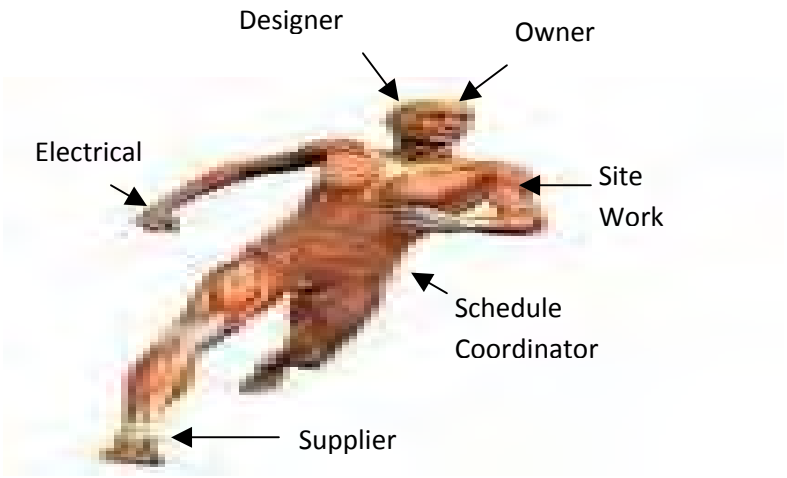
COLLABORATION

THE WELL-OILED MACHINE...RUN TO WIN!

A successful construction project should run as a well-oiled machine, where all of the functions are synchronized and meshed together. Let us imagine the construction project as a racer, one that is well-trained and fit for the race.



Ready for the race!

Or maybe assume it's a Sumo Wrestler on the starting blocks?

Maybe I'm in the wrong game!

Who has a better chance of winning the gold?

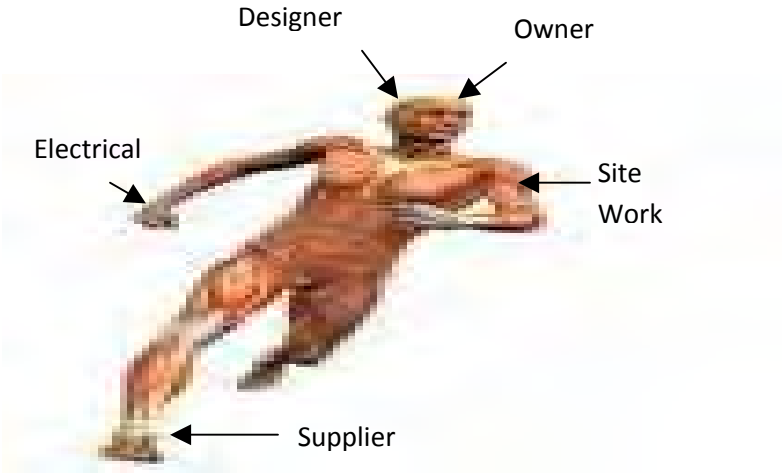
Now, let us imagine the racer falling off the starting blocks.

Late Start.

And, what would happen if someone, perhaps the owner, put up obstacles ahead of the racer as they round the first quarter-mile mark?

With friends like that, who needs enemies?

And let us imagine that the various arms, limbs and organs of the racer begin to dissipate or fall off as he runs. For example, the Schedule Coordinator "falls off" or doesn't do his job.



Now, let us imagine that the runner in the next lane came out off the blocks just at the sound of the gun, remained intact and had no spikes in front of him on the track.

Run to WIN!

The goal of collaboration and partnering in the construction industry is to produce the “racer” -- one who is qualified to run the race as opposed to the Sumo wrestler, an example of the wrong person in the wrong place, as we often see in construction companies and their projects. Collaboration...all parts working in synchronization without interferences, is a seamless process which would thrill the Great Coach Vince Lombardi who said, "In the arena there are a lot of racers on the track. Only one will win. **Run to win**!” This monograph is about how to "run to win” through a collaborative approach **inside the company** or in **multi-party arrangements** in building a capital project.

I believe it was Peter Drucker who said, “Organization follows concept.” And so it is with a collaborative approach to running a company or running a project. What is the concept? For purposes of this monograph, the concept is simply stated: *Success is a function of a clear mission understood and shared by qualified participants with like principles and values, committed to working together to achieve the common goals which bind them together. Success is a product of Purpose, People and Process…adding value through a systematic collective approach to management.*

And at the outset, it is stressed that success does not come easy. It is not a function of slogans or pep talks. As great a motivational speaker as Coach

Vince Lombardi was, his Green Bay Packers did not win championships and Super Bowls because of a "Win One for the Gipper" speech in the locker room at half time. The team won because Lombardi and Coach Knure Ruckue had strong game plans, excellent players, discipline and hard work, and the commitment to be the best they could be. When things got tough on the field, the players reached back and grabbed a bit more courage, a bit more perseverance, a bit more creativity, and they pulled out a victory. **The center core of great leaders, athletic and business, is the development of a culture of highly disciplined, well-qualified players who "run to win."**

Sum Plus Arithmetic: Maslow suggested there are three development stages of a person: dependence, independence and interdependence. The latter being the most advanced stage of both maturity and good sense because people who are interdependent are working with others to optimize solutions to achieve goals. I call it sum plus arithmetic, meaning that 1 + 1 = 3; another way of saying that two heads are better than one. This is the fundamental basis of partnering or collaboration.

Unity of Purpose: The Japanese practice this concept, but they begin with 1 + 1 = 1, meaning unity. To have 1 + 1 = 3, there must be unity of purpose, unity of goals, and a sincere and even selfish commitment to work with others to achieve those goals. It is acceptable to be selfish in this regard, because the selfish person realizes that to get the desired result team members must work together to develop the best game plan, to continue to improve the game plan, and to share in risks and solutions.

The Definition of Collaboration: Collaboration is just another word for interdependence, and both require *working together* to achieve the best outcome for a project. In this monograph, we will discuss the distinct phases of collaboration.

- **Structural**: Structural refers to the *delivery system* which is used. The classical design-bid-build is most vulnerable to adversarial relations, but worse, it is not structured to bring together all the information, experience and ideas which can improve the design and constructability of the project. Structural collaboration is aimed at doing just that: bringing together qualified team members who can "kick around" the most effective design, create the most effective supply chain management, reduce waste, improve decision-making, and reduce cost and schedule. As shall be seen, *strategic alliances* fall in the realm of delivery systems and the Japanese model will be discussed.

- **In-house Collaboration**: The contractor must have a management system which ensures collaboration between the home office and the field personnel. The owner must have a system which ensures collaboration between the various internal organizations. For example, a hospital administrator responsible for budgets, doctors and nurses who demand the latest medical devices no matter how late in the construction phase it comes out and how much havoc it causes, or the O&M personnel who must keep everything functioning at the lowest life-cycle cost. The architect collaborates with the structural engineer and MEP disciplines as well as the geotechnical engineer and government building authorities. And so it goes. In owner's bureaucracies, decision-making may be like

an elephant running through a swamp because of the number of internal entities which must "buy off" on an issue before it can be authorized.

Project Management Systems: Collaboration is an essential element of project management. Commissioning during design phase, the use of Lean Management, effective scheduling such as Time Impact Analysis, the concept of Reliable Promises, the three step (P-I-F) approach to quality, and the 25/10 concept are all systems aimed at *working together* to produce a successful project, one in which all parties achieve reasonable goals.

- **The Community**. Everyone has an obligation to collaborate with the community.

Timing is everything: Go for the "*low-hanging" fruit.* Assume that you are the owner of a large construction project, sitting at counsel's table in a courthouse, listening to arguments from the contractor's counsel on why you should pay for its $1 million overrun. Rocket science says it is a little late for team building. The earlier the team is established, the greater the results. And the sooner that happens, multi-disciplined team members can be brought together to share information and creative ideas, and commit to reaching common objectives, the better. The *low-hanging fruit is the delivery system and the timing of the delivery system.* Partnering, to be discussed later, certainly has some beneficial results. But partnering in a design-bid-build

world begins after the construction documents are completed, laden with land mines of ambiguities and an owner with a tight budget, and a bunch of low bidder contractors. Now, tell those folks to have a love fest. It can be done and is done, but the cultural challenges are significant. So, the low-hanging fruit is the structural or delivery system and the timing of its implementation. Remember the doctrine of *prominent outcome?* If you had to drive to an unfamiliar location after having looked at a map, the probable outcome is that you will arrive at your destination within a reasonable time. If you were to ask the gas station attendant in Charleston, South Carolina how to get to Mario's in New York City, the probably outcome may be that you could end up in Detroit. The probable outcome of using the most effective delivery system is project success for all the parties.

