

## **DEVELOPING A BEST PRACTICE PARTNERING FRAMEWORK IN HONG KONG**

**A.P.C. Chan**

Associate Professor, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

**P.T.I. Lam**

Lecturer, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

**D.W.M. Chan**

Research Fellow, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

### **ABSTRACT**

The construction industry is one of the main pillars of Hong Kong's economy. In 1999, it accounted for 5.6% of the GDP and 40% of gross domestic fixed capital formation. 9.2% of our workforce was employed by the construction industry in that year. There are, however, a number of shortcomings in the industry's operations and in the quality of its product. In April 2000, the Chief Executive of the Hong Kong SAR appointed the Construction Industry Review Committee to comprehensively review the current state of the industry and to recommend improvement measures. The Committee advocates, *inter alia*, the wider adoption of partnering arrangements in local construction so that all project participants will work as a team to achieve shared project objectives rather than in competition with one other.

A research team has been set up in the Department of Building and Real Estate of the Hong Kong Polytechnic University to evaluate the performance of project partnering and investigate ways how the industry can implement these systems successfully in the Hong Kong context. The aim of the research study is to develop a best practice framework for construction partnering. The current issues and problems of construction partnering will be addressed. A research framework combining the use of questionnaire surveys, interviews and a case study approach for the collection of information and data on partnering schemes will be proposed.

### **KEYWORDS**

Partnering Framework, Best Practice, Hong Kong

## **1. INTRODUCTION**

Construction is a very competitive and risky business. Its competitive nature, coupled with the conflicting objectives of participants in construction processes and the increasing reliance on penalty clauses by clients when formulating contract documentation, have made the need for a new procurement approach all the more pertinent. This need is compounded by the experiences of many within the construction industry, which, in the past, have suffered as a consequence of litigation or arbitration proceedings whilst attempting to resolve difficulties that were hitherto encountered. The adversarial relationship between clients and construction contractors inherent in traditional

procurement is one of the major hurdles that have jeopardized the success of construction projects. Some concerned bodies started to recognise that if construction were to compete for investment funds, particularly internationally, both the methodology and public image of the construction industry would have to be re-engineered. Partnering then evolved as one solution.

This paper reports a research project undertaken by a research team at the Department of Building and Real Estate of the Hong Kong Polytechnic University. The overall aim of this research project is to develop a best practice partnering framework for the Hong Kong construction industry by gaining first a good understanding of the factors involved and the necessary criteria for successful partnering. The performance of project partnering will be investigated and ways that the industry can implement these systems successfully in the Hong Kong context will be explored. This paper will address some of the current issues and problems of construction partnering. A research framework combining the use of questionnaire surveys, interviews and a case study approach for the collection of information and data on partnering schemes will be presented.

## **2. DEVELOPMENT OF CONSTRUCTION PARTNERING**

### **2.1 Problems that the Industry is Facing**

Building works have for long been delivered in a traditional manner where clients appoint consultants to act on their behalf, i.e. to produce the design and supervise the construction phase. Traditional general contracting and other forms of procurement like 'Design & Build' and 'Build-Own-Operate' are highly structured and susceptible to adversarial relationships that can last the life of a project. This type of adversarial relationship can give rise to construction delays, difficulty in resolving claims, cost overruns, litigation, and a win-lose climate (Moore et al, 1992). In the late eighties professional bodies started to recognise that if the construction industry were to compete for investment funds, particularly internationally, both the methodology and the public image of the construction industry would have to be improved. Various inquiries were conducted into the practices and productivity of the building and construction industry, upon which some reports were based like NPWC/NBCC (1990); Gyles (1992); and the Construction Industry Review Committee (2001), which identified the followings as the key problem areas affecting the construction industry (CIRC, 2001):

- Poor site safety record
- Unsatisfactory environmental performance
- Need for a more client-focused approach
- Extensive use of traditional and labour-intensive construction methods
- An inadequately trained workforce
- Tendency to award contracts to the lowest bidders
- Short-term attitude to business development
- Non value-adding multi-layered subcontracting
- Declining productivity growth and high building cost
- Fragmentation and adversarial culture within the industry

Many of these issues reflect a lack of communication amongst project participants, and epitomize the adversarial relationships existing at all levels and on many instances in the construction industry. Many new management techniques have gained popularity to help solve these hurdles (Sanders, 1994; Eckert, 1994; Schriener, 1991). Partnering is one such technique, which attempts to create an effective project management process between two or more organisations. It aims also to generate an organisational environment of trust, open communication and employee involvement (Sanders and Moore, 1992).

