DEVELOPMENT OF ROAD TRANSPORT SYSTEMS USING INTERNATIONAL CONTRACTOR JOINT VENTURES

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Abstract:

International Contractor Joint Ventures and their Selection, The Contract Documents, and Risk Allocation

The development strategy for a road transport system in Bosnia and Herzegovina must take into account the use of joint ventures between local and international contractors as well as possible relationships between Public Private Partnerships and Private Finance Initiatives. The "team" approach to the development of any effective road system i.e. one that can be built within time and budget constraints, is based upon a proper selection process for international and/or local contractors, the correct forms of contract that are used in the actual construction and a proper risk analysis. With the proper risk allocations, selection procedures, and contracts in place as well as a knowledgeable supervisory group in charge, a consortium of international and local contractors can effectively build (and maintain) a new road transport system in Bosnia and Herzegovina, within budget, on time and without dispute and/or delay.

International Contractor Joint Ventures and their Selection, The Contract Documents, and Risk Allocation

The use of International Joint Ventures in the construction of road projects, tunnels, and bridges continues to increase. In such cases, governments and foreign companies must consider the options available before agreeing a joint venture structure. Joint ventures can benefit both local and foreign investors when a local partner has certain strengths—such as central or local government support, land, licenses, distribution, and access to suppliers—that reduce start up costs and improve the foreign investor's chances of success and the foreign partner has the construction expertise and financial ability to successfully complete the project.

JOINT VENTURES IN ROAD CONSTRUCTION

A joint venture is an association of two or more individuals or business entities who combine and pool their respective expertise, financial resources, skills, experience, and knowledge in the furtherance of a particular project or undertaking. Joint Ventures are generally created for a single activity or project, and may have a limited time span.

Joint Venture agreements are usually either an Equity Joint Venture (EJV) or a Contractual Joint Venture (CJV) both are commonly referred to as a "JV". These joint ventures are typically formed either by individuals, business entities, corporations or partnerships. The contributions to the joint ventures are in the form of money [capital], services, or physical asset(s) or a combination of both.

Joint Ventures Generally

Most joint ventures arise via an express written agreement, but could arise by the nature of the parties conduct [a non-contractual JV]. As the rights and duties of joint venturers are typically governed by the same principles that govern 'partnerships' *i.e.* each joint venturer has the power and ability to bind the other joint venturer personally to unlimited liability to third parties, unless of course, the JV has been incorporated as a separate business entity. It is highly recommended, therefore, that the JV be expressed by a written agreement and incorporated as a formal corporation.

Types Of Joint Ventures

Joint Venture agreements generally take one of three forms:

- Contractual Joint Venture
- Corporate Joint Venture
- Partnership Joint Venture

In a 'Contractual' joint venture, the terms, obligations, and liabilities of the parties are set forth in a written instrument signed by both parties. In a 'Corporate' joint venture, the obligations, terms and liabilities are also set forth in a written agreement, however, this agreement is a much more extensive document in that it contemplates that the JV will be incorporated and become a separate legal entity. In the 'Partnership' joint venture, the partners either form a general or limited partnership and the rights and obligations of the venturers are set forth in a partnership agreement. The Partnership form of JV is primarily used for road and transportation system development. In a non-contractual joint venture, there is no written agreement, but the JV does business under a selected name and the conduct of the parties and the law establishes the liability and obligations of the venturers to third parties doing business with the JV.

In many parts of the world joint ventures are equity joint ventures (EJVs), though some investors establish contractual joint ventures (CJVs). CJVs and EJVs are similar in many respects. In most countries the government approval process, approval authorities, format of agreements, tax breaks, legal standing, and the means, laws, and authorities for dispute resolution are identical. The general management structure and governance procedures are also virtually the same.

But contractual joint ventures and equity joint ventures differ in two important ways. First, unlike an EJV, a CJV generally does not need to be a separate legal person under most legal systems. (A CJV that is not a separate legal person may benefit from lower costs, but also may expose the parties to greater liability than if they were legal persons, because CJVs with legal person status confer limited liability on parties to the joint venture.) Second, the CJV parties' profit, control, and risks are divided according to negotiated contract terms. In contrast, an EJV's profit, control, and risk are divided in proportion to the equity shares invested by the parties.

