Title: Partnering on the Construction Project

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Abstract: Partnering has become the mutual cry of the owner and the contractor in the construction industry. A partnering workshop was held for all the members of the project team to jointly develop a partnering charter. Partnering requires that all the team members participate in the needed effort. Partnering offers many advantages to both the contractors and owners.

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I. EXECUTIVE SUMMARY

The last ten years have seen the construction industry change. The projects that used to be built on a handshake now have 100 pages of specifications and 50 drawings. With the addition of regulation and competition the available profits have been reduced. This competition has given rise to a litigious environment in which the owners are trying to push the risk onto the contractor and the contractor is looking for a way to develop a change in the project to increase the profits. The situation calls for drastic measures. A large percentage of the money that should be going into the infrastructure of our country is being spent in the courts. Time and money is being wasted while the owner and the contractor posture themselves for dispute.

Partnering has become the mutual cry of the owner and the contractor. The process starts with an invitation by one of the parties to enter into a partnering agreement. There must be a mutual agreement that both sides voluntarily participate in the partnering effort.

A partnering workshop is held where all the members of the project team jointly develop a partnering charter. This charter lays out the goals that have been mutually set. The charter becomes the project mission statement. The charter typically includes details on communication, feedback, individual roles, and dispute resolution.

The partnering bandwagon is starting to grow. The paper touches on several projects that either have been or are currently being built under a partnering agreement. With only a few exceptions the results from partnering have been excellent. Reduced cost, reduced time, improved safety, less paperwork, and no litigation are often the result.

Partnering does require that all the participants put forth the effort. All the members of the team must be open and honest in order to develop the trust that is needed for partnering to succeed.

Partnering offers an advantage to the contractors and owners who learn the techniques and agree to use the process. The time has come to move the construction process back to the construction site and out of the courtrooms.

obstacles. There are many stories of massive projects that were built on a handshake. You can bet that these projects did not have a set of specifications ten inches thick or a set of plans that have 500 drawings. The contractor was not asked to provide a bid lower than any of their peers and provide a bond and insurance that assumes all the liability on the project. As the demands on the contractor have accelerated the level of involvement by attorneys has also accelerated. Tighter specifications, lower profit margins, and greater risk have all contributed to the increase in litigation.

A few years ago mediation was offered as the means to eliminate lawsuits. Time has demonstrated that mediation and other alternative dispute resolution exercises, while much better than litigation, are still at a disadvantage as the dispute has taken shape and resolution is after the fact. What the industry needs is a system where the work is done right the first time and the dispute is avoided or resolved in a reasonable period of time.

The initial emergence of the partnering concept is credited to DuPont Engineers. DuPont decided that a new approach was needed to allow them to compete with foreign companies. They believed that some of the benefits of Total Quality could be incorporated into the construction project. Flour Daniel was the initial contractor to participate in DuPont's Partnering program in the 1980s. The U.S. Army Corp of Engineers picked up on the process in about 1988. The Naval Facilities Engineering Command and several other Federal and State organizations are moving to partnering at an ever increasing rate.

B. SELECT A PARTNER

An important step in the selection of a partner is to let everyone know that you are looking for a partner. This may require that special specification sections be included in the request for bid. Since the decision to enter into a partnering agreement must be voluntary, the specification can only serve as notice that the option is available. The notice also provides the bidders with the information that the process may be available to reduce the time and money lost to protracted decision making. The contractor who is willing and knowledgeable about partnering can reduce the risk included in the bid. This should provide an advantage in the bidding process.

By advertising the intent to partner, the chance that the successful bidder is willing to partner will be elevated. In the cases where a bid can be negotiated or the bidders selected, the willingness to partner can be used as a selection criteria. Both the owner and the contractor can come out ahead if partnering is used.

C. MUTUAL COMMITMENT

As the partnering process is introduced, all the participants must be committed to giving the effort needed to make the process work. The partnering process needs to involve all the critical individuals and companies in the process. The traditional owner, contractor, design engineer, and construction manager team has to be sure to include any other players that can influence the project. This may include the subcontractors, suppliers, local residents, elected officials, or any other interested party that can impact the project. Again it is critical that all the team members are committed to make the process work. Discussions with partnering participants identify a lack or change of commitment as the principle reason for setbacks to partnering.

