challenge and satisfaction of operating personnel.

- Often the JV is only as strong as the weakest party, particularly if capital expenditure is involved. This can lead to slower growth and less optimal performance with a starving of capital input to keep the business modern.

- Staff development within the JV can be a limiting constraint. A healthy JV often has strong two way interactions and staff development arrangements with one or more of the JV parties, based on a clear Technical and Management Services Agreement.

- All significant agreements within the JV need to be made with all stakeholders, at the one time, otherwise misunderstandings arise.

In recent years there have been some modest attempts to balance local cultural, social and indigenous interests by insisting on participation in JVs for particular purposes, eg. construction.

2.4 Design to minimise risks

Ernst & Young [11], identified the top 10 Mining Business risks for 2014 - 2015. Some were generic such as price and currency fluctuations, balancing talent requirements and productivity but the other seven are impacted by the JV formation design. They include social licence to operate - engaging powerful communities, sharing the benefits, resource nationalism - both retreating and advancing, capital projects - a conservative approach, capital dilemmas, infrastructure access and access to water and energy.

In remote locations, as with bauxite and iron ore deposits, a substantial development can have a major impact. Many proposed mine developments are often far from the coast and require extensive rail systems in hilly terrain, and the ports are located in shallow water needing major approaches and dredging. This adds complexity and a high capital cost. This high cost drives the need to increase throughput so as to minimise unit costs. However the size of the development in comparison to the size of the host country economy introduces considerable social risk and increased expectations. Maintaining control requires starting small and building up slowly.

Also, in developing the JV, there is often pressure to include many interest groups in a Type D1 with several industry players and other government, international finance company, and indigenous group participants in an attempt to minimise social and sovereign risk. This increases the number of participants, adding to the complexity of management.

There are high risks in JVs which involve many complexities involved in new partners, new country, new deposit, new infrastructure, new language and culture and new market entry.

2.5 Operating in rising and falling markets

Most JVs are established in a rising market. Increasingly the time to develop the mine is increasing and often occurs as the market is falling.

There are risks and challenges in industries where half of the production is controlled by JVs, as there is reduced ability to reduce production to meet and limit excess global capacity and a declining market. This needs to be done on a global basis, and is in conflict with optimising the profit for each JV.

2.6 Exit strategies

A number of JVs have survived in the aluminium and iron ore industry for fifty years. This is remarkable in itself but may not be optima.

There are a variety of reasons why a party exits a JV. These include a change of strategy, a change of economic circumstance, for example, in liquidation, or a change of control and or consolidation, or consolidation into a larger, broader entity.

In many longer term JVs there is not a sufficiently robust valuation and or exit mechanism, so parties tend to hang on longer than is sensible.

It is important that a clear purpose, strategy and exit strategy is formulated up front for both the JV and individual parties of the JV when drafting and on commencement of the JV agreement.

The author has contended [12] that when governance takes over from strategy, that it is time to exit the JV.

In a falling market and excess capacity, it now becomes apparent that simplification and strengthening of some JVs is required to address debt and market access arrangements.

This might include selling infrastructure to specialist third parties, consolidation of different plants and region, with a more streamlined management system etc. In addition, market access may need to be addressed by a rearrangement where traders and consumers take a bigger share in return for stronger off take agreements.

It is also appropriate to consider the closing down of smaller, inefficient or costly plants. For example, many Western aluminium smelters would have been closed a number of years ago if they had been located in China.

3.0 Conclusion

JVs make up approximately 50 % of production from aluminium and iron ore production. There are significant common features and lessons to be learned on strategy, governance and balance of interests. In time, new JV's are becoming more complex and have a larger production and may not be optimal in addressing risk. They also have inherent features that make it difficult for the JV to operate within the global industry in a falling market.

Few JV's have timely exit strategies or changes in interests that take into account changes in market circumstances.

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