Contractual Joint Venture disadvantages

As is true for any investment structure, CJVs have their drawbacks. First, since all CJV contract details need to be negotiated, establishing a CJV can be time consuming and expensive. Indeed, CJV negotiations can derail potential ventures as parties discover that they cannot reach agreement on every detail. Second, CJVs are sometimes not the most appropriate business structure for the project. For example, a Italian Road Construction Company recently signed a memorandum of understanding for a CJV with a Romanian state-owned enterprise (SOE) for the construction of a toll bridge outside of Bucharest. The venture did not proceed, however, because the state-owned enterprise ultimately determined that it preferred an economic joint venture so that profit sharing ratios would match shareholdings and future changes in registered capital.

Why choose a CJV?

A CJV parties' profit, control, and risks are divided according to negotiated contract terms.

CJVs nevertheless can offer investors several advantages. Compared to EJVs, cooperative joint ventures

- **Allow access to restricted sectors**
  In a CJV, local partners can hold and "lend" assets and licenses that may be forbidden to foreign investors under local law, or that are undesired by the foreign partner, until the venture terminates or foreign ownership rules are relaxed. Undesirable assets may include those with a high transfer tax, or those that are too complicated or costly for the foreign investor to obtain, such as land.

  A CJV could also allow negotiated levels of management and financial control, as well as methods of recourse associated with equipment leases and service contracts; in an EJV, foreign investors may not always obtain such control since EJVs typically rely on equity levels to assign board seats and key staff and to determine other rights.

- **Alleviate capital contribution problems**

  The CJV's foreign partner can contribute or lease to the joint venture expensive technology and equipment, such as tunnelling and construction equipment. The CJV can then repay the foreign partner at an "advanced rate" from revenues before profit sharing. This strategy can be used in countries in which the law caps foreign ownership and when the local partner cannot afford to fund assets up front. Under an EJV ownership structure, such an arrangement is impractical or impossible unless the local side can contribute the amount of cash or assets needed to fund its equity up to any minimum local ownership level which may be required.

- **Allow more foreign management control**
  Foreign partners can often obtain the desired level of control by negotiating management, voting, and staffing rights into a CJV's articles of association. Because these rights do not have to be allocated according to equity stakes, the CJV again provides more flexibility than an EJV.
- **Reduce the risk of non-compliance**
  The CJV structure also tends to force partners to address rights and responsibilities in advance. It is good practise if the local government is required to approve all CJV investments. Government approval of detailed CJV contracts has the added benefit of sanctioning the detailed agreements and deterring local partner non-compliance. Thus, CJV contracts commonly provide better recourse than EJV contracts if one partner fails to comply with agreements.
- **Are easier to terminate or modify**
  Ending a CJV may be easier than ending an EJV—particularly if the partners held assets separately and clarified contingency dissolution terms in advance. In some sectors, when risk of failure in the development phase of a project is high, CJV contracts can be modified without terminating a partnership and forgoing investments and goodwill.
- **Resolve expense controversies**
  If the CJV's foreign party finds it necessary to incur expenses that the local party disapproves of, the expenses may be structured under a contract with the foreign party.
- **Offer extra tax benefits and advantages**
  Though CJVs and EJVs generally have the same tax advantages, CJVs offer some extra tax benefits. For instance, CJVs can sometimes appropriately avoid the asset transfer tax.

Cooperative Joint Venture Case Studies

While the CJV is often more time-consuming and complex to negotiate in the beginning, it is this complexity that is its main benefit.

The following cooperative joint venture (CJV) cases illustrate potentially useful strategies:

A Turkish Toll Road CJV

Typically, toll road projects in Turkey involve construction and operation of roads that have been classified and approved for toll collection. The government sees toll roads as a way to encourage foreign investment in the development of transportation infrastructure.

