



Co-operative benchmarking: a tool for partnering excellence in construction

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Abstract

This paper suggests that co-operative benchmarking should be used as a tool for achieving partnering excellence in construction projects. The paper presents an eight-stage process of a co-operative benchmarking approach which can be used to improve the performance of parties entering into partnering agreements (the COBAP process). It is suggested that the establishment of a COBAP team and effective management of the COBAP process, can stimulate a series of positive outcomes such as mutual trust, commitment, creativity and continuous improvement. The implementation of the COBAP can be used as a mechanism for collective learning, which can sustain a competitive advantage. © 2001 Elsevier Science Ltd and IPMA. All rights reserved.

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1. Introduction

The problems associated with the construction industry have been well documented, various government initiated reports have heavily criticised the industry for its poor performance and productivity compared to other industries (e.g. [22]). This has been exacerbated by its highly fragmented and adversarial nature. Co-ordinating and integrating parties involved in projects has become an arduous task because of the diverse cultural and behavioural characteristics that parties possess. According to Brown and Beaton [5], failures encountered with the procurement process can contribute to 30% of a projects cost being wasted due to problems of integration. With this in mind, there is a need for alternative management practices and tools that can be used to co-ordinate, integrate and stimulate integration between parties so that their productivity as well as project performance can be improved. Partnering has been advocated as a mechanism for developing relationships so as to improve inter-organisational relations [18]. Though reported examples of successful long-term partnering

are rare, there are few tools available for inducing effective agreements that lead to performance improvements. This paper proposes that co-operative benchmarking is an effective tool that can be used to support partnering in construction. An eight-stage process for a co-operative benchmarking approach to partnering (the COBAP process) is presented and discussed.

2. The nature of construction

The market and organisational structure of the construction industry is highly fragmented and divisive. The industry is occupied by a large number of medium- and small-sized firms, which make it a highly competitive environment. Construction projects are organised by different parties linked hierarchically together by contracts with highly restricted terms and conditions [3]. These parties include clients/owners (private or public), architects, engineers (e.g., structural, mechanical), general contractors, subcontractors, suppliers, etc. They possess various skills and knowledge although they belong to the same industry. Because of the diversity of these parties, they tend to have their own goals and objectives, which can be conflicting and may induce adversarial relations.

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To solve the existing co-operation problems in construction, which are surrounded by an increasingly complex environment, it is suggested that alternative strategies need to be explored for establishing core competencies, creating communication channels and maintaining high construction quality. It has been recognised that fragmentation is influenced by economic factors, such as an absence of economies of scale or experience curve (e.g. [27]). They have attempted to conceptualise different forms of contractual integration [28] to stabilise the relationships between construction parties, such as the use of long-term procurement contracts [33] and the formation of the quasi-firm inside the contracting system [11]. However, these contractual approaches to integration do not recognise the social psychological approach that is needed for effective integration [28].

3. Partnering as an alliance

According to some business strategists (e.g. [23,30]), an alliance is one way to cope with the complex and competitive environment where a large number of labour specialities operate. An alliance can take many forms, e.g. a joint venture or partnering. A joint venture is the contractual establishment of an independent company (formed by at least two parties). With the presence of a legitimate link between joint venture parties, fewer obstacles to the flow of information are expected [1]. Given the discrete nature of the construction business, joint venture might not be appropriate. As Hsieh mentions [19], in Taiwan, although more than 80% of general contractors admitted that they require a long-term relationship with specific sub-contractors and material vendors, they prefer informal relationship (financially independent) rather than any form of joint ownership.

For the past two decades, partnering has been increasingly applied in the North American construction industry [21]. It has been widely adopted in other places (e.g. [19]). Some might replace it with other terms as such as 'strategic alliance' (e.g. [3]) or 'vertical integration' (e.g. [20]). Essentially, partnering is the establishment of an informal group among construction partners and creates non-legitimate but 'permanent' relationships. It is basically used to resolve disruptive inter-organisational conflicts [9]. In the eyes of Brown [6], conflicts are generated at the organisational interface. Unlike most resolution tactics that focus on the healing of individual conflicting parties, the formation of a partnering alliance can influence the organisational interface between parties to be more adaptable to the surrounding environment.