### **2.2 Partnering as a Strategy to Improve the Competitiveness of the Industry**

Practitioners and academicians alike have developed useful frameworks and prescriptive solutions for enhancing relationships between suppliers and customers in the manufacturing industry (Weber, 2001; Gadde and Snehota, 2000). Collaborative relationships between the client group and constructors in the construction industry have received considerably less attention. Li et al (2001) advocate that a well-defined partnering structure that incorporates the elements of customer satisfaction and continuous improvement can secure the success of construction projects.

Although partnering as a project delivery strategy has developed from the US Army Corps of Engineers (Cowan, 1991), research into partnering has grown in many parts of the world, some of which are highlighted here. Cooper (1999), in an EPSRC funded investigation, conducted with BOVIS Construction, discovered that partnering was already in full implementation for project delivery in the UK. Through another EPSRC/DETR funded project in the UK in which key industry representatives such as Taylor Woodrow and Thames Water Utilities were involved, Walker (1999) observed that there were no formalised processes for the routine inter-organisational review of partnering projects. The investigators then developed a review process for partnering projects. An EPSRC/DETR funded project in the UK, involving the University of Lancaster, Taylor Woodrow and other key industry organisations compared partnering relationships in construction and other sectors. Sequel to this, Parfitt (1999) called for a review of the internal re-organisation of the purchasing function by construction companies involved in partnering. This is to enable the construction sector to respond to the varied client types with which they deal with.

The Construction Industry Institute of Australia (CIIA) and CSIRO have been engaged in research into partnering and project alliance (Lenard et al, 1996). Walker et al. (2000) provided descriptions of project alliancing and project partnering in relation to the Australian National Museum project. In an investigation in the UK, Akintoye *et al.* (2000) studied the implementation of partnering, and issues considered included the perceived failings of traditional adversarial relationships, factors responsible for success in partnering and appropriate conditions for the use of partnering. They observed that consultants were less positive about the use of partnering, as this form of arrangement diminished their level of control over projects. On the other hand, clients and contractors were more upbeat about partnering, given its benefits. In their investigation, Akintoye *et al.* (2000) also observed that, in overall, the barriers to partnering were rated less significant than the potential benefits. Therefore, partnering will receive an increasing usage in the coming years, as it has benefits for the construction industry.

### **2.3 Partnering in Hong Kong**

The client and the contractor represent two distinct organisations with separate sets of objectives, management styles, and operating procedures. In most cases with the traditional procurement system, members of the two management teams do not get to know and understand each other's objectives until the project binding them contractually is well underway. Earlier studies, originating from Hong Kong, indicate that there is a growing shift from the traditional lump-sum construction contract towards alternative contract strategies (Lam & Chan, 1996). Thus the use of partnering in Hong Kong is set to grow. The earliest formal partnering arrangements within the Hong Kong construction industry were exclusively applied to hospital projects (Skues, 1996). The two main participants in these early schemes were the Hospital Authority and Leighton Contractors, an Australian based firm. The first of these early projects, North District Hospital, located at Sheung Shui, introduced partnering through the initiatives of the Employer. A workshop on partnering was conducted after the tender stage, but before the contract was awarded. In the second project, Tseung Kwan O Hospital, a provision for partnering was made within the Contract, and thus was arranged through the Contractor. Partnering has since been utilised successfully on other hospital schemes, like the Haven of Hope Hospital project and the United Christian Hospital (Skues, 1996). The use of partnering for procuring construction projects in Hong Kong is continuing.