CJVs are almost always used for such investments because other investment structures cannot effectively address the financial risk to investors that contribute a large amount of cash. A CJV enables such investors to recoup their investment more quickly than other structures, since the parties can negotiate how and when profits are ultimately divided. Because toll roads are "build-operate- transfer" projects (the assets—the roads—will return to the government at the end of a project's life), foreign investors are concerned about how much time it will take to recoup the investment and focus on more than just the total investment return by the end of the project. Since the value of cash flows declines over time, most foreign investors measure investment returns by internal rate of return. Foreign investors typically negotiate to get more than a proportionate share of the cash relative to share capital in the early years. For example, a foreign investor could negotiate to receive up to 100 percent of the available cash for an initial period (perhaps the first 5 to 15 years). In the next 5 to 10 years, available cash could be split to match the parties' shareholding. In a final period, perhaps the last 5 to 10 years, the foreign party could receive a share in the available cash less than proportionate to its shareholding. All agreements and definition of rights are usually carefully spelled out in the detailed CJV contract.

In many toll road CJVs, the foreign party owns the majority of share capital. Most toll road CJVs have two categories of investors: financial and local government affiliate. Financial investors may be foreign or local; for the sake of simplicity they are called "foreign investors" here. This side contributes most of the needed cash. The second category of partners, which usually includes a subsidiary of the local traffic bureau, contributes licenses, construction, and the workforce. This side, for simplicity's sake called "local investors" here, puts in assets but may also contribute cash.

A Romanian Toll Road

In one example of a toll road CJV, a project included an expressway and a Class 2 road (a parallel or connecting road giving access to the expressway). Most of the cash was used to build the expressway, and a lesser portion was used to repair and upgrade the Class 2 road. The foreign party maintained management control by assigning 60 percent of board seats—matching its share capital. The foreign party appointed the general manager and the financial controller so that it would be on top of daily operations and in charge of the material fund flows. The CJV set up checks and balances to communicate among foreign parties, local parties, and authorities. The CJV, a legal person with limited liability, had a four-year construction period and has a 30-year life. The parties divide profits based on the schedule described above. All of this was written into the CJV contract.

Exit Strategies

In toll road projects, the CJV structure should not inhibit exit strategies. Some investors view toll road projects as being similar to a utility with a limited life. Others have a strategy to expand their projects by adding more roads and by focusing on projects within a region or on key city-to-city projects. Thus, a successful exit strategy in this sector has been to pool toll roads and package them into a holding company for listing on a public stock exchange.

THE TEAM APPROACH

The “team” approach to the development of an effective road system is based upon the format that is used in both the selection process of international and/or local contractors, and the forms of contract that are used in the actual construction process (including local sub-contractors). In practise this means that before any construction project is finalised, the government should have in place a Development Team to facilitate all parts of a road transport system and be in a position to help allievate any potential problems that may arise.

A Development Team Approach (DTA) is the concept of bringing together all local authority regulatory agencies, which affect the road development process, to provide a developer/ JV/ designer with a coordinated approach to the development from concept to completion.

The Development Team Approach is primarily aimed at those major roadwork development projects, which involve consultation with a wide varying number of agencies. A DTA provides a single group contact point to co-ordinate submissions through to final approval. Developers and construction professionals receive the benefits of a single point of contact within the government to co-ordinate services to be provided; a reduction in conflicting advice and decisions given by the varying regulatory services; and savings on time and money by receiving pre-construction advice at an early stage of the process.

In the United Kingdom, for example, to accomplish this at the initial stages of roadwork development, a team is set up to advise the JV and help speed the process from inception through to final approval. Most development teams will involve a core of officers from Planning, Building Control and Highways but any other specialists can be brought in as required, *e.g.* Engineering, Environmental Health, Licensing and the Fire Service. Building Control will also carry out pre-application consultations with the Fire Safety Officer on any matters that may prove problematic later on.