- **Integrated Project Delivery Systems**: For the owner, it would seem rather fundamental that gathering the team at the beginning of the project, at the very least when the design phase is funded, is the time to bring in designers, contractors and suppliers to develop the most effective design and construction project. A value engineering change after a construction project has been awarded sometimes actually adds costs and burdens the schedule, whereas thinking out more cost-effective approaches during the design phase avoids schedule impact issues. Using BIM (Building Information Modeling) is form fit for the earliest phase of design; commissioning agents will earn their salt during design phase. Supply change management after contract is awarded is

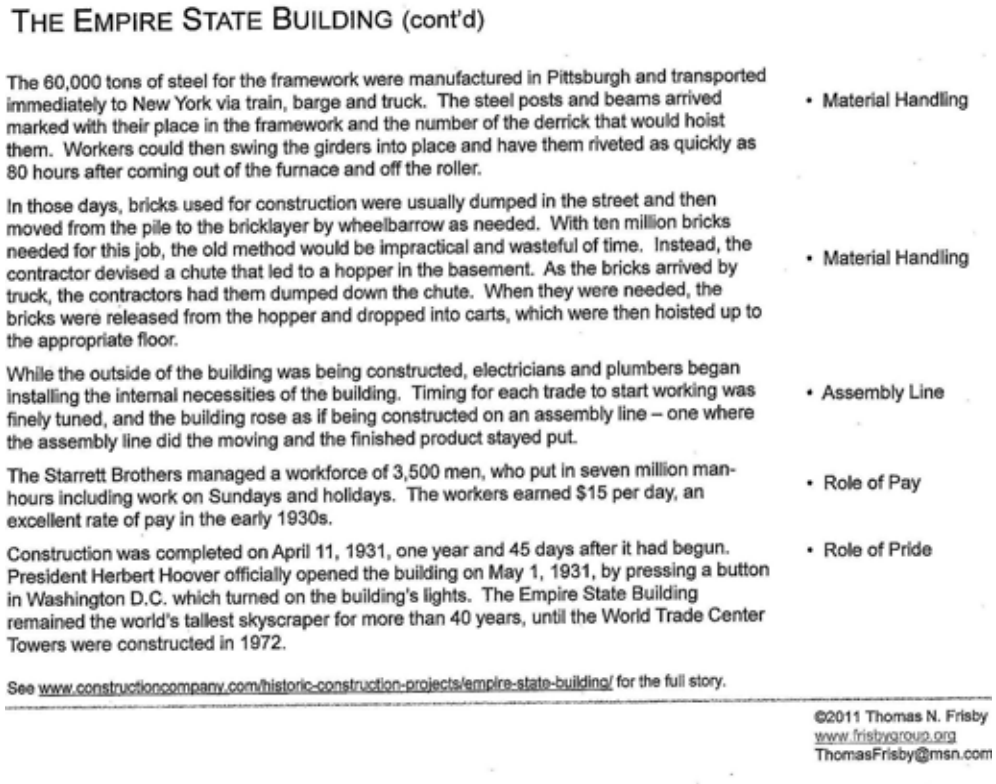
simply a process of angry telephone calls by expediters to the supplier, instead of using the knowledge of the manufacturer to select the most effective equipment and assure its timely delivery to the project. **(The National Research Council study on improvement in the construction industry recommends "widespread deployment and use of interoperable technology applications, also called Building Information Modeling.")**

- So, the delivery process itself can and should be a collaborative process where all the players are working together to develop both a design and procurement game plan which is win/win for everyone. The benefits of early collaboration are diminished or lost altogether the later in the delivery system all the players are brought together. This is because the greatest advantage of integrated delivery systems and design/build is a collaboration regarding design and the structure, as opposed to a collaboration of relationships. As shall be seen, when partnering takes place on a design-bid-build project, the emphasis is on relationships, working together in the decision making process and solving problems which arise during construction. The owner benefits by reduced claims and improved schedule, but the greatest benefit will be to the contractors and not the owner. The greatest benefit to the owner in collaboration is the input of all parties in developing the most effective cost and schedule effective design

with the best and most appropriate delivery system to satisfy capital requirements. There are tools that are advantageous: BIM, CAD, commissioning, to name a few. However, the CPM is also a great tool on paper, but its success has been less than the scheduling consultants would have you believe. For the electronic tool to be effective, the players with boots on the ground must understand them, commit to effectively use them, recognize what collaborative efforts between the team members can achieve.

THE SCHEDULE
THE EMPIRE STATE BUILDING

Is it possible? A 1453 foot, 103 story structure, constructed in 13+ months…without a CPM or PrimaVera schedule, or even a scheduling consultant? What, not a computer in sight?	• 13 months no computer
So, software and computers don't schedule buildings – **People** do! The contractor, Starrett Brothers, realized that alchemy of **creativity** and **experience** would do what software doesn't. So they did it the old fashioned way – use your head.	• "Use your Head" Pre- Planning
Starret Brothers didn't own anything that would be useful on the project decided to design and purchase all new, custom pieces and sell it (and credit the investors with the difference) when the project was complete. This provided the most productive equipment for the project and provided a potential cost savings.	• Creativity • Shared Risk
They determined that more than sixty different types of trade people would be required and that most supplies would need to be ordered to specification because the immense job scope. The supplies had to be made at the plants in as close to finished state as possible, to minimize preparatory work needed at the site. The companies they hired had to be dependable, able to provide quality work, and willing to adhere to the allotted timetable. Time had to be scheduled nearly to the minute. The schedule dictated that each section of the building process overlapped – not a moment was to be wasted.	• Supply Chain Management • Production Flow • Quality Commitment
This was the first commercial construction project to employ the technique of fast-track construction.	• Fast Track
Excavation began in January 1930 before the demolition of the site's previous occupant, was complete, having pioneered concurrent demolition and foundation-laying.	• Fast Track
Two months later, in March 1930 the steel skeleton began. The frame rose at the rate of four and a half stories per week, or more than a story a day.	• Frame Cycle • 4.5 stores per week



THE EMPIRE STATE BUILDING (cont'd)

The 60,000 tons of steel for the framework were manufactured in Pittsburgh and transported immediately to New York via train, barge and truck. The steel posts and beams arrived marked with their place in the framework and the number of the derrick that would hoist them. Workers could then swing the girders into place and have them riveted as quickly as 80 hours after coming out of the furnace and off the roller.

- Material Handling

In those days, bricks used for construction were usually dumped in the street and then moved from the pile to the bricklayer by wheelbarrow as needed. With ten million bricks needed for this job, the old method would be impractical and wasteful of time. Instead, the contractor devised a chute that led to a hopper in the basement. As the bricks arrived by truck, the contractors had them dumped down the chute. When they were needed, the bricks were released from the hopper and dropped into carts, which were then hoisted up to the appropriate floor.

- Material Handling

While the outside of the building was being constructed, electricians and plumbers began installing the internal necessities of the building. Timing for each trade to start working was finely tuned, and the building rose as if being constructed on an assembly line – one where the assembly line did the moving and the finished product stayed put.

- Assembly Line

The Starrett Brothers managed a workforce of 3,500 men, who put in seven million man-hours including work on Sundays and holidays. The workers earned $15 per day, an excellent rate of pay in the early 1930s.

- Role of Pay

Construction was completed on April 11, 1931, one year and 45 days after it had begun. President Herbert Hoover officially opened the building on May 1, 1931, by pressing a button in Washington D.C. which turned on the building's lights. The Empire State Building remained the world's tallest skyscraper for more than 40 years, until the World Trade Center Towers were constructed in 1972.

- Role of Pride

See www.constructioncompany.com/historic-construction-projects/empire-state-building/ for the full story.

- Two-step design/build is the "fruit" just above the Integrated Procurement Delivery System. Again, it is an opportunity for competent players to figure out, or collaborate, how best to design and construct the project.

- **The Use of Technology**: Obviously, properly used, the Building Information Modeling (BIM) is a tool that invites the various disciplines

to "play with" the three-dimensional toy, to investigate and evaluate the best designs, the constructability and value engineering issues. It is an effective tool for designers and contractors, but also suppliers so that supply chain management can begin early. Commissioning agents should be invited to participate in the design phase as well as the construction phase, for they can offer significant input as to how best to build a project.