This involves forming a permeable membrane at the interface to restrictively open the boundaries between conflicting parties and maintain a sufficient internal regulation to prevent the escalation of problems, while

not suppressing critical discrepancies. In other words, parties can tighten or loosen the interface constraints according to their own discretion.

Numerous definitions of partnering can be found in the construction literature (e.g. [8]). For example, Crowley and Karim [9], p. 36) define partnering as:

“(an) organisation (that) implements a co-operative strategy by modifying and supplementing the traditional boundaries that separate companies in a competitive climate. In this way, partnering wraps the major project participants into an alliance that creates a cohesive atmosphere for the project team members to openly interact and perform”.

Crowley and Karim [9] conceptualised co-operative partnering using diagrams of permeable boundaries and cell-like organisations. Each diagram was simplified to represent relationships between the client, consultants and contractor. They suggested that partnering had four dimensions:

- adversarial (perceived by the involved parties as a win/lose situation and resulted in more formal litigation);
- guarded adversarial (relationships strictly adhere to and interpreted by the contracts);
- informal partners (understandable and co-operative parties with fewer disputes); and
- project partners (equal partners co-operatively work with a common set of goals).

Similarly, Ellison and Miller [12] used the following categorisation for partnering dimensions:

- adversarial;
- team-oriented;
- integrated; and
- strategic partnerships.

The above two sets of dimensions, although not identical, were shown to develop a partnering continuum where one extreme is an adversarial relationship and the other extreme represents equal and co-operative partners. Fig. 1 illustrates how boundaries work in four levels of partnering. However, the current papers view of the functions of boundaries is slightly different.

In the first level, the three parties are contacting at one point with each other. Their formation of a partnership is solely due to the contractual requirements. This is a common form of relationship in construction. The contractual terms and conditions clearly define the roles played by the involved parties where the liability and compensation clauses are also stated in detail. In order to protect against liabilities, the solid boundaries isolate the organisations to having minimal communication and contact with each other. As these organisations are

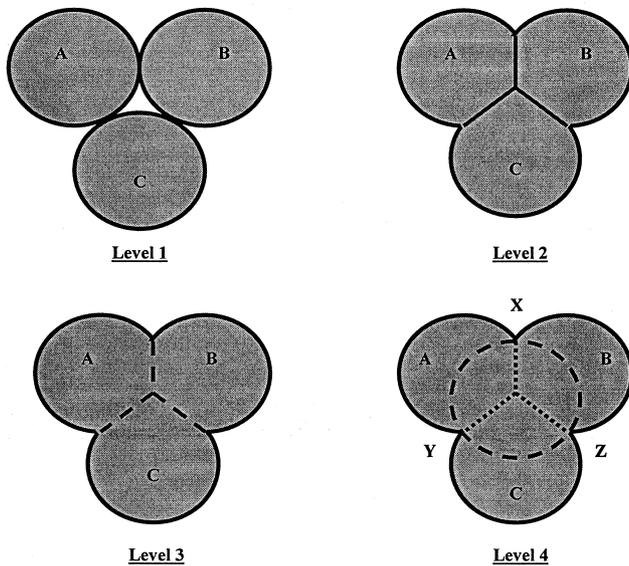


Fig. 1. The four levels of partnering.

not looking for compromises, they maintain a high level of confrontation, which may result in conflicts and disputes. Litigation is usually their final outcome.

In the second level, the organisations have changed their shapes to adapt a wider contact with other parties. However, the boundaries are still rigid and impermeable so that these organisations are protected against the attack created by the competitive environment, while individual interests and resources can be shielded. Such a solid boundary implies that trust cannot be created among these organisations. The contract remains as the evidence for negotiation, but a memorandum of understanding may be signed additionally to reflect the presence of a better working relationship [12]. Although they have more communication, interaction and mutual adaptation, these outcomes serve to protect their own interests rather than to achieve a common goal and mutual gain. Disputes are still common but fewer adversarial relationships are found.