D. PARTNERING WORKSHOP

The partnering workshop is extremely important, especially to firms that have not participated in partnering before. While it is possible to set up a partnering arrangement with simply a handshake, many have been, the odds for success are greatly improved if a partnering session is held. In some cases, especially on large projects, the meeting may be two or three days long and include meals or other mutual activities to encourage the development of team, trust and respect. On other projects, either

Every employee of all the firms involved must know and understand what their role in the partnering process is. While the charter may not detail every action that is to be done, the description must be adequate to allow each firm to identify responsibilities and assign then to specific individuals. As with any team situation the members must know what to expect and who to expect it from. On the other hand it is the responsibility of each member of the team to insure that their concerns are heard. If a participant does not speak up and force the issue to discussion and resolution the process will not work. Everyone must be heard and while everyone will not be happy with every decision, they must feel that they have had consideration.

5. FACILITATION

The issue of facilitation can be argued from both sides. Facilitation provides an independent third party to run the meetings and insure that everyone has an equal chance for input in the partnering process. The facilitator takes the responsibility of running the meeting off the team and allows them to concentrate on the process. In many cases the facilitator can also be a trainer and a scribe. The primary argument against using a facilitator is cost. On some projects it may be outside the budget to include a professional facilitator. One solution to this may be to look to a local professional organization to provide facilitation. Associated General Contractors is already offering this service in some parts of the country and as partnering becomes more popular there will most likely be other groups that offer the service. Having a facilitator is not critical to the process but it could have a positive impact on the success of the partnering workshop.

E. FINAL EVALUATION AND CELEBRATION

This step will not impact the project that is being completed but it will provide the information that is needed to implement partnering on the next project. The final evaluation is similar to the ongoing feedback as it can be accomplished in a number of ways. After the information has been gathered it may be a good idea to have a final meeting to discuss the findings and develop suggestions on what could have been done to make the process work better.

Finally there should be some celebration to mark the success of the partnering process. The celebration can be in the form of a topping out party with refreshments, a potluck at the site, a

IV. PARTNERING EXPERIENCES

While partnering has become the latest buzzword in the construction industry , the number of contractors who have participated in a project that used the partnering concepts is still limited. A number of private owners have used a partnering arrangement for several years. Recently a number of public owners have embraced partnering. The Army Corps of Engineers, particularly in the Northwest division has been a leader in moving towards partnering. The States of Oregon and Washington have used partnering on selected projects and the Naval Facilities Engineering Command used partnering on two projects in 1989, nine more in 1990, twenty in 1991, and thirty were scheduled for 1992. [8]

The information on the projects that are included in this paper came from several sources. A number of the projects have been written up in current industry publications. In some cases I have direct access to the projects and in several cases I interviewed the partnering participants and secured the information from them.

When this paper was first proposed the intent was to accumulate information on ten projects where partnering had been utilized. As the paper is being finalized it is apparent that information was discovered on nearly twice that number.

A. OLIVER LOCK AND DAM REPLACEMENT

This project consists of construction of a $110 million replacement lock and dam on the Black Warrior-Tombigbee Waterway at Tuscaloosa, Alabama. The new lock chamber will be 100 feet by 600 feet, with a 28 foot lift, and the dam will be 800 feet long and 45 feet high, located 2,800 feet downstream of the existing dam. The project required that the waterway be kept open except for a three week closure period when the operation was transferred from one lock to the other.

The Notice to Proceed for this contract was issued on April 1, 1988. A partnering clause was not included in the original bid documents but after bid opening the contractor, FRU-CON Construction Corporation, was approached with the concepts of partnering. They agreed to try the process and the initial workshop was held April 18-22, 1989.The initial meeting was attended by six top managers from FRU-CON and eight top managers for the Corps. The President of FRU-CON and the Mobile District Engineer emphasized Managements commitment by addressing the group

* controllable cost growth has been held to 3.3%, compared with a typical 10% over the life of a major construction project
* completion on schedule
* no lost-time injuries, compared with an industry-wide accident rate of 6.9.[7] [10] [15]

C. HATCHERY WELLS PROJECT

This project was to relocate the wells for the hatchery at Bonnevile Dam. This contract for $5 million was awarded to Morrison-Knudsen. While this project is not very large, the critical nature of the water supply to the hatchery convinced the contractor and the Corps that partnering was needed. A 1/2 day session was held between the contractor and the Corps. The following goals were set at that meeting;

* wells are developed to maximum volume, and with no contamination of the aquifer
* good communications at all levels; any non-routine letters will be shared first in draft form
* submittals reviewed and returned within two weeks
* operations and maintenance manuals submitted promptly
* project completion on-schedule and without litigation
* project cost growth less than 5%
* no lost-time accidents
* decision to construct the optional well will be made at the earliest possible date
* response to well screen designs will be prompt and joint working meetings will be held to discuss comments and secure approval