- **Supply Chain Management:** There are many components to the phrase "supply chain management." For example, in hospital construction, a major contractor might work with the owner and the suppliers to review all equipment packages, order them, and have them ready for the onset of construction. Another component is the use of prefabrication. Again, the **NRC,** in its recommendations for improvement of the construction industry, includes the following: **"Greater use of prefabrication, preassembly, modularization and off-site fabrication techniques and processes."** Last December, for example, you may have heard that the Chinese erected a 38-story building in about a month!

Strategic Alliances: Construction projects are akin to celebrity marriages: they don't often last long. The construction parties may be strangers before the project, get together for the project's duration, take risks, and then when the project is completed, they may not see each other again. That is the nature of the industry. However, there is a slight trend here, modeled largely after the Japanese concept of strategic alliances, to continue relationships that

have worked well.

A general contractor from Florida may do government work over the Southeast. Coming into South Carolina, he may not be familiar with the key subcontractors in the area. But, he has worked with a very strong masonry subcontractor, an excellent drywall contractor, and an above-average electrical contractor in his home area. So, he works out a strategic alliance. "Hey, guys. If you continue to do good work, give me fair prices, we can stay together as my company gets jobs around the region." Thus, there is collaboration in marketing, in job acquisition and, because the glue that binds them is above-average job performance, collaboration in working together to effectively schedule and manage the project as well.

This is the framework of the strategic alliance or the Long-Term Relationship, as it may be called. It is another example of a structural collaborative effort which is more consistent with the Japanese culture than our more adversarial one.

Small business contractors have, in effect, strategic alliances or teamwork relationships with majority contractors, whereby the majority contractor may mentor or coach the small contractor. This is also a collaborative approach to contracting.

Both models have success stories. However, the jury is out on both. For the latter to work, the general contractor must be truly committed to his coaching responsibilities; the minority contractor must be committed to learning to be a good contractor. As to the former (strategic alliances), there is not enough data to determine that these models are producing bottom-line results for the contractors involved. They are mentioned because they are examples of collaboration in which two separate companies work together in unison to capture markets in a very competitive environment and to perform with minimum disruption and adversarialness.

In the international market, opportunities for American companies increase when they can develop strategic alliances with other international design and construction companies.

In Summary: This is the equation for "low hanging" fruit: Commitment by the owner to organize a true team, a collaborative approach, plus experienced and capable team members representing designers, contractors, key suppliers, plus clear objectives, PLUS technological tools which facilitate (not substitute) for their technical skills . . .starting as soon as the owner decides on the new capital project.

Figure 1: Opportunity to Affect Cost Over Time...

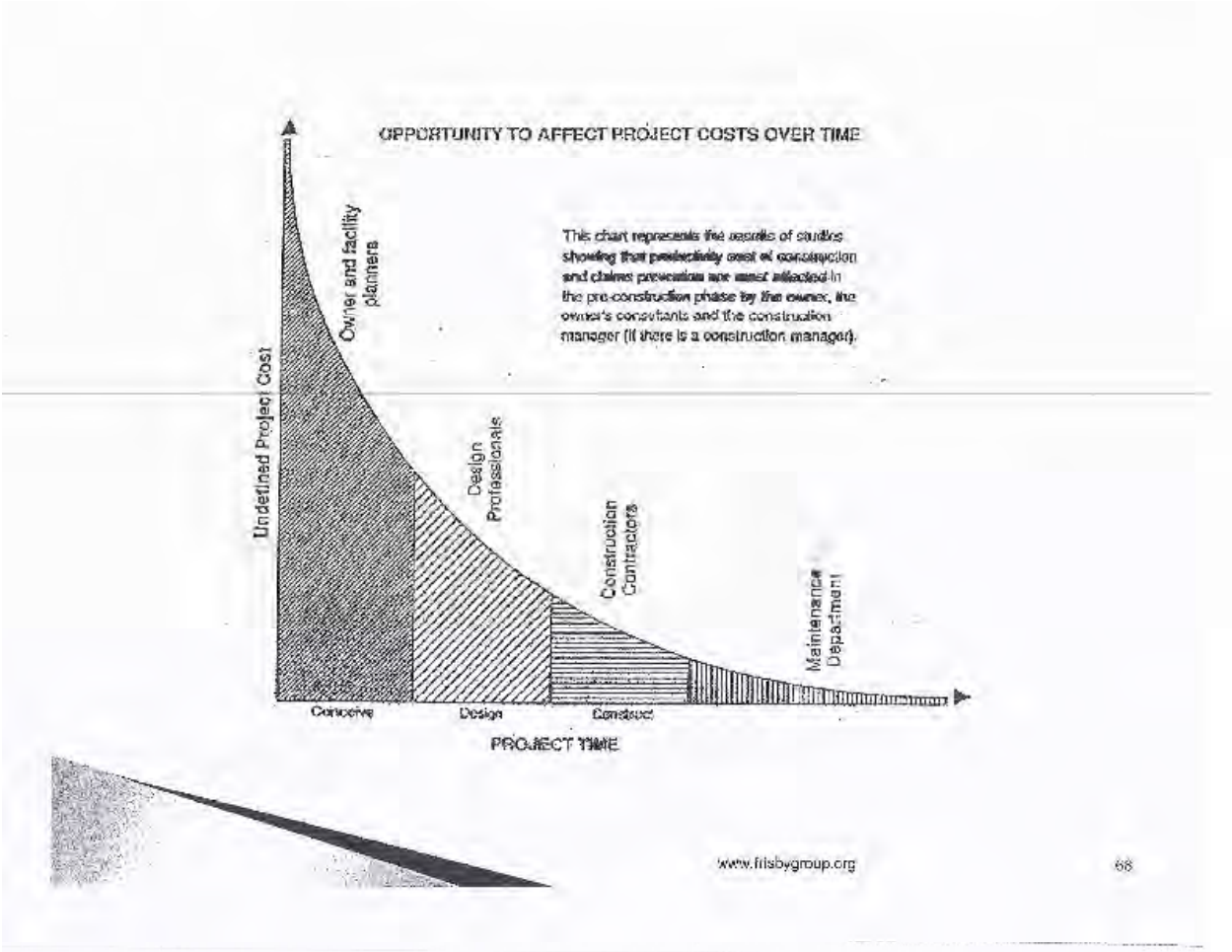


Figure 2: Cost Growth Attributed To and Controlled At...