In the third level, the solid boundaries between the organisations are replaced with a semi-permeable membrane (as denoted by dashed lines). This involves a paradigm shift to the formation of an inter-organisational team, which induces an entirely new way of thinking about how projects are to be contracted and executed [12]. The dashed lines allow the resources, such as knowledge and experience, that each of the involved parties would like to share with other parties to pass through the boundaries. Although some might say that the interests of this integrated team (e.g. completing the project on time and within the budget) must supersede individual interests (e.g. protecting against claims), self-interests are still prevalent at this level. Since the boundary is the only gateway that can prevent any leakage of resources, the organisations are very careful in selecting the inputs or resources for the team. They

are also sensitive to the speed and flow of resources. If there is any misunderstanding, the boundaries can become rigid again. To remain in this level may not be a worthwhile investment.

In the fourth level, co-operative partnering founded on trust is formed. This involves the formation of a partnering organisation [9]. As illustrated in Fig. 1, the boundaries between the three organisations are denoted by dashed (semi-permeable) and dotted (permeable) lines. The dashed lines form the new partnering organisation and its boundary. Although such semi-permeable dashed lines allow the resources to flow from the source organisation to the virtual organisation, the boundary is able to restrict the leakage of sensitive and confidential information to other members. The main contributed or invested resources in partnering are knowledge and experience, which are shared among members intending to create a learning climate. Moreover, representatives from the source organisations can directly interact with their counterpart in this virtual organisation to exchange their ideas and opinions. New insights can pass back to individual organisations for improving their own practices.

On the other hand, the dotted lines, which were initially the semi-permeable boundaries between organisations become more permeable to exchange knowledge, experience, ideas and opinions than the dashed lines. As a result, this permeability benefits members with improved interaction, communication, trust and commitment. Such a collective teamwork forms a strategic alliance towards the overlapping benefits and common goals. This exceeds the traditional view of the construction parties that they were only serving for common short-term objectives in the project, after which they would be detached and the experience gained would no longer be reused. Partnering should be viewed as a long-term strategy that focuses on sharing of knowledge, experience, vision and meaning. Learning should then be the core element, and the development of a continuous-learning culture should be the ultimate goal.

The Crowley and Karim model [9] can be used to explain the importance of reorganising the interface between involved organisations so as to enhance their capability to deal with inter-organisational conflicting issues and to improve their competitiveness over their rivals. However they do not describe how to achieve such a partnering organisation. Some authors have suggested the use of a change model to speed up the partnering process [34]. It is clear that partnering is used to change the weaknesses and threats of the construction parties into strengths and opportunities respectively [34]. argues that partnering requires a long-term strategic plan with cultural change intervention in order to move beyond a traditional discrete project nature. However, such a change process does not embrace all the core elements of partnering since the importance of continuous

improvement and customer satisfaction are not recognised.

Ellison and Miller [12] recognised that continuous improvement is the final achievement of a partnering process and the repetitive point for a new process. It helps the partnering organisations to identify where they are and where they want to go. In other words, it leads them to ascertain their missions and strategies. It involves a joint assessment of performance, on-going evaluation of updated needs and expectations, feedback of what they have learned and subsequent actions for remedial and improvement purposes.

Larson [20] stated that satisfying customers is one of the critical success factors of partnering. Part of his study tested empirically the relationships between the partnering dimensions and customer satisfaction on low-bid awarded contracts. His findings revealed that adversarial relationships lead to low customer satisfaction, and co-operative parties make it easier to satisfy customers' needs.

4. Benchmarking and partnering

A well-defined partnering structure that incorporates the elements of customer satisfaction and continuous improvement can secure the success of construction projects. In fact, benchmarking would be an appropriate tool to operationalise partnering and stimulate process improvement. Based on the literature presented herein, Table 1 lists the outcomes and potential benefits of partnering when incorporating benchmarking processes.