The project was completed one month early, in January of 1991. There were no lost time accidents. The project came in at 4.38% under budget, and returned a $72,000 value engineering savings on a $5 million project.[7] [18]

D. BONNEVILLE MAIN LOCK CONSTRUCTION

The main lock replacement project is a $140 million contract. The contractor is a joint venture between Kiewit Pacific Company and Al Johnson Construction Company. The contract was awarded in March of 1990. This project is not only large, it is also extremely complex. Construction in the area involved five major contractors and several smaller ones. The existing navigation lock had to be kept operational. The main line of the Union Pacific Railroad runs within 30 feet of the new lock at one point. The visitors and

and starting over again.

During the preconstruction phase a partnering exercise was undertaken by the Port of Portland, Baugh Construction Oregon Inc., the designers, and other involved parties. They attended a weekend retreat at which decision-making procedures were established and a partnering arrangement was worked out. Baugh has multiple clients on this project, the Port of Portland, the airlines, airport operations, airport maintenance, concessionaires, and the Federal Aviation Administration.

The project does not involve complex construction procedures but does require extensive coordination and scheduling. Baugh needs to constantly keep all the affected parties aware of what is happening on the project. During one typical month the main access road was relocated four times. Each relocation meant that everyone that uses the airport access had to be notified. During the preconstruction phase the team defined the phasing and created an elaborate flow chart that shows the critical activities. A computer print out shows exactly what needs to be accomplished each week. The principle pledge that Baugh gave to the rest of the team was assurance that no passenger or flight will suffer because of the construction. The partnering effort is continuing as each week the team meets to go over the activities that will take place in the upcoming week and to resolve any potential problems. After a year of construction, flights have been unaffected by the project. The present projections are that the project will finish 10 months early and $1.8 million under budget.[3]

F. TEST OPERATION CONTROL CENTER (CAPE CANAVERAL)

The Test Operation Control Center (TOCC) is a $17 million project involving the construction of a 136,000 square foot facility for monitoring and controlling all rocket launches at Cape Canaveral. The center contains an observation deck, utility building housing, an instrumentation area and a unique interior design to maximize the utility of the facility. The construction also included a complex heating, ventilating, and air conditioning system for environmental control which is critical to the $60 million worth of equipment that is installed in the building.

The TOCC was targeted for partnering during design. The Notice to Proceed was issued on February 9, 1989, and the first partnering workshop was held on February 27-28, 1989. Members of the partnering team included the contractor, the user, and the Corps. The project was turned over to the user on August 8, 1990. Weekly meetings were held to discuss the project progress. This kept the

H. I - 65 PAVING PROJECT

The I - 65 project involved a two and a half mile stretch of the interstate in downtown Indianapolis. 125,000 vehicles per day used this section of road. 180,000 ton of hot mix asphalt was put down in three lifts. The contractor began work on March 15, 1992 and finished September 15th, although the road was open to traffic on August 20th.

The State of Indiana set up a partnering committee that consisted of the State Department of Transportation, the Asphalt Institute, and the Asphalt Pavement Association of Indiana. Together this team reviewed the design , drainage and construction methodologies to provide the highest quality project in a reasonable time and cost.

When Contractor's United Inc. was the low bidder, the State approached them about extending the partnering. The contractor agreed and a partnering meeting was held. The team worked well together and the project was completed with a minimum of problems. The I - 65 project was selected to receive the highest award at the National Asphalt Paving Association meeting this year. [13]

I. DURHAM WASTEWATER TREATMENT PLANT

The Unified Sewage Agency of Washington County operates the Durham facility that provides treatment for wastewater before it is discharged to the Tualatin River. The Department of Environmental Quality for the State of Oregon set standards for the effluent that is discharged into the River. These standards required that the Durham plant be upgraded to meet the specified limits. In August of 1991 the Unified Sewage Agency awarded a contract for $31.5 million to Wildish Building Company. The project included the addition of a 130 foot diameter primary clarifier, a 700,000 gallon digested sludge holding tank, three octagonal anaerobic digesters, and a 17,000 square foot chemical handling facility. When the facility is completed later this year it will provide for tertiary and chemical treatment. The plant will operate at a level higher than 98 percent of the treatment plants in the nation.