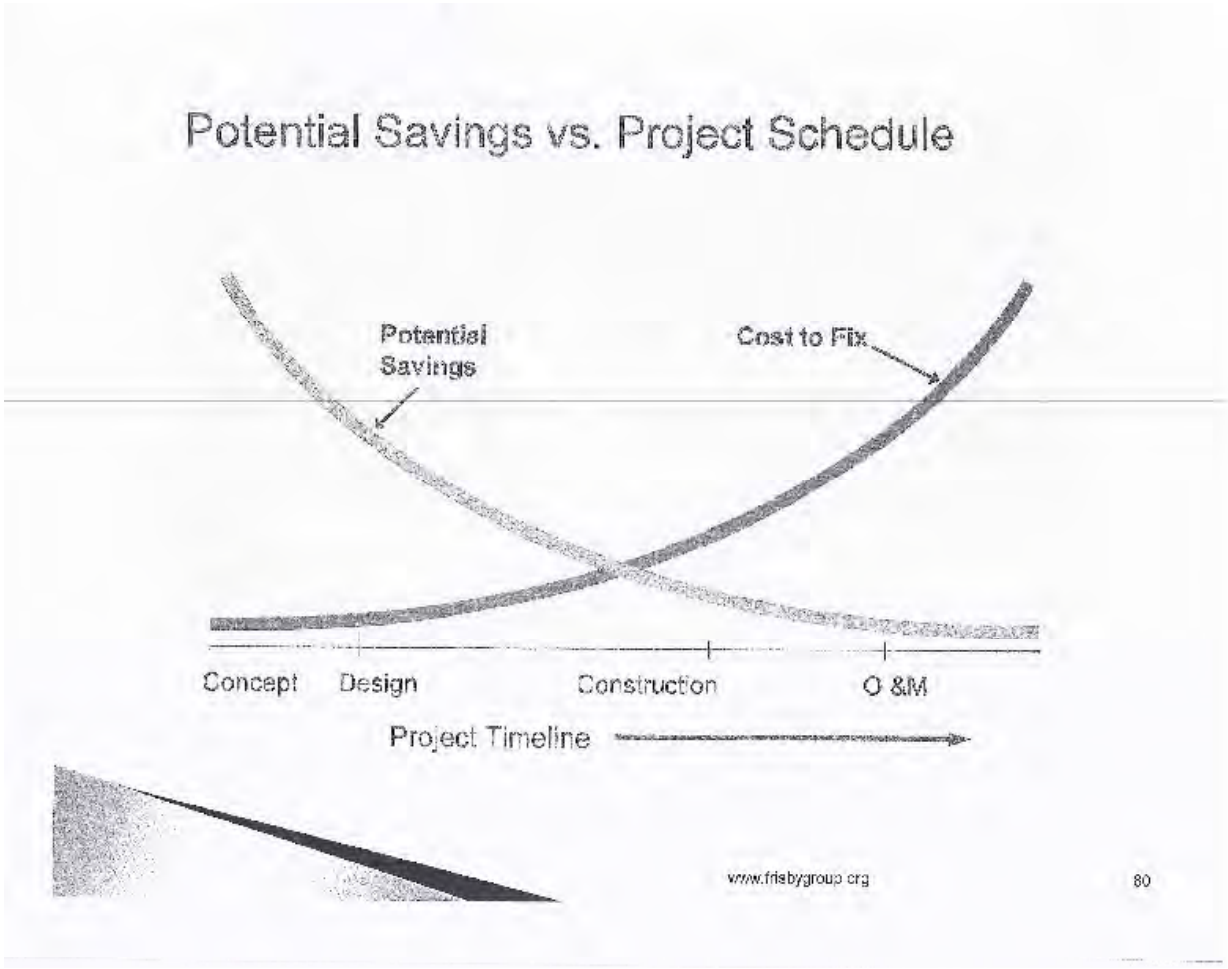
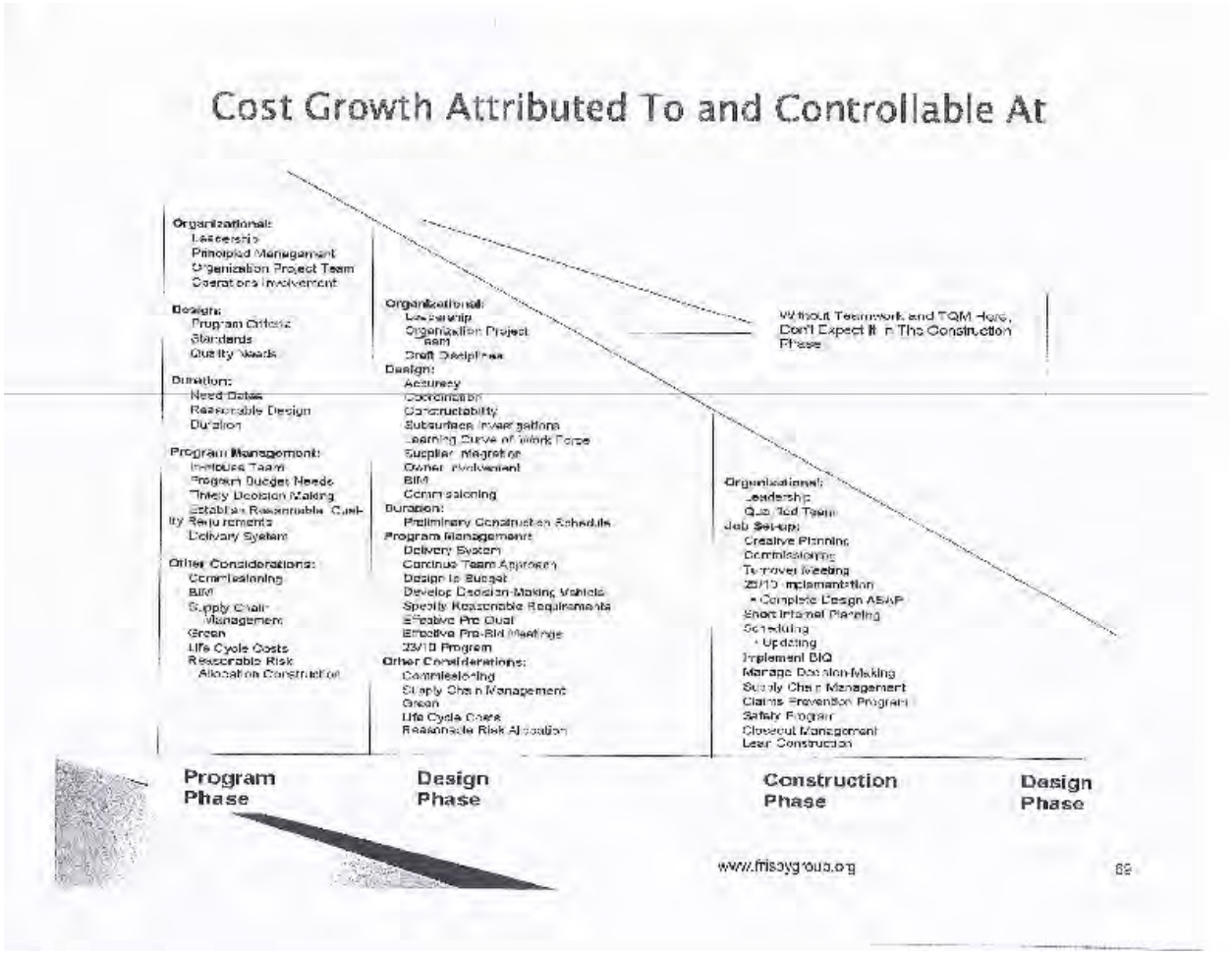


Figure 3: Potential Savings vs Project Schedule...



COLLABORATON INTRA COMPANY

- The "one" in one plus one equals two. As indicated, one plus one can equal three if indeed there is one plus one which equals one (or unity). However, in this calculus, we begin with a "one." Teams are made up of a bunch of "ones," so the first emphasis must be on the development of the "one" or the individual. In Total Quality Management, the concept of "empowerment" is emphasized, and in Lean Management it is as well, that is getting decisions down to the lowest level. However, the Achilles Heel in that calculus is too often that "enablement" fails to precede "empowerment." Individuals must be provided the opportunity to learn, to have experiences which give them the ability to perform at the desired level. Football fans, young and old, may have heard of the famous Ice Bowl played between the Green Bay Packers and Dallas Cowboys in 1967. On what would be the Packer's last possession in overtime, with ice on the field became so thick you could skate on it. Packers' quarterback Bart Starr consulted with Coach Vince Lombardi, and the decision was made to run a play at the goal line. The play was a 31-wedge, whereas the running back would take the ball from Starr and run off the gap between the center and the right guard, hoping not to slip on the ice, while being able to lunge foward for the game winning touchdown. Instead, in the last moment after the snap, without anyone on his team knowing, Starr maintained possession of the ball and leapt across his line to score the winning and epic touchdown! The point is

that Starr was empowered to call the plays and take the risks, but only because he was "enabled" because of years of coaching and experience. So with team building and collaboration in a company, there must be a commitment to have the best possible people in the right jobs, and to provide continuous training for everyone. **Teams are a bunch of ones and the weakest one can bring down the entire team.** Therefore, team building, or collaboration, begins with this equation:

Selection of the personnel with the appropriate **values** +

Selection of the personnel with appropriate **skills** and **potential** +

Selection of the personnel with the right **attitudes** +

Providing **continuous training** opportunities for them +

Experience which tests their abilities +

Evaluations and feedback to assure that their potential is being reached +

Rewards commensurate with performance +

A **mechanism** for **conflict resolution**

Incidentally, the same criteria apply to the owner in team selection or the general contractor who is putting together his subcontractor team. In this modern era, it is no longer acceptable or tolerable to hear a general contractor say, “It’s not my fault. Blame the subcontractor! I could just never rely on that guy!” Well, Mister General Contractor, YOU ARE that subcontractor! And, you

are just as responsible for his work as if he were on your payroll. Metaphysically you are ONE. **So, you better get good ones on the team!**

- **Workplace Environment**: People do not work in a vacuum. The second ingredient of team building and collaboration within the company is the workplace environment (See enclosure entitled Workplace Environment.) Everything boils down to the following: Is the workplace (home office or project site) one where the employee feels:
    - Respect?
    - Sense of Security?
    - Pride in the company; pride in the project?
    - Recognition?
    - That he is listened to?
    - Part of the company; part of the family?
    - That standards are high for both himself and the company?
    - That those standards are being continuously met?

If so, then the opportunity for real collaboration among the employees exists. If not, opportunity to crab about the company at happy hour exists.