ESTABLISHING THE METHOD OF CONTRACTOR SELECTION

The development of an effective, operational and cost effective road system involves not only the design of the road system and its engineering but also the proper selection of contractors. Ideally a consortium of engineers and government officials should be put in place to determine the various segments of any particular project, the 'critical path' for the construction of the segments, the necessary skills that can be obtained locally, financing/funding availability and the need for foreign resources. Based upon this initial study, a determination can be made as to what 'type' of entity should be invited to tender for any segment of the project.

Invitation vs Advertisement

There are two schools of thought on contractor selection for major roadwork projects including tunnels, bridges and related infrastructure. The most prevailing method is "Invitation" where pre-chosen and pre-qualified contractors are invited to bid on the project in question. Under this method the selection committee or selection group pre-establishes which international contractor has the appropriate resources and abilities to complete the road project. After inviting those that qualify, the selection committee can then review the invited contractor's presentations, interview their representatives and then make an appropriate selection before entering into a negotiated agreement for the work.

Under the "Advertisement" method, the road project is advertised in various international journals as either a "request for proposal" or notification that the project exists and the timetable for applying to the selection committee and expressing an interest in contracting for the project. The difficulty with this methods is that the number of possible contractor companies replying to an advertisement can be rather large and the slection committee is then faced with a large number of potential contractors who may or may not be suitably qualified.

The Successful Contractor – Lowest Bid vs Ability to Complete

From the owners perspective a successful contrator is the one who can complete the road project both within the scheduled time period and within the owner's budget. Also the successful contractor is one that can provide the appropriate completion bonds and guarantees and who has sufficient capital of its own in the event of any dispute. Futher experience in the type of road project is essential as well as the team that will be put in place to "run" the project. If a particular contractor can satisfy the selection committee that it possesses the qualities needed for a successful project then it should be selected rather than the contractor who is the lowest bidder for the project. Also on occassion no one single contractor has all of the qualifications necessary and in these circumstances the selection committee should consider suggesting a joint venture between several smaller contractors who, together, can accomplish the goals of the project. The use of this type of joint venture is also suggested where, for local reasons, it is wise to have smaller local contracotrs joint venture with larger international contractors to provide the best solution to complex road projects – local knowledge of labour and supplies combined with an international perspective and experience and ready capital reserves to complete the project.

Another consideration is the use of PPP and/or PFI contractors relationships. Under these circumstances the risk allocation on a project shifts from the governmental agency to the contractor and/or joint vernture that is constructing the project. The goal then also shifts to ensure that what is constructed is in the best interests of the governmental agency and not just for the contractor *i.e.* that what is built is exactly what was designed and engineered with no material substitutions. The ways to prevent this are covered later in this paper under Dispute Boards.

THE TYPE OF CONTRACT TO BE USED

The most frequently used form contract for road works is published by the International Federation of Consulting Engineers (FIDIC). There are three that apply for the use in road projects. The Conditions of Contract for Construction First Edition 1999 also commonly referred to as the "Redbook" is the most common and is used in the majority of road construction projects worldwide. This Contract for Construction is recommended for building or engineering works designed by the Employer or by its representative, the Engineer. Under the usual arrangements for this type of contract, the Contractor constructs the works in accordance with a design provided by the Employer. However, the works may include some elements of Contractor-designed civil, mechanical, electrical and/or construction works.

The "Redbook" has become popular over the years as it has been prepared by an experienced group engineers/contractors and others in the field and has proven effective in balancing the risk equally between owner and contractor.

Another version of this contract is the FIDIC Conditions of Contract for Construction (Multilateral Development Bank) Harmonised Edition. March 2006. Which is again for Building and Engineering Works designed by the Employer and is referred to as the "MDB" version.

The next most useful form for roadwork is the FIDIC EPC/Turnkey Contract 1st Ed (1999) (The Silver Book). These Conditions of Contract are recommended where one entity takes total responsibility for the design and execution of an engineering project. Under the usual arrangements for this type of contract, the entity carries out all the Engineering, Procurement and Construction: providing a fully equipped project, ready for operation (at the "turn of the key"). This type of contract is usually negotiated between the parties.