4.1. Benchmarking

Camp [7] defines benchmarking as “the search for industry best practices that will lead to superior performance”. It emphasises the value of learning of best practices internally or externally for the purpose of achieving superiority. Such a learning concept should be undertaken in a structured, formal approach so as to improve customer satisfaction and continuous improvement [10,32].

Benchmarking involves a comparative analysis between at least two parties. If such a comparison has to take place with another organisation, an inter-organisational body should exist. Such a relationship can be competitive or collaborative in nature [10]. A competitive relationship is usually formed by organisations, which are interdependent but compete for similar scarce resources [17]. Such a relationship is vulnerable, easy to deform and short-term. Moreover, mutual learning may not occur, and as a result this discourages trust, commitment and creativity.

Cox et al. [10] use the terms collaborative and co-operative benchmarking interchangeably. Some authors, however, have tried to distinguish them by arguing that

their advantages are different. For describing partners who engage in non-competitive, mutually beneficial and win-win activities, some have suggested the use of the term collaboration [4,15]; while others suggested the term co-operation (e.g. [16]). Although the two camps have different views on selecting the terms, both of them recognise the use of the term to describe benchmarking in support of mutual and reflective learning on a continuous basis. Thus, the term used must reflect that benchmarking is a long-term process. Love [24] stated that collaboration means working together for a specific objective, while co-operation means operating and combining together. A specific objective is short-term in nature while combination implies long-term action. In other words, collaborative partners have short-term objectives while co-operative partners have long-term strategies and goals. As a result, they suggest the use of co-operative partners for continuous learning to occur.

Co-operative benchmarking can be used to initiate continuous learning for sustaining superior performance. As Camp [7] suggested, benchmarking should be better formed as partnership where involved parties can all gain through sharing of knowledge [31]. Further suggested that the emergence of new forms of organisational structure could expand the role played by co-operation in the success of organisations. This reflects that the new partnering organisation formed needs co-operative benchmarking to sustain competitive advantage. Co-operation can then be secured for not only survival, but also the growth of benchmarking organisations.

Measuring the success of co-operative benchmarking needs to take into account indicators of the process as well as outcomes, such as improved ability, flexibility, innovation, improved communication, quality, reduced costs, goal achievement, etc. [10,25]. Also, a trusting partnership is more likely to continue in an effective co-operative benchmarking. These measures of co-operative benchmarking resemble those essential features of successful partnering. In fact, partnering extends beyond being a method for just improving relationships to a strategy that requires an appropriate management tool (i.e. co-operative benchmarking) to propel it and make it work.

5. Co-operative benchmarking approach to partnering

The co-operative benchmarking approach to partnering (COBAP) is a process model that can move partnering beyond just a single project agreement to a long-term alliance. The name ‘COBAP’ implies that members are ‘baptised’ together for the common purpose of seeking customer satisfaction, continuous learning and competitive advantage. When an organisation was prepared to conduct the COBAP with other organisations, it should select at least two representatives (up to a maximum of

Table 1
The outcomes and potential benefits of benchmarking approach to partnering

Outcome	Benefit
Long-term commitment	Effective team building The reinforced mutuality of the parties Increased cohesiveness to confront the rivals Reduced litigation Feelings of comrade among the parties
Trust	More confidence Open communication Increased exchange of ideas Sharing of resources
Shared vision	Development of common goals to achieve Consensus through open expectations Candid environment Increased opportunities for innovation
Problem solving ability	Conflict/disputes resolution A win-win attitude Freedom of speech and openness Timely decisions
Equity	Equal sharing of risk Equal sharing of resources
Creativity	More innovation Open exchange of views and ideas Synergy
Cost effectiveness	Reduced project costs Eliminate costs for litigation More value engineering Meeting schedules
Customer satisfaction	Well-defined customer needs Fewer claims and change orders High technical performance
Continuous improvement	High quality products and services Improved technology and methods Maximised resources utilisation effectiveness Creating a learning culture (by initiating a learning attitude)

five) to stay in the partnering organisation (or inter-organisational team). Members should bear in mind that co-operation is not bound by the one-off project. It is absurd and impossible for these organisations to have substantial mutual gain in such a short period of time. Searching for the best practices, the comparison of performance gaps and implementing change may all be time-consuming. By having the obligation to long-term commitment will organisations benefit from the COBAP process? In fact, it is suggested that COBAP can work in the following three situations:

- *Partnering is formed for bidding new contracts.* Some authors have suggested that members of partnering can clearly understand their own deficiencies. Before the bid, they can find ways to rearm themselves. Previously, partnering was misunderstood to be only related to contractual requirements but not a pre-contractual (or bidding)

co-operation. Nevertheless, partnering for bidding will stop to operate if the bid is successful. Members will undertake the project based on the roles already stated in the terms and conditions of the contract. In contrast, if they lost the project, they will reform for the next bid.

- *Partnering is formed for executing contracts.* As previously mentioned, partnering for a single project may not be worth the initial costs incurred for the formation of partnering, because trust and commitment may not be developed during the short contract term. However, if such a partnering has been formed for a certain period (at least for several projects), then there may be harvests in the subsequent projects, provided that members are all or mostly remaining in the partnering organisation.
- *Partnering is formed for organisational growth.* This is the essence of the meaning of partnering. Members need not be the current contractual partners. Certainly, they should have some previous project relationships and look for future co-operation in new construction projects. They group together for exchanging resources in terms of knowledge, skills, experience, visions, ideas, information, etc. Only by equal sharing of these intangible resources, can members strengthen themselves for construction matters, including bidding and executing contracts and achieving pre-determined performance.

In addition to the situations for partnering, this paper proposes an eight-stage COBAP process (see Fig. 2). This process is based on the models developed by Camp [7], Vaziri [32], Wilson et al. [34], Fond et al. [13], and has several implications. First, it provides a systematic platform for improving performance in order to satisfy customers' needs and requirements. Second, it is cyclically operating. This resembles what Camp [7] referred to benchmarking as an ongoing management process. Third, it can be used to establish long-term goals and project new operational performance attainment targets. Fourth, it emphasises communication and commitment. Effectively communicating to external partners as well as internal staff are equally important and result in obtaining their support, commitment and ownership. The COBAP process is described herein after.

5.1.1. Developing the COBAP team

Bringing different organisations together and being responsible for the continual diagnosis, co-ordination and problem solving requires the development of a highly respectable team. In a typical benchmarking process, a 'need assessment team' or quality function deployment (QFD) team is formed to identify a customers needs and a project team is formed to run the benchmarking project [32]. Wilson et al. [34] on the other hand, suggested the use of a transformation leadership

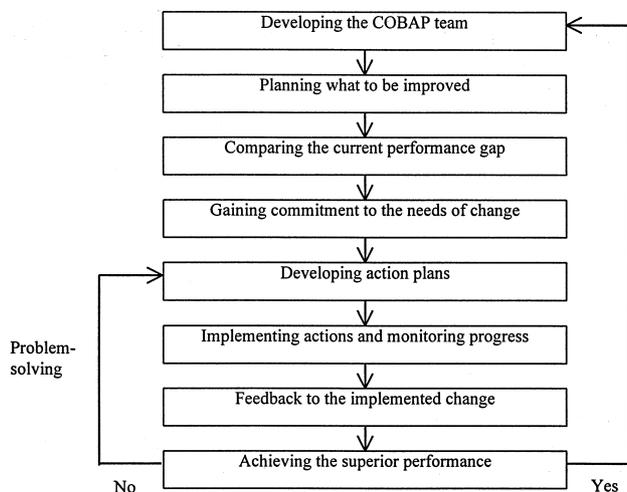


Fig. 2. The Co-operative Benchmarking Approach to Partnering.

team (TLT) for initiating and leading the change effort and an action research team (ART) for monitoring the change process at the project level. However, a single COBAP team is expected to form and manage the whole process since the process is perceived as a strategic affair. This may also increase the commitment, responsibility and initiative of the team members. When the strategic change has led to some action plans at the operational level, other teams may be formed to execute these plans. Yet, the descriptions of these operational teams are considered to be outside the scope of this paper.