- **Leadership**: The next element of effective collaboration in a company is leadership. It is leadership which provides the criteria for selection of

personnel, plans for continuous training and the creativity to make this a preferential one to work for, a company where people will want to work over other employers in the area. Real leadership can be compared to an echo. Top management sends out the message that it cares for its people, that it listens to its people, and that it has very high standards and is customer obsessed. The echo back is from the employees who are not afraid to make suggestions and give input, who feel pride, and who want to work in a manner that contributes to the company's reputation for outstanding performance. Real leadership has very high standards of performance while, at the same time, accepts that sometimes innovation may result in unfavorable results. Such performance is not punished. **It is an *all for one and one for all company*.**

When I was young, I would go to see the tents being erected when the circus came to town. Once in a while, one of the workmen would bite off more than he could chew and he could not hold on to a rope or otherwise was in trouble. He would yell out, *"Hey, Rube."* This was his SOS, that he needed help and, sure enough, several other workmen would come running to give him a hand. Collaboration in a company exists in a "*Hey Rube"* company, instead of a "Damn You, Rube" company where you might make a mistake while experimenting with a new idea or technology. This is what can create unity; extending ourselves to others in the company.

- In some companies, there is the "**Assistant For**" concept. The project manager is the “assistant for” the field operations that assists it in getting timely information and resources to do the job. The superintendent is the “assistant for” the project manager, providing timely data and enabling him to perform scheduling updates and written notifications to protect against contract variances. Accounting is the “assistant for” the project team by helping get the invoices out on a timely basis and making timely vendor payments so that material is never held up because of delinquent payments.

- There is always a *one* ***company*** **culture**, a culture that is practiced. There is never Home Office and Field Office. There is ONE office. Estimating personnel visit jobs to see how the labor estimate is holding up, and field personnel visit estimating to provide input on labor productivity. Field personnel are sometimes invited to CAD and shop operations to offer their input on how things can go better, and CAD operators and shop foremen visit the field to see how well their product is performing for the field staff.

- **Sharing**: Companies that have **Best Practices** programs (usually comprised of field personnel who are committed to assuring that they are doing the most effective job possible and are looking for better ways to improve the flow of work, quality, and schedule) see significant results in labor productivity because when one job discovers a better way and it is tested to determine this is truly

effective, then immediately this technique is transmitted to all the other field personnel. And when one foreman or superintendent has a lull on the job that he is not presently using, instead of hoarding, he lets the others know of its availability. Interdependence, helping others. That is the key of a great company at every level.

- **Decision Thinking**: I believe in a **democratic dictatorship**. By this I mean that I feel personnel to be able to give input on company or project operations, but at some point in time, a decision must be made. I have watched Japanese crews who culturally practice the concept of *decision-thinking.* Before an operation begins, the foreman gathers his crew around, tells them the task, goes over the plans, and then asks for input from the members of the crew as to how they see the job being done. That way, there is a real sense of ownership in the task; everyone has had an opportunity to speak his peace. But then, when the discussion is over, the foreman has the last word and it is Gospel. There are so many opportunities for decision-thinking in our companies and on our projects. For example, the three-step quality program (Preparatory – Interim – Final) provides a mechanism for the crew to get together before the beginning of a new task, go through the plans and specifications, discuss how best to perform the task, discuss material-handling issues, and figure out what is needed from the home office. Then the decision must be made and get on with it. Duke Energy, on its Bad Creek Pump Storage Project in

South Carolina, used this technique in constructing the underground power plant. Crews would get together several weeks in advance of a new work operation and discuss the plan for performing the work, identifying equipment and material needed, establish durations and quality requirements. The concept which was called a *compact,* because it was in effect an agreement by all the parties (reliable promises, as we shall see) that turned the project around with stunning results.

- **Process.** It takes leadership, plus the right people continuously trained in a workplace environment, which inspires the personnel to fulfill their potential and about which to be proud. And then it takes **game plans**, processes that provide **GSP directions** for everyone knowing the right thing to do, and then assuring that they do it. Everything in a construction company follows a flow; a construction project is an assembly line of various activities that are tied together in an amazingly synchronized manner. And it is so logical. Perhaps that is why the schedule is called a *logic diagram.* Processes are part of the framework of a company that knows how to work together, and walks the walk. Processes tied the company operations together by letting everyone know what is to be done, what group is to do it, and, at the same time, providing a tool for measuring performance and for getting personnel input on how to better that performance.

But it is a strange thing about company processes and procedures. I have been around a lot of companies and have never seen a procedure build a job or

produce an estimate. The same as I have never seen a schedule install a spread footing. Nor a safety manual shores a trench. Paper doesn't do that. When you get into your car and set your GPS to a given destination, that electronic feature does not drive you to where you are going. YOU do the driving. **Leadership provides the GPS or the guidance systems for the personnel, but each of the personnel takes responsibility for driving and getting to the destination on time without a dent in the car.** And on modern GPS systems, if the driver of the car does not follow the direction being given, a voice tells the driver that he has overshot the turnoff and in companies a control mechanism is also required to correct the path of the driver when he is straying off course. But there needs also to be an opportunity for the driver to say, "Hey, I have found a short cut. Let me tell you about it." And, for that short cut to be evaluated and if it is indeed a better way, the company GPS systems need to be modified accordingly.

Processes are essential for company personnel to know what to do, for everyone to know what to do. But they don't do it . . . people do. So, when I say that processes are important, they are ONLY IF they are carefully thought through, if the personnel who will implement them have training on them, if those personnel have the opportunity to provide input on how the processes can become more effective, if there is a system to assure that the processes are being followed and there is a process for evaluating their effectiveness. This takes . . . yeah; guess . . . it takes LEADERSHIP at the top throughout the entire organization. It takes COMMITMENT throughout the entire organization.

Procedures without training, execution, monitoring and measurement are wasted paper. They are fill for the local trash dump or fuel for a biomass plant to create energy. They have no other value. When I am in a company and the president says:

- "We didn't keep very good records on this project." Or
- "We never really had a schedule on the job" Or
- "I guess we didn't give written notice like we should have" Or
- "I think we have a lot of labor coding problems."

I can look around and generally find a procedure that covers all these bases. The procedure is not missing. *Leadership is missing.* I almost always can find a three ring binder with all the procedures necessary to run any project. It is rare that I find that three ring binder that is free of dust and coffee stains on the paper where its users have been thumbing through to assure they are following the processes that have been developed by the company. It is rare that I find an update to the procedures that is anywhere near current. It is rare that I can find that there is another procedure: one that provides the opportunity for the company personnel to make input to the procedures. And so always I find that which is missing is invisible: it is Leadership. And then what else will be missing:

- Meaningful daily reports
- Labor Cost reports showing earned value
- Timely written notifications in compliance with the contract

- Profit on the last job

As shall be seen, a project team (owner, designers, contractors, suppliers, work force) are a company . . . not a legally formed company, but having all the attributes of a company. A legal corporation has a purpose, officers and a board of directors, stakeholders, a way of doing business (by-laws, e.g.). This is what a project team is all about: it has a purpose (to construct a capital project in which all the members of the team participate with the expectation of achieving individual goals while working together to achieve the common goal); it has the opportunity for profit and loss; it has leadership; qualified members of the team and stakeholders with a vested interest in their successful performance. So, the concepts associated with building teams and collaborative efforts inside a company should be the same as running a project.

The end game is to win the race, to be better than the competitor. That is what **LOMBARDI** is saying in the following excert from his famous "speech".

What It Takes to be Number One

"Winning is not a sometime thing; it's an all the time thing. You don't win once in a while; you don't do things right once in a while; you do them right all of the time. Winning is a habit. Unfortunately, so is losing.

There is no room for second place. There is only one place in my game, and that's first place. I have finished second twice in my time at Green Bay, and I don't ever want to finish second again. There is a second place bowl game, but it is a game for losers played by losers. It is and always has been an American zeal to be first in

anything we do, and to win, and to win, and to win.

Every time a football player goes to ply his trade he's got to play from the ground up - from the soles of his feet right up to his head. Every inch of him has to play. Some guys play with their heads. That's O.K. You've got to be smart to be number one in any business. But more importantly, you've got to play with your heart, with every fiber of your body. If you're lucky enough to find a guy with a lot of head and a lot of heart, he's never going to come off the field second.

Running a football team is no different than running any other kind of organization - an army, a political party or a business. The principles are the same. The object is to win - to beat the other guy. Maybe that sounds hard or cruel. I don't think it is.