Finally, the other form agreement that is used in transportation projects, particularly in electrical sub-stations and related engineering facilities is the FIDIC "Yellow Book" - The Conditions of Contract for Plant and Design-Build, which are recommended for the provision of electrical and/or mechanical plant, and for the design and execution of building or engineering works. Under the usual arrangements for this type of contract, the Contractor designs and provides, in accordance with the Employer's requirements, plant and/or other works; which may include any combination of civil, mechanical, electrical and/or construction works.

Of these three the best one for the protection of the governing agency is the Red Book or the MDB Version with the Yellow and Silver Book versions being used in PPP projects.

DISPUTE AVOIDANCE

The successful completion of any project is dependent not only on the ability of the contractor and the clarity of the drawings utilized but also in the avoidance of any disputes. The FIDIC forms of contract are unique in this respect in that they provide for the use of Dispute Boards to prevent disputes from getting out of control on any project and thus minimizing the risk to either side of a delayed or cost inefficient project.

Worldwide, substantial sums of money over and above the actual original contract sum are transferred several hundred times annually from municipalities to construction engineering firms. This is because statistically the construction industries have a high rate of disputes and delay, which until recently have not been easily resolved without recourse to lengthy arbitrations or worse yet to the Courts.

This is changing however, thanks in great measure to FIDIC and the use of Dispute Boards in its contracts. As an example the Ertan Hydroelectric Dam in China valued at USD$2 Billion had 40 disputes referred to its the Dispute Review Board for decision and no decision of this Dispute Board went on to arbitration or litigation of any kind. The Hong Kong International Airport valued at USD$15 Billion had 6 disputes referred to its Dispute Board and of those only one went on to arbitration at which time the decision of the Dispute Review Board was upheld, and the Katse Dam in South Africa valued at USD$2.5 Billion had 12 disputes referred to its Dispute Board and of these only one went on to arbitration where, again, the decision of the Dispute Review Board was also upheld. In each instance the Dispute Board, did resolve those disputes as quickly, economically and sensibly as possible

Dispute Boards work and sometimes their mere presence and the ability of the Dispute Board members to give informal opinions before any dispute even arises can be of immense assistance. A good example of this in the United Kingdom is the Docklands Light Railway valued at USD$500 Million where no disputes ever fully arose or were submitted to the Dispute Board or the Saltend Private Gas Turbine Power Plant in the north of England valued at USD$200 Million where both the number of disputes referred to the Dispute Board and the number that ever went to arbitration were both zero. Needless to say such

statistics were unheard of in the construction industry before the advent of the Dispute Board.

What is a Dispute Board?

A Dispute Board or Dispute Review Board (DRB) or Dispute Adjudication Board (DAB) is a 'job-site' dispute adjudication process, typically comprising three independent and impartial persons selected by the contracting parties. The significant difference between Dispute Review Boards and most other Alternate Dispute Review techniques (and possibly the reason why or Dispute Review Boards have had such success in recent years) is that the Dispute Review Board is appointed at the commencement of a project before any disputes arise and, by undertaking regular visits to the site, is actively involved throughout the project (and possibly any agreed period thereafter).

A Dispute Board becomes a part of the project administration and thereby can influence, during the contract period, the performance of the contracting parties. It has 'real-time' value. The idea behind a standing Dispute Resolution Board is that it may be called upon early in the evolution of any dispute, which cannot be resolved by the parties and be asked to publish decisions or recommendations on how the matters in issue should be settled. It is usual (but not compulsory) that an opportunity remains for the matter to be referred to arbitration or to the courts if the Dispute Review Board's decision does not find acceptance by the parties. Thus a Dispute Resolution Board may be likened to the United Kingdom's adjudication process, either under statutory-compliant contracts or under the regime established by statute itself. What a Dispute Review Board does that United Kingdom statutory adjudication does not do is to provide a regular and continuing forum for discussion of difficult or contentious matters, to identify ways forward by acting in an informal capacity and to create valuable opportunities for the parties to avoid disputes by keeping proactive communication alive. Another aspect, which is less often discussed, is that by establishing a Dispute Board from the inception of the project the Dispute Board members become part of the project team and are thought of in a different fashion and because of their "hands on" approach can be trusted to be fair and impartial and their advise respected and taken more readily than would a third party or stranger to the project.