Previous studies (Chan & Tam, 1995; Chan, 1996; Chan, et al, 1999) suggest that project partnering can be used successfully on building projects and can provide improved time and cost benefits to both clients and contractors. However, the implementation of project partnering is not without problems. In an earlier research, Chan and Yu (2000) identified that the major problem in implementing was the commercial pressure, which compromised the partnering attitude. The proposed research, to evaluate the performance of project partnering, and investigate ways for its effective implementation in the Hong Kong context would enhance the competitiveness of the industry. Modifications to existing practices, which will make partnering more economical, will be put forward to achieve better quality, safety performance and value for money. Chan *et al.* (2001a) conducted a bivariate correlation analysis to explore the relationships among overall project performance; inter-organisational teamwork, project participants' job satisfaction, and their personal views on the design build procurement method. The findings reveal that if inter-organisational teamwork is fostered in design build projects, (1) successful project performance could result; (2) project participants would develop a positive view of the design build procurement method; and (3) their job satisfaction would be higher. Therefore more empirical studies on inter-organisational teamwork should be undertaken.

## **2.4 The Need for More Empirical Studies in Partnering**

Although many studies relating to the practice and development of project partnering have been conducted in other countries, little if not any, has been done in the Hong Kong context. The lack of an empirical understanding of the partnering system in Hong Kong has prompted the researchers to propose this detailed study, to investigate the efficacy and the likely development of this innovative system in the construction industry of Hong Kong. Country specific features and their implications on the adoption of partnering in Hong Kong will be addressed by the research. In this regard, socio-political and economic dimensions will be addressed in the investigation.

## **3. RESEARCH FRAMEWORK FOR THE PROPOSED STUDY**

### **3.1 Overall Research Approach**

The research will follow Walker's model (1997) to combine the use of questionnaire surveys, interviews and a case study approach for the collection of information and data on partnering schemes. The research framework is shown in Figure 1.

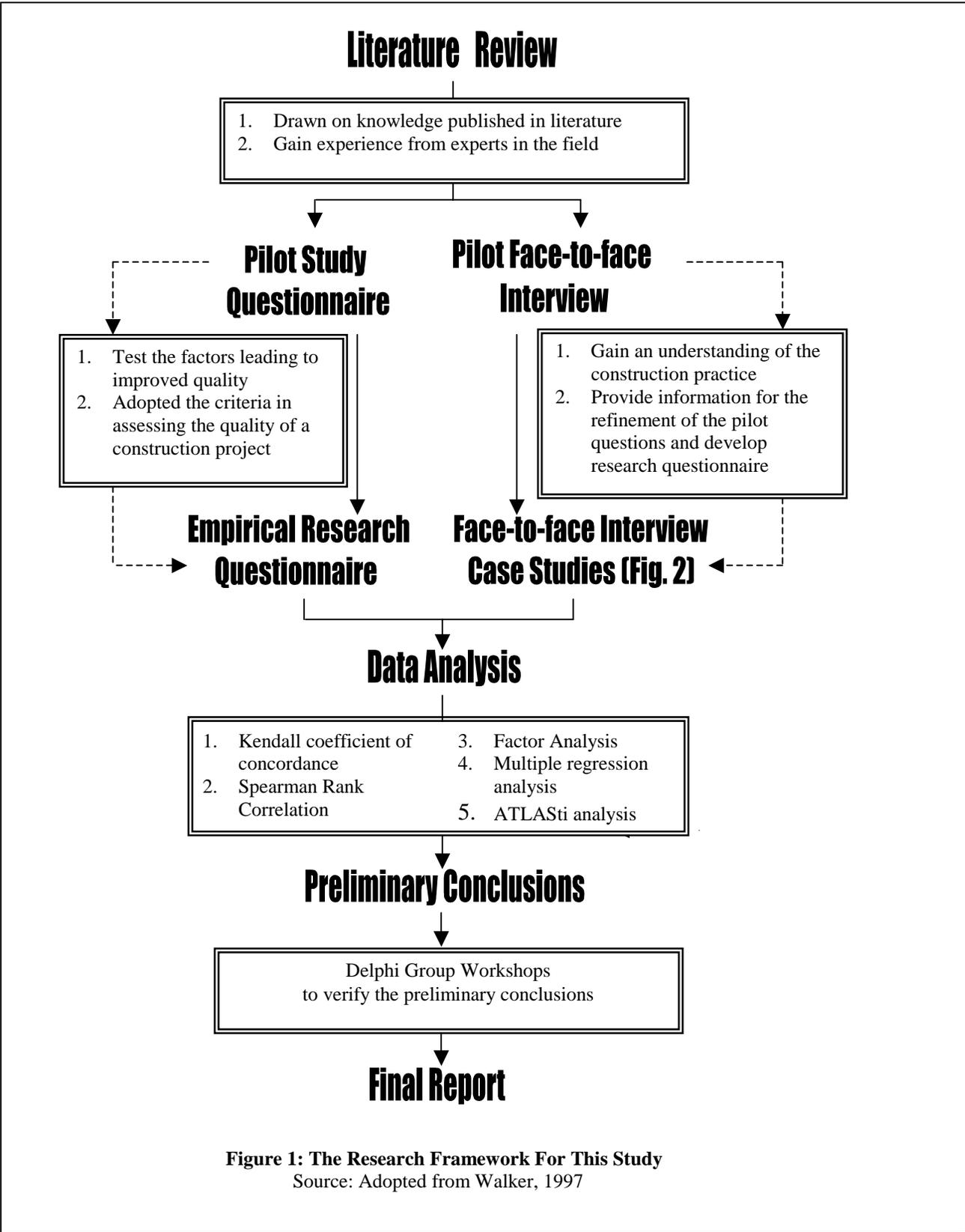
Literature on partnering will be further reviewed and current partnering practice will be documented. The review exercise will also include the development of an instrument to conduct the case studies.