It is a reality of life that men are competitive and the most competitive games draw the most competitive men. That's why they are there - to compete. The object is to win fairly, squarely, by the rules - but to win.

And in truth, I've never known a man worth his salt who in the long run, deep down in his heart, didn't appreciate the grind, the discipline. There is something in good men that really yearns for discipline and the harsh reality of head to head combat.

I don't say these things because I believe in the 'brute' nature of men or that men must be brutalized to be combative. I believe in God, and I believe in human decency. But I firmly believe that any man's finest hour -- his greatest fulfillment to all he holds dear -- is that moment when he has worked his heart out in a good cause and lies exhausted on the field of battle - victorious." ***(Coach Vincent T. Lombardi)***

PROJECT MANAGEMENT COLLABORATION

- Let's Play Football. I would agree with Coach Lombardi that the sport of football (and other physical contests as well) is a good metaphor for any business and especially construction. In essence, whether or not you are football fan, the game is pretty easy to understand. On offense, some person gets the ball and tries to score. There are obstacles to him scoring. The obstacles are:
    - The defense on the other side of the line is trying to tackle him; can he get by them?
    - He can only get by them if all the blockers on his side of the line do their job and remove the defensive obstacles.
    - And is this a good play call and do all the members of the offensive team know the play and commit to execute the play and in fact an actually execute the play.
- If the play is a 31 wedge, a lot of people have to do their jobs together. The center and the right tackle work together to create a hole for the running back to go through. Perhaps another running back also plows through to move out a defensive lineman. The timing has to be perfect: the snap right on the count, the quarterback taking the firm snap from the center and handing it off at just the right moment to the back who then carries the ball forward, hopefully for the score.

- Construction projects are like football games. There can be a lot of obstacles in the way and success can be thwarted unless they are removed in a timely manner. What are the obstacles?
    - **The completion of the design phase**. At Notice to Proceed on a Design-Bid-Build Project and to some extent on Design-Build, there is a "completion of design phase." Drawings may have conflicts or ambiguities; shop drawings must be submitted and reviewed to finalize the design and constructibility of the equipment. **Until that is complete, I see the "completion of the design" as a defensive lineman which must be taken out as quickly as possible if my team is to score.**
    - Preparing the playbook. The playbook in construction consists of (but not limited to) :
        - The processes (quality management, safety, change management, for example)
        - The schedule and the game plan for field supervisory personnel planning and executing the work.
        - Supply Chain Management
        - How to prevent conflicts; how to manage them when they occur.

So, let's stop for a moment. No football team is going on the field until it is prepared. Neither should a project team. The ultimate in collaboration is for the team members to have a "standdown" before the game starts, before the first shovel enters the earth or stakes are driven. This is a concept now used in both State and Municipal Public Works and the Federal Government Agencies as well. The concept is for the parties to get together at the outset of the project with the following agenda:

- Complete required deliverables (safety, quality, e.g.)
- Desk top review of drawings to identify conflicts and ambiguities with the drawings and to resolve as soon as possible so that RFIs and changes do not linger throughout the project.
- Conflict Preventation
- Conflict Management
- Prepare schedule which is the product of discussions with and input from all the parties. Emphasize at least the first 90 days. Establish priorities and responsibility.
- Develop key obstacles (decisions, access, or perhaps approval of certain submittals such as rebar or dewatering plans) that must be resolved in the next month and assign responsibilities for resolving the issues.

- Walk through potential issues such as: what happens if the contractor runs into a differing site condition and the owner disagrees that it is his responsibility; or there is a disputed change. How do the parties intend to assure that momentum will continue in the face of such conflicts? Everyone must understand the production flow of the project and the importance of not impeding it.

- How do the parties intend to get together and plan the work, update the schedule, and deal with potential problems such as late delivery of equipment? And how will the crafts coordinate their work, get together in "priority conversations" to deal with potential crowding problems or who has first access to an area (priority walls, e.g.)

- What to do if one of the parties is dragging his feet, not keeping up with the work? How are backcharges prevented and handled when they do occur?

- What is the material handling plan?

- What is the plan for the parties to meet and evaluate how they have been doing, to resolve issues, to figure out how to improve the schedule and/or relationships?

- What is the role of the stakeholders?

- How do we involve the field forces?

- How do we involve the owner's O&M or facilities or user personnel
- How can we and should we involve the community (assume a project which will create traffic issues, the noise of blasting and heavy equipment)
- Can we involve the local schools by having some tours of the site from time to time?

In each of the previous issues identified in the proposed agenda a role exists for more than one member of the team. Each member of the team has a blocking assignment, to do his part to assure that the ball carrier can get through the line. The Owner's blocking assignment is timely decision making, the general contractor's real schedule and coordination management. The subcontractors have the blocking assignment of labor management and workmanship. If any one of these fails in their assignment, the runner is hit and slowed down, possibly tackled and the victory the team members were excited about when they ran onto the field is imperiled. But none of these assignments is performed in a vacuum by one player alone. For example, the contractors are there to assist the owner in decision making by providing accurate and timely information upon which the decisions are to be made. The general contractor must have the timely and thought out input of the subcontractors regarding logic and durations. Subcontractors must be given a project which enables their crews to smoothly flow from one task to another, without jumping all about because of changes in the contract documents or schedule. Each player is on the field to help the other

players. The ultimate in interdependence – by helping the team succeed, you help yourself succeed.

Forget the word "partnering" or "facilitator". Whether or not there is a partnering session as such, or whether there is a facilitator who gets paid to have the team members play musical chairs and participate in other games to earn his/her fee . . . forget those things. I am not underestimating the value of partnering or effective facilitators. The point of emphasis is simply this: *The points above are essential for successful projects.* And even if there is no stand down period, as recommended, these things can and must occur. If the owner does not insist on such a program, the general contractor should undertake it on his own, and if the general contractor refrains, the subcontractors should get together and insist on these activities being accomplished.

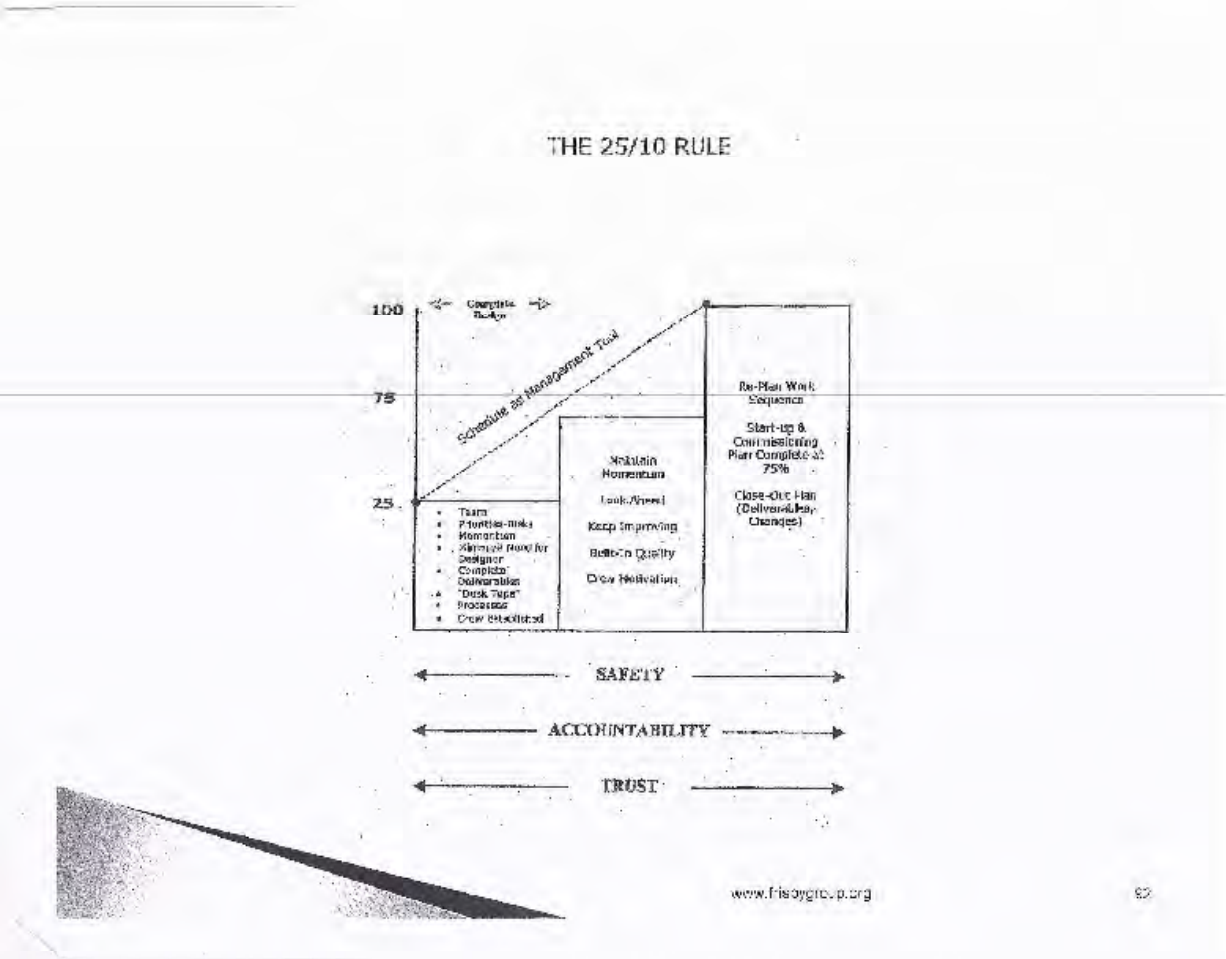
The trend in American construction is collaboration. (**See the National Research Council Report entitled "Advancing the Competitiveness and Efficiency of the U.S. Construction Industry recommending, among other things: "improved job-site efficiency through more effective interfacing of people, processes, materials, equipment, and information".**) And again, timing is everything. (Once a project gets into trouble, and attitudes hardened, it is a tad late to have a partnering lovefest.)