The terms Dispute Board or Dispute Review Board are generic terms and include (a) the Dispute Review Board (DRB) which is a device that originated in the USA and provides non-binding recommendations); (b) the Dispute Adjudication Board (DAB) which is a device emerging from the earlier USA model, but which provides a decision that has interim-binding force); and (c) the Combined Dispute Board (CDB), which is a hybrid of Dispute Review Boards and Dispute Adjudication Boards which was created by the International Chamber of Commerce in 2004. Various other terms have been used such as Dispute Settlement Panel, Dispute Mediation Board, Dispute Avoidance Panel and Dispute Conciliation Panel. Fundamentally these different varieties of Dispute Review devices are the same, each providing early adjudication based on the contractual bargain between the parties.

A Dispute Review Board is a creature of contract; the parties establish and empower a Dispute Review Board with jurisdiction to hear and advise on the resolution of disputes. The FIDIC forms of Contract expressly require dispute boards and as such prevent disputes from escalating on roadwork and other projects. They also provide a method of ensuring that the work is being properly constructed due to their ongoing nature and the ability of the Employer to bring issues of improper work to the attention of the Dispute Board at an early stage.

RISK ALLOCATION

Risk is often ignored or dealt with simply by adding contingencies to estimated costs, time and performance. The development of non-traditional contract and funding arrangements, such as PPP and PFI along with international joint venture arrangements, means that a structured and logical approach is necessary to deal with the new types of risk to the new types of project objectives.

Project objectives are not always solely financial. The most serious consequences to a project's objectives may include:

- Construction cost overrun;
- Construction time overrun;
- Inadequate performance (through-put or quality);
- Operating cost overrun.

Whether such consequences are acceptable depends upon the identification of the risk and the attitude to the risk and the importance to the project's objectives.

RISK IDENTIFICATION

Risk Identification requires the establishment of the risk profile and the frequency and severity of hazard together with the impact on the project operation and project finance. The profile is

established by systematic identification and quantification of the risk exposure.

The essential technique is to obtain a detailed understanding of the international joint venture project, its process and the environment in which it is to be constructed and in which it will operate. This requires all three processes to be adopted.

The following are simple examples of hazards, which are applicable to international roadwork joint ventures and if properly anticipated and planned for, can be adequately controlled:

Employer/Owner

- Political or economic changes
- Revenue changes (market)
- Operability
- Maintainability
- Reliability
- Health and Safety
- Environment

Project

- Cost increases
- Time over-run
- Quality not compliant
- Inadequate information for design
- Weather
- Buildability
- Health and Safety
- Environment

Contractor

- Client performance
- Inadequate project definition
- Inadequate project organisation
- Inadequate estimate
- Subcontractor performance
- Inflation
- Exchange rates
- Health and Safety
- Environment

ENVIRONMENT

The environment of the Project dictates the probability of a particular hazard and the likely consequences. The impact of the environment can be described as follows:

Existing Location Environment

It is in the nature of road construction projects to be fixed and to form part of the land and indeed to be dependent upon the land in one way or another for its intended function. This may be seen most obviously in transport projects such as roads, bridges, and tunnels that exploit their location. It is equally true of property and infrastructure developments that take advantage of available supply routes or favourable local conditions either weather or resources or legislation.

This exploitation factor creates four separate but interdependent sources of environment risks. These are:

- Geography
- Site
- Traffic
- Legal and Cultural System.

The success of the project inevitably requires the environment and the effect of the project on the environment to be correctly assessed and modeled.