Data will be collected through questionnaire surveys, and through face-to-face interviews. Practitioners with involvement in project partnering will be target of the survey. Participants with hands on experience in partnering will be interviewed. One or two of the researchers will interview each organisation separately, and each interview will be fully documented. The following action plan is developed to achieve the objectives:

- (i) Investigate the partnering process in the Hong Kong construction industry in terms of economical and organisational structures; duties and responsibilities of the parties involved; lines of communication, control mechanisms and types of partnering charter(s) used.
- (ii) Evaluate the perception of clients, consultants, contractors, suppliers, and subcontractors on their satisfaction criteria, and why project partnering is favoured.
- (iii) Investigate the motivational factors that make partnering attractive to users.
- (iv) Investigate the different types of relationships employed in partnering and the incentives used in such.
- (v) Evaluate the performance of partnering with respect to general criteria of satisfaction, i.e. time, cost, quality, etc in comparison with satisfaction derived from other forms of procurement.
- (vi) Develop on the basis of the above results (i-v) a best practice framework for project partnering to suit the Hong Kong market.

### **3.2 Quantitative Data Analysis**

A pilot questionnaire will be developed to test the factors leading to, and the criteria adopted in assessing the success of a partnering project. This will be used in conducting a pilot study by means of face-to-face interviews, to gain an understanding of the construction practice in Hong Kong as well as to provide information for the refinement of the pilot questionnaire and the development of the main research questionnaire. The outcome of the pilot survey will enable the fine-tuning of the empirical research questionnaire. The empirical research questionnaire will be designed to examine the project participants' perceptions on the benefits and drawbacks of partnering arrangements. Certain characteristics of respondents may be likely to affect their answers to the questions, resulting in the presence of group effect on the answers. In order to test the group effect of respondents, they will be divided into different groupings such as the client group (building owner, consultants, users, statutory organisations, and financier) and constructors (contractor, operators, subcontractors and suppliers). Different grouping criteria (variables) will be compared to explore whether there will be difference in groups' responses. If there is no significant difference, the groups can be combined for analysis. The questionnaire will also be used to examine the relative importance of factors leading to the success of a partnering project. The quantitative data collected will be analysed using the Statistical Package for Social Science (SPSS). The techniques that will be used in the proposed research, in respect of quantitative data, include concordance analysis, factor analysis, and multiple regression analysis.