I have a difficult time with Owners which fail to give justifiable time extensions, or timely decisions. Not because of the lack of good faith, although that burns me. It is just plain dumb. Not only is the contractor hurt, but the owner is as well.

And general contractors which use schedules only for billing purposes also incur my indignation . . . for the same reason. It is a lack of good faith but it is also plain, pet rock dumb, for the entire project suffers.

Key Points of Collaboration Along the Trail- The following are some of the key stations along the trail where collaboration must occur and ideas merged on how to be more effective.

Project Kick-off as discussed above. For a detailed approach to this phase, refer to the **25/10 power point presentation** online at frisbygroup.org



Qualified Players with Similar Value Systems. Collaboration is an essential ingredient in the selection of the team members. The glue which holds great team members together is TRUST. That word, trust, is made up of several components:

Competence + Character + Consistency = Trust

A "team" may consist of some pretty nice people, but if one or more is sorely lacking in one of the three "Cs" above, real collaboration may be difficult to achieve. Let's break down each of those characteristics for just a couple of the team members and a couple of characteristics. But they get the point across:

- Owner - Competence
  - Effective at making timely decisions
  - Effective at controlling changes (users or designers wanting to "play" with the toy after the design is complete)
  - Effective at Team Selection based on competence and not "political" or "good ole boy" reasons

- Owner - Character
    - Willing to accept accountability
    - Doesn't try to transfer unreasonable risk to others (such as disclaimers and no damages for delay clauses)
- Owner - Consistency
    - "When the rubber meets the road" (when the financial liability is large and due to design deficiencies) does the Owner still "belly up to the bar" and accept the consequences or does he try to avoid the financial risk and pass it on to others?
- General Contractor – Competence
    - Does the contractor truly use a schedule as a management tool?
    - Does he update the schedule with the input from the subs?
    - Does he effectively manage the decision making process?
- General Contractor – Character

- Does he accept his accountability or try to pass it on to subs or the owner
- Does he treat others fairly and with respect
- Are his subcontracts unduly onerous and one-sided
- Does his live up to his promises?
- Is his ego or self-importance more important than reason and doing the right thing?
- Does he listen?

➢ General Contractor – Consistency

- Does he fairly price change orders
- Does he try to backcharge subs as a profit center for his company
- Does he comply with the adminstrative requirements of the contract or justify why he didn't?
- Is he an excuse maker?

➢ Subcontractor – Competence

- Does he have skilled supervisors and labor force
- Does he do daily planning
- Does he have a built-in-quality approach

- Does he effectively participate in the scheduling process

- Subcontractor – Character
  - Does he stand behind his commitments
  - Does he price change orders fairly
- Subcontractor – Consistency
  - Is he on top of potential downstream problems or does he wait until there is a crisis to handle it?
  - Does he continually try to improve his performance on the project

It is easy for those who share these common characteristics to work together, to sit down and figure out solutions, no matter which person is responsible for a problem on the job. It is extremely difficult to work together when one of the parties is not to be trusted because either of incompetence or being unreliable. Change orders are often a good test. If the owner is denying change orders which are obviously valid, or trying to unreasonably slice the contractor's pricing without justification, or if it takes him forever to get a directive out knowing that the project is suffering without it, that tells me to beware and may inhibit my willingness to work out issues with him. If the contractor is constantly throwing change orders at the owner which are obviously in the contract, or if the pricing is always exhorbitantly high, then the

owner has every reason to be cautious. The same is true in an IPD where one of the parties is simply working toward his own objectives or ego and not the best interest of the project.

Team players who have the ingredients of trust can usually work out almost any problem. Those who do not can sometimes not work out the smallest of problems. The ego of a young Government engineer on a a High Energy Laser Beam facility in New Mexico many years ago held up a rebar submittal for months, resulting in the concrete work being delayed into the winter, no time extension and a project that was a march through hell. The engineer was dead wrong and refused to admit it even after the government was forced to pay over $2 million in acceleration and delay damages. The irony is that the total cost of the additional rebar which he finally caused to be added was less than $5000 which the government also ended up paying for as a constructive change. I recently backed out as a facilitator for a partnering session on a government project because the designer was not a part of the partnering session and the Government representative said: "I don't need the designer; I will just tell him what to do." Partnering? Give me a break!

So, the role of the Owner in collaboration is huge in the team selection process. Once the right team is selected, the doctrine of *prominent outcome* kicks in and the probability of a successful project have been greatly enhanced. The general contractor has the same need of team member selection, but the

subs also do in another way: when the sub realizes that the general contractor is simply a muleskinner and operates simply by directing the subs to do his bidding, then it is time for the sub to think about another project.

Communication

Everyone says that *communication is the big problem.* Well, everyone says that weather is a big problem but in the case of both, very little is down about them. Actually, the cavemen did a pretty good job with grunts and body motions, and drawings on the wall of a cave. In construction, we talk about communication without even understanding all the elements of communication we run across in the course of a day (now remember my definition of communication: it is getting across clearly information that others can understand and do something about):

- Contract Documents (drawings and specifications, codes)
- Schedules and planning documents
- Daily Reports
- Labor Cost Reports
- Minutes of planning meetings
- Request for Information
- Change Orders and change order proposals
- Correspondence
- B-I-Q stages

- Inspections
- Policies and Procedures
- Telephone calls
- Meetings
- Discussions while walking the project
- The company's mission statement
- The project's charter
- E-mail . . .countless e-mails . . .my God . . .countless e-mails
- Et cetera et cetera et cetera

Each of these is a communication which is to have a *purpose.* If it doesn't have a purpose, then why have the communication? So, let's example the calculus of communication:

It is verbal, written, or a gesture +

The communicator must express the meaning with clarity within the context of the person to whom he is communicating. (The engineer must recognize that he is talking to a contractor, not another engineer; the contractor may need to realize he is talking to a hospital administrator and not another contractor.) +

The communicatee must LISTEN . . . not work on his response. One of the techniques good mediators or negotiators use is, after the other party has

spoken, is to summarize what the other person has said: "What I heard you say was . . . ." or "What you are asking me to do is . . ." or "And you say that this must be done by this date or . . ." This assures that the listener got it right; but if the listener knows that he must always respond with such a statement, it really forces him to truly listen, so this is one of the techniques that we do practice in partnering sessions. +

Both parties must THINK about what has been said. The first step in "listening collaboration" is communicating clearly, the next step listening (really listening) and the next step is thinking about what has been said. That is, when the two parties can discuss (not yell but discuss) what has been said, with the objective of arriving at a solution or a middle ground, now we are getting somewhere.

But let's consider other forms of communication. Take the contract for example. How often do we find that a contractor has not read all of it (we see this in RFIs asking for information that is in the contract, or workmanship problems where the contractor has failed to read the tolerance or the standards of acceptance in the documents)? And take daily reports where project managers fail to read the reports which warn him of potential problems due to some interference on the project.