Referring to the COBAP team, each partnering organisation should assign at least two members to it. One should be a senior executive who has a thorough understanding of the corporate business and will be one of the ‘permanent’ members in the virtual organisation, while the other should be the project manager who is in charge of the potential or current project. The team members should possess strong leadership and managing skills as well as being good at establishing team spirit in an informal communication network. Although, they may not be the top executives of the organisations, they must gain the total support from the top management. The primary focus of the team is to manage the COBAP process.

Team members not only protect their own corporate interests but also promote their missions and goals and influence others in acceptance of their values and visions. However, the partnering (or virtual) organisation should also have its own mission, vision, values and goals [26]. For example, the partnering organisation should have the vision to change the traditional mindset to cope with the adversarial and confrontational business; the mission to accomplish every contract effectively and efficiently; the values that focus on long-term commitment, trust and confidence, clear expectations, responsibility, courage, understanding and respect; and goals that focus on continuous improvement and customer satisfaction. For detailed examples, refer to Wilson et al. [34].

5.1.2. Planning what to be improved

The COBAP team should first identify customer needs and determine how these needs can be achieved. Customers can be internal or external, and their needs can be projected by identifying their key quality characteristics. These quality characteristics may be major features or outputs that represent a small part of the process but have a large effect on a projects outcome. Some examples of internal influences are adversarial relationships, poor communication and misunderstanding, while external influences include rework, unclear lines of responsibility, project delay and poor monitoring systems.

The key quality characteristics are the basis for identifying critical success factors, which will be measured with appropriate indicators (i.e. performance measures or metrics), using either existing or custom-made measures. To ensure that the results can be manageable, each activity for improvement should be limited to five key quality characteristics and their respective critical success factors [32]. Specifically, each indicator should have a clear operationalised meaning of how to measure and interpret the factor. Such standardised measures ensure the effectiveness of comparison. Moreover, the team needs to identify the best practices that can be found within members of the partnering organisation or from other organisations that are willing to share information and practices. Refinements of the key quality characteristics and critical success factors are necessary since the team has improved in the understanding of customer needs during the planning process.

5.1.3. Comparing the current performance gap

In this stage, the team should identify what data needs to be collected and what method to be used to collect the data. The collection of data aims at quantifying the measures for the critical success factors. There are potentially two sources of data. First, original research, where data are collected from surveys, interviews or field study, which serve as the primary source. And second, completed research provided from periodicals, books and reports are the secondary source. A major advantage of original research is that the findings reflect real situations. Whilst completed research simply supplies immediate information. The team should evaluate each source concerning its accessibility, accuracy, reliability, validity, timeliness, cost, scope and readability.

The team should determine the current (organisational or project) performance gap by measuring internal performance and the best performance which form the baseline for comparison. Assessment of the current state and the best always focus on the expenditures caused by the primary influencing factors. Only if the performance of the best performer outweighs the internal performance, then its practice is worth benchmarking. After which, the findings can be summarised and documented. This documentation process includes projecting future performance

levels, which act as the basis for new practices performance evaluation. For more information on how to calculate internal and desired performance, refer to Vaziri [32].

5.1.4. *Gaining commitment to the needs of change*

As mentioned above, the findings are communicated to external partners and internal staff, indicating any actions for change to occur. Commitment and support from partnering organisations are crucial, as they are the sources for transferring knowledge and information. In addition, internal staff at both managerial and operational levels should appraise findings. Management committed to the COBAP should provide necessary resources and support for implementing new programmes or practices while employee commitment will accelerate the change process, since they are the ones who carry out the operational changes.

Since a COBAP process involves changes to the status quo, especially cultural change, internal staff who are familiar with the existing culture of practices may need time to adjust. The team should also encourage feedback in a two-way communication process. This can maximise understanding and minimise misinterpretation.