The largest challenge for Wildish was to keep the plant operational and maintain the existing discharge standards for the plant. To accomplish this the construction team was set up. The team consisted of the Agency, Wildish, and the design engineer, HDR.

proposal is being incorporated into the project. There have been no lost time injuries on the project and there are no pending disputes.[18]

L. DRYDOCK, PORTSMOUTH, N.H.

A $38 million drydock is also being built under a partnering agreement between the Naval Facilities Engineering Command and the George Hyman Construction Company. Major subcontractors were included in the partnering sessions which included a structured forum for the necessary project coordination. The partnering session gave rise to the trust and teamwork that is absolutely necessary when modernizing a drydock for critical submarine refueling overhauls. [5]

M. NATURAL RESOURCES BUILDING, OLYMPIA, WA.

The Natural Resources building is a $73 Million project that will house the State of Washington Departments of Agriculture, Fisheries, and Natural Resources.

The partnering process on this project was undertaken by the owner, The Washington Department of General Administration, and the contractor, Hensel-Phelps Construction Company. About seven months into the project the number of pending dispute items had built to a critical level. Issues just seemed to lie around, unresolved. The department of general administration suggested that the team try a formalized version of partnering.

The contractor and owner met six times as a group and used partnering techniques to resolve outstanding problems. A facilitator was then brought in for a formal partnering workshop. The charter/mission statement, signed by the designer, contractor, project management, and owner management teams, includes goals such as avoiding litigation or arbitration; maintaining a high level of trust, integrity, and professionalism; and completing the project within budget.

Partnering has changed the atmosphere on the project. Problems still come up but the progressive dispute resolution process provides solutions. The items are resolved at the lowest level possible. If the first level personnel cannot resolve the issue, it is pushed up the ladder to the next level, and so on until the issue is resolved. Before the partnering effort was started the project was in jeopardy of being a year late and burdened with

The project is slated for completion in October of 1995. While the contract is just under way the general feeling among the team is that everyone is working to accomplish the project safely, on time, on budget, and with no litigation. The State is watching this project closely and intends to propose partnering on several of the projects they have to be bid this year. The results to date have been very encouraging.[12]

S. HOWARD FRANKLIN BRIDGE

This project is for the construction of the Howard Franklin Bridge in Tampa, Florida. This project is the first attempt at partnering by the Florida Department of Transportation. The partnering effort is somewhat unique as the partnering session was not held until three months after the project had started. The partnering session included the Florida Department of Transportation, Gilbert Southern Corporation, the contractor, Post, Buckley, Schuh, & Jerigan Inc., Construction engineer, and was facilitated by Black & Boyde.

The three entities and their subcontractors developed and signed a partnering agreement. The agreement included the following objectives;

* Completing the project within budget
* Limiting contract growth to 1%
* Providing a safe working environment for employees and the public
* Streamlining decision making
* Solving Problems at the lowest possible level

One notable effect of partnering on the project has been the reduction of paperwork. In the three months prior to the partnering session 77 letters were written between the parties. In the nine months after the partnering session only 55 were written. This represents a reduction of 74%. [12]

T. SETBACKS

Like any new process, partnering has had its skeptics. While the projects that are successful are held up as examples the projects that have failed are often swept under the carpet and forgotten. In my research I ran across two incidents where partnering failed. An analogy that has been offered for partnering is a marriage. By the same analogy a failed partnering effort resembles a divorce.

V. CONCLUSIONS AND RECOMMENDATIONS

In order for partnering to be successful there needs to be a mutual commitment and a mutual need. The participants in partnering have to be willing to give up the old paradigms and approach the project with an open mind. The sooner the decision to try to implement partnering the better the odds are for success. The research for this paper has shown that there are five key ingredients to partnering that must be present for the effort to succeed.

A. TOP LEVEL SUPPORT

The information coming out of the successful partnerships identifies the top management support as the most critical need for partnering. Almost all the participants felt that the lack of management support would kill the process.

B. VOLUNTARY PARTICIPATION

There are several examples of projects where partnering was dictated by one side or the other. In virtually every case the partnering effort has failed.

C. PARTNERING SESSION/CHARTER

The participants interviewed often identified situations where the charter and the partnering session were used to set the project back on track. Companies have worked to meet a mission statement. The project charter serves the same purpose on the project.

D. COMMUNICATION & FEEDBACK

The success of a partnering commitment is subject to communication. There cannot be any barriers to communications between the parties. This allows all the parties to avoid the case preparation paperwork that has been so prevalent in the past.

Feedback on the process and how the participants perceive partnering to work is also very important. To encourage the use of partnering, the participation must be reinforced by feedback and recognition. The most difficult issue to resolve is one that only one person knows about.

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