### 3.3 Qualitative Data Analysis

The study will further analyse approximately ten case studies of partnering projects on the basis of a common methodology (Figure 2). One partnering scheme brings together several participating organisations (e.g. client, contractor, subcontractors, operators, project lender, suppliers, advisers, etc.). Each case study will collate information from all project participants on their organisational structures, responsibilities, communication, satisfaction, motivation, inter-relationships, risks and difficulties faced. Information from the case studies will enable us to explore the reasons why partnering is favoured in the industry; identify the criteria adopted by the industry to evaluate the success of a partnering project; and compile a list of factors essential factors contributing to the success of a partnering project.

We will analyse information from all the participants associated with the projects *vis-à-vis* the client group (building owner, consultants, users, statutory organisations, financier) and constructors (contractor, operators, subcontractors and suppliers). Thus it is anticipated that data will be collected on a combination of interview and workshop basis from a minimum of sixty organisations. Our approach in each case will be to examine the process by which participants make partnering deals to work. The approach adopted for each case study project will be mapped and the decision-making process in the selection of particular approaches and processes will be documented.

In our analysis we will be concerned both with procedural regularity and consistency together with the suitability of the procedure in relation to the objectives of the project. In essence, given a particular set of partnering project objectives and by comparing with contemporary projects, we will be able to determine whether the procedures adopted by the respective organisations in different projects are consistent, and if not, identify the reasons.

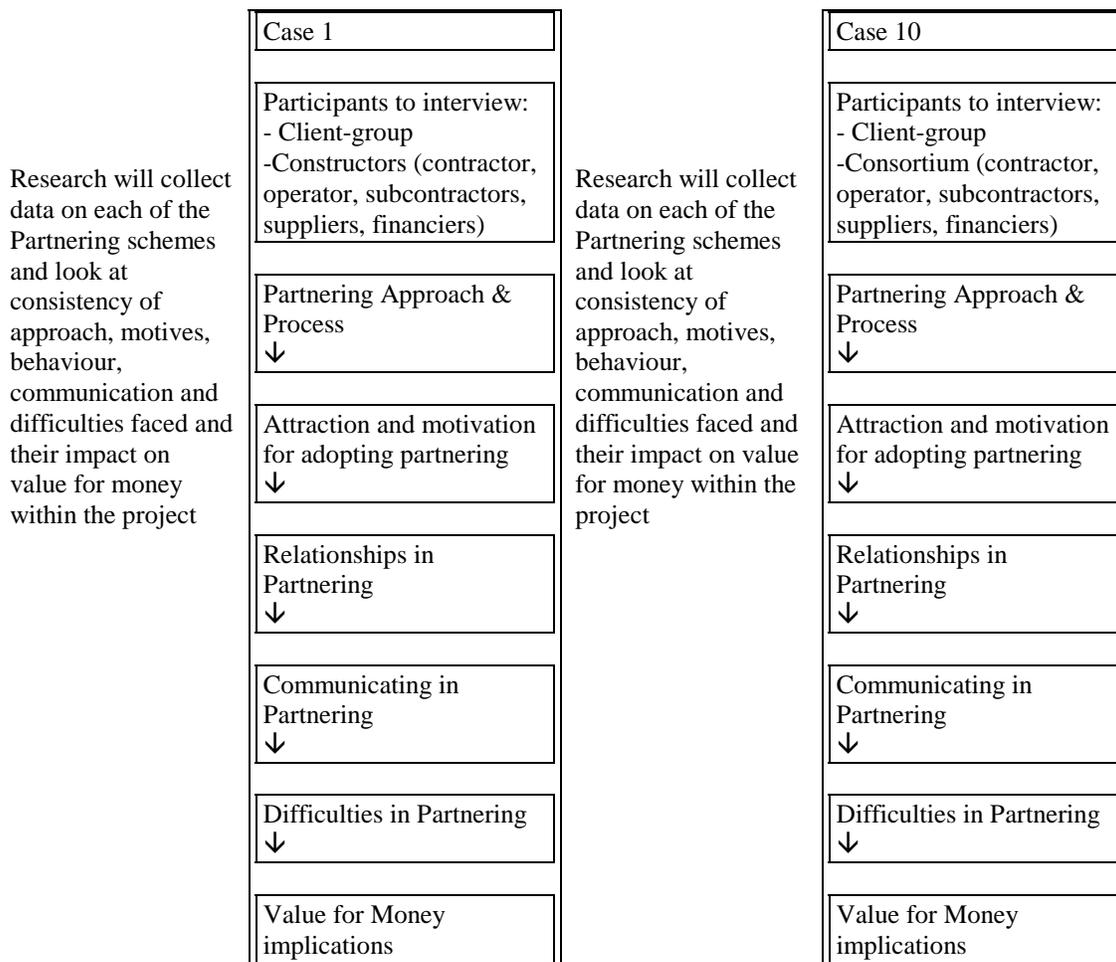
The case study projects will cover a range of project sizes, types, consortium groups, client groups, pathfinder and non-pathfinder projects. In each case, the researchers will look for patterns of approaches, processes, satisfaction, motivation, communication, relationships and difficulties within each project and seek similarities and differences between the cases. The aim will be to look at the cases both individually and collectively.