5.1.5. *Developing action plans*

The team should establish specific action plans, which are the functional goals to be achieved (e.g. improved design, advanced technical equipment, new quality control system or updated management skills). These plans should address issues such as required resources, legitimate accountability and a time frame for the change process. The action plans should also address those who are responsible for improvement, the areas are to be focused on, the activities and supporting functions (such as training and external consultants).

5.1.6. *Implementing actions and monitoring progress*

Changes at individual level are always related to behaviour and culture. For inducing desired behaviour or culture, training is a prerequisite. At project intervention level, workshops can be used to provide a place for commencing partnering relationships; through which new arrangements can be documented and executed. Any new paradigm approved by the partnering team to improve trust, teamwork, communication, understanding others' expectations and values and dedication to common goals intervenes in the normal running of individual organisations. It is necessary to note that support from top management is very important in implementing the paradigm.

If the links between the mission, objectives and action plans for the project and relationship are explicit and have less or even no resistance, the implementation of the action plans will be more efficient. Furthermore, monitoring during the change process can help resolve any conflicts that may emerge. However, it is not easy to determine who are appropriate for monitoring the process,

as they need to be trustworthy and familiar with the process they monitor. Relying on the wrong people may ruin the whole project or even destroy the whole company. For example, if a sub-contractor uses under-qualified concrete to construct an unsafe residential building, the property developer has to compensate the claimants (usually the buyers). When the developer cannot afford to pay that compensation, it may go bankrupt.

5.1.7. *Feedback to the implemented change*

The dynamic marketplace may change the projected gap or even reposition the leaders. Feedback from all those who are affected by the implementation of change should be treated carefully. Two-way communication is again encouraged in this stage. Feedback highlights those programmes, policies, procedures and practices to be restructured to meet the partnering vision, mission, values and goals.

5.1.8. *Achieving the superior performance*

Achieving a successful COBAP process may increase the chance of winning a bid, successful execution of a construction project and organisational growth. However, organisations should first ask whether the new practices are fully integrated into the processes. If the answer is negative, then there should be some problems that have not been solved. The team should provide solutions for those issues identified during the stages of implementation, monitoring and feedback to ensure the action plans can work effectively [32]. Until best practice has been attained, the team is said to be successful in the current COBAP project. Such leading performance includes the soft and hard outcomes stated in Table 1.

As we know that the mindset that the new established practices are really new is always challenged in this dynamic market, new leaders will create competition that surpasses the existing standards. The leadership position attained is only the entry ticket for another round of the business game. Therefore, true leadership results from a continuous concern for understanding customers needs, identifying better processes through which the construction projects are undertaken, and developing improvement activities that induce both incremental performance improvement and radical work restructuring. It emphasises superior customer satisfaction by considering customer values, trying to exceed the cost of creating the value and continually striving to reduce the cost or differentiate the benefits to offset a higher price.

The COBAP process is an effective management tool that can be used to improve organisational performance and competitiveness. It aims at pursuing continuous improvement, which requires the development of a collective learning climate. Such a continuous learning culture should become the norm rather than the exception. Some authors have referred this to the formation of a learning organisation [2,14,29].

6. Conclusion

This paper discusses a recently emerged topic — partnering in the construction industry. With the identification of the specific issues and problems, such as fragmented nature and adversarial relationships, in the construction industry, a partnering strategy is highly recommended. This paper then argues that for partnering to be effective, a co-operative benchmarking approach is needed. The establishment of a COBAP team and effective management of its process can lead to positive outcomes, such as mutual trust, long-term commitment, creativity, shared vision, problem solving ability, equity, cost effectiveness, customer satisfaction and continuous improvement. It is suggested that the implementation of the COBAP can be used as a mechanism for collective learning, which can sustain a competitive edge.

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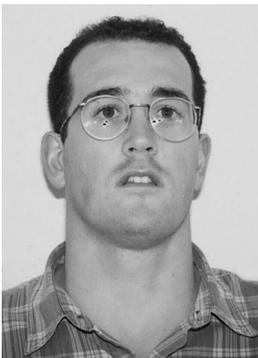


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