Site risks involve risk from sub-soil conditions, not only the nature and properties of each strata, but also the existence of ground water, faults, swallow holes, or even the presence of capped reservoirs or methane. The construction of a tunnel may cause surface ground movements both absolute and differential that could affect buried services and existing buildings. The tunnel itself could affect the sub-soil through additional stresses on carbonaceous deposits and shales, which then release methane. On the other hand construction of deep foundations creating very large bulbs of high stress could affect existing tunnels. The location of the site can also involve risks from the presence of certain materials on the site, such as asbestos in a power station that is required to be demolished, which because of the danger to personnel will affect the method of demolition. The difficulty of making clear and unambiguous allocation of liability for the consequences of "changed conditions" - whether of the ground or an existing structure - by drafting of contract terms is a constant problem in construction contracts.

The other physical environment that needs to be considered is traffic - essentially man-made traffic such as cars, people etc. Traffic environment needs to be effectively modeled, not only how construction may affect the behaviour of Traffic,

and therefore, risks associated with it, but also how the road may permanently affect traffic, and therefore the function of the facility. In the case of road developments for instance, the model may have to take into account not only how the roadway will change transportation routes, but also how other proposed road developments will affect trade and how the development of the roadway will affect the amount of future traffic. Such projects require macro-economic modeling and expert knowledge of particular trends. Similarly in planning for a new ring road, traffic modeling would need to accurately predict the effect of the route from other forms of man-made traffic. Inaccurate assessment of any of these factors could significantly affect the construction or function of the project yet there must be a level of uncertainty in any such assessment. The question then becomes whose responsibility this modeling becomes – the international contractor or the local individuals, the PPP or the local government. In either case this issue needs to be resolved before the start of the project so that any risk can be pre-determined.

Legal & Cultural System

Another other category or source of risk is the legal and cultural system. Both the cultural and the legal environments in which the project operates have been grouped together, since they operate together and interact. The use of a dispute board with resort to the ICC for final decision can help alleviate any concern by international contractors.

Other factors include the legal requirements relating to import and export of machinery or relating to health and safety or relating to control of pollution or nuisance. The effect of these factors on project operation needs to be clearly assessed by each participant in the project otherwise there may be very real risk of financial losses in implementing procedures not allowed for, or in paying compensation due to breach of such legal requirements.

The legal and cultural system must be clearly understood when drafting the contract terms. An important characteristic of contracts is that they allocate liability and responsibility for risk. Any uncertainty or lack of precision in the contract terms, itself creates a risk - the risk of disputes. If the contract terms are to allocate risk as intended then they must be drafted in recognition of the legal and cultural system in which the contract will operate and disputes decided, this is one of the key reasons why the FIDIC form of contract is recommended.

Project Environment

The Project Environment required for a road construction project introduces risks arising from:

- Communication
- Organisation
- Resources
- Finance

These risks cannot be considered as peculiar to road construction projects. For instance, although construction and assembly work must be carried out at the site location the risks of major elements being constructed off site are common to all complex road projects. This may be for instance, a resource risk in the transport of such elements at the right time.

The response to these categories of risk is to divide the project into packages that are manageable by the participants. Thus the risk from finance may be managed by using a number of funders, the risk from organisation by dividing the work into discrete contracts to suit each participant with a construction manager or managing Contractor, the risk from communication by appointing a Project Manager, and the risk from resources by adopting designs that reflect availability of materials at the location and the difficulty of transporting materials or pre-assembled units to the assembly location. All these responses involve scaling down the project into manageable packages, and involve analysis techniques and decision-making processes that are well understood and not peculiar to construction projects.

When preparing a contract strategy for any roadwork project involving international contractors an understanding of local laws and regulations are necessary. Also existing or proposed legislation, may make a significant difference to resolution of disputes, cashflow in terms of the payment provisions and the risks of insolvency. Local versus international performance bonds may also have a significant effect on the safeguards put in place for contractor default in performance.

CONCLUSION

It can be seen that through the utilisation of FIDIC contracts, Dispute Boards, proper Contractor selection, understanding and analysis of the “local” and “international” risk factors involved, and a determination of whether a sole company, a joint venture or a PPP will be utilised, a complex road work project can be effectively managed and a successful result obtained.