The qualitative data to be generated will be analysed using both the exploratory techniques developed by Morgan (1994) and a reputational approach (Seymour and Fellows, 1999) to establish consistency in the delivery of partnering projects. Applying Grounded Theory techniques, an inventory of typifications and key terms used in project partnering will be identified. These qualitative analyses will be undertaken using the ATLAS.ti software.

ATLAS.ti is a powerful workbench for the analysis of qualitative data. It is also useful for the management and model building of textual, graphical and audio data. It offers tools that can manage, extract, compare, explore, and reassemble meaningful pieces from extensive amount of data in a creative, flexible, yet systematic way. ATLAS.ti will be used for collating and storing the research data. The software facilities will also be used in the development of the framework for partnering practice, and in mapping the conditions under which the framework may be used. ATLAS.ti will facilitate the analysis and comparison of data from different sectors and projects. This will, in part, enhance and hasten the check for consistency. The software will also facilitate the culling of information either for presentation or reporting.

### 3.4 Validating the Results

Research data and analyses will be triangulated from multiple sources to help improve the credibility of the findings. Results derived from both the quantitative and qualitative analyses will be cross-referenced to complement each other. Delphi group workshops and steering group discussions will be used to generate relevant information and to supplement and/or confirm outcomes of these analyses (Chan et al, 2001b). Workshops will be used to discuss (preliminary) conclusions with industry practitioners involved in the study to help understand the relevance of the findings in the context of changing circumstances prevailing over the period studied. The input from the Delphi group to be constituted for the project, will be in the form of a discussion and moderation of the results obtained and confirmation of the framework developed. Three workshop sessions have been included in the research programme. Towards the final stages of the project, two of these workshop sessions will be used to jointly assess experiences with Best Value within certain exemplary projects. The workshops will investigate the question as to whether the proposed standardisation is in line with these experiences.



**Figure 2: Overview of the case studies planned for the research**

#### 4. CONCLUSION

In April 2000, the Chief Executive of the Hong Kong SAR appointed the Construction Industry Review Committee to comprehensively review the current state of the industry and to recommend improvement measures. The Committee advocates, inter alia, the wider adoption of partnering arrangements in local construction so that all project participants will work as a team to achieve shared project objectives rather than in competition with one other. The Hong Kong Housing Authority, through its consultative document, HA8/2000, “Quality Housing: Partnering for Change” also promotes the adoption of partnering arrangement to improve the quality of housing projects. Experience in Australia, the UK and America demonstrates that a partnering approach to construction will enable the participants to work together as a team rather than in competition with each other (CIRC, 2001). It is however noteworthy that, the implementation of partnering in the Hong Kong is not as widespread as in other parts of the world. Therefore the proposed investigation will, in part, appraise the current practice of partnering in the Hong Kong construction industry. This paper serves as an interim report to record the progress of this on-going research by addressing some of the current issues and problems of construction partnering. A research framework combining the use of questionnaire surveys, interviews and a case study approach for the collection of information and data on partnering schemes is also presented.

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