The point is: **communication takes homework**. We must read the documents available to us, try to understand them, communicate them as necessary to others. And it takes some diligence to write documents which others understand. And if you find that others are having a hard time understanding what you are writing, maybe you are having a hard time understanding the issue yourself.

The Scheduling Process

The scheduling process has simply got to be more than a scheduling consultant sitting down at the computer inputting some stuff and handing it off to the project manager, and then monthly putting together an updated schedule as a deliverable for purpose of getting paid. Read this statement again: isn't it a ridiculuous observation that such a thing could ever occur? Yet, some version of this is happening on a huge number of projects every day as we speak. I would love for the Construction Industry Institute to do a meaningful survey of the industry to find out the percentage of projects in which this is a true statement, at least to such an extent that the outcome of the projects are being negatively affected. I just do not understand why the general contractor (so many of who do not self perform any work, and construction managemers or more properly descirbed as construction adminstrators) who are only hired to schedule, manage, and coordinate do not effectively schedule their projects. They *run* their projects . . . a big difference. They *direct, kick tail, push* but so often do not truly manage their projects, or have truly effective scheduling.

The schedule *must be a collaborative exercise.* And there must be *ownership and commitment* as the underpinnings . . . by the general contractor, all the subcontractors and the owner and design team as well. This simply means that

even if it is a scheduling consultant which prepares a preliminary schedule, it must be:

- *Complete;* that is it must be a procurement schedule; it must list the built in quality dates, TAB and commissioning and inspections, training, FF&E, et al. And it should be resource loaded so that it can be a forecasting and meassurement tool for performance trends.
- *Reviewed and analyzed* by all the parties.
- *Discussed* with all the affected parties
- *Input* made by all the affected parties
- *Affected parties* includes the *key suppliers*
- *Understood by all the parties; by understood is meant they each understands his relationship to the schedule, his duty to make his portion of the schedule occur, his commitment to make it occur, his commitment to assist where necessary to assist others to make it happen. Let's examine "understand"further. At the kick off meeting, the person responsible for scheduling show demonstrates a number of scenarios. First, he should demonstrate what "production flow" is and its relationship to productivity. Then, he should give some examples of delays by the owner, designer or other craft contractors to show how production flow is affected and the negative consequences to productivity and the project. Then he should give some examples of an impact and let the participants give ideas on how the impact can be mitigated. Collaboration without understand is just a meeting.*

- The consequences of failing to do so must equally be understood; the failure of timely decision making that will cause the production flow to be affected or acceleration to occur. The failure of the subcontractor to perform work that is precedent to another trade as required or according to the contract standards must be well understood. And therefore the Contractor's Hippocratic Oath should be taken by all the parties: *FIRST DO NO HARM.* It is virtually impossible for a contractor or an owner or a designer to mess up and hurt just himself without some negative impact on the other members of the team. So, *FIRST SWEAR THAT YOU WILL DO NO HARM.*

There are two emphasis points here: one is that the first day of the project, this schedule will probably be out of date to some extent. Things can change rapidly. Second, the full duration logic diagram is not necessarily the tool for planning and building a job day by day. Thus, there must be also a commitment to *update the schedule routinely* using the same collaborative process as was used on buidling the original baseline schedule. At the kickoff meeting, the person responsible for scheduling should go through a scheduling update using the Time Impact Analysis method. And then someone should demonstrate how a contractor must prove delay and labor impact cost in the event a need arises. The contractor needs to understand why the owners frown upon total or modified total cost and their obligation to have a system based on field documentation to prove impact to the owner. Again, it takes understanding of the issues and the positions of each. This is quintessential Covey: seek first to understand.

Secondly, let's go back to football. In football, the coach and staff develop a *playbook* for the entire game. Like Eisenhower and his staff developed a complete game plan for taking Normandy on D-Day. Well, in most football games, things don't materialize exactly as the coach had envisoned in the comfort of his office and D-Day didn't materialize as Ike thought. And so, the game changes and the team leaders, the guys on the ground (superintendents, foremen) must have a plan for the moment, or the next play. In football, the teams get together on both sides of the line after every play and decide quickly on the strategy for the next play. On Normandy, the few leaders still alive gathered their remaining troops together and came up with a plan to advance the next few yards, then a plan to advance the next few yards.

In football we call this process a **huddle**. There are several opportunities in construction to *huddle.* The first is to work together with other crafts and the general contractor to put together an interim schedule (four or six weeks). This is truly a huddle like atmosphere. There is someone standing at the schedule mounted on the wall with a marker, asking the mechanical when he can get the building conditioned air and the mechanical asking when the electrical can get him permenent power. In football, the offensive guard may be saying to the quarterback: "Look, I am just not able to handle the defensive rush. I need some help up front." And in construction the stud contractor may be saying: "I am sorry but I have lost a part of my crew for a couple of weeks. What can we do to work around the fact that I will be behind on the atrium for a while." This huddle produces a short term schedule and is committed to by all the parties.

And then there is *daily planning* which is another *huddle.* Project Management Institute (PMI) prepared a paper (attached) entitled *The Daily Huddle: How to Increase Safety, Quality, and Improve the Schedule on Construction Projects.* The authors (Junod and Pankonin) have laid this out quite well and it is commended to your reading.

Lombardi said that winning was not a sometime thing, but an all the time thing. Meaning that one continued to plan and prepare for success daily. He was right: that applied in football the same as business, the same as construction projects.

20/20 Foresight

For the most part, a well monitored project has the tools to predict potential danger looms. If a contractor is monitoring and tracking submittals and deliveries, he should be forewarned that key equipment may be delayed due to a submittal problem or other factor which is delaying the shipment. Or that a RFI will be converted to a Change Order and add a significant amount of critical work . . . or delay the installation of the work. Effective project management should have these "weather monitoring" tools to forecast stormy weather. Not in all cases, but probably most.

However, just knowing that a delivery will be delayed or a change order is

looming, or that precedent trades are falling behind which will affect overall job progress is simply not enough. *Having information is passive. (If you are driving to a destination and you hear on the radio that there is an accident ahead, you have several options. One, you can just drive up to the point where traffic is stopped, turn off your engine, finish your coffee and listen to your favorite radio program. Or, you can think about how you can detour around the accident, taking another route perhaps.) DOING SOMETHING WITH THE INFORMATION IS WHAT WE MUST HAVE FROM OUR PROJECT AND SUPERVISORY STAFF.* So:

- Tools (such as tracking tools for the supply chain, RFI logs, et al) must exist to help forecast potential problems.

- Planning meetings with all the crafts must provide for open and *honest* discussion regarding workforce, progress, and coordination problems, potential issues which can affect the schedule as to duration and production flow. The sooner the team is aware of a potential delay or problem, the quicker it can work around it with the least impact. Colon cancer detected by annual checkups for old guys like me can spot a problem while it is curable. Not a lot can be done once the cancer has metastisized or spread into other organs. Same is true of a potential late delivery of Air Handling Units or a portion of the window wall. There are things that can be done to mitigate the damages when the problem is known well in advance. But if the casework installer delivers his equipment to the site one day and discovers the roof is not installed and conditioned air is six months off, the damage is done. *Concealment* of vital information is unacceptable whether it is the owner not letting the contractors know of

some gunnysacked changes that will affect rough-in of the Operating Rooms, or a craft contractor who fails to state at the planning meeting that half his crew will not show up next Monday. It is just wrong. Take a deep breath and be forthright. Work with the team to help fix the problem.

- A list of potential problems should be developed at each planning meeting.
- The field supervisory personnel should have as an agenda item: "What are the things we might do to help overcome or at least mitigate this problem. What action do others need to take? How does this affect our look ahead plan? How does this affect the full duration CPM?" And the actions with responsibilities established and monitored closely with follow-up meetings to perhaps fine tune the action plan.
- But the action plan must be well considered. Knee jerk reactions like: “Work overtime, double the crew size, terminate the guy and so on" often simply make the problem worse. If overtime is to be worked, should it be selective, if additional work force is required, how many and what activities will really help the project? Is there another source for the delayed equipment?
- Politically, there are people who do not like the expression: It takes a village. But on a construction project, indeed it takes collaboration of the entire team to forecast (20/20 foresight) potential problems and then work toward a solution which prevents or mitigates the problem. Yelling has never yet been a solution; knee jerk reactions are not solutions. It takes a simple approach: Have the tools in place to identify the issue, identify the

issue, gather the facts, *be honest about the issues without regard to liability,* bring in the people affected and solicit their ideas and work toward the best possible solution, develop and implement the plan. Attack issues and not people. *It is not the issues which kill a project; it is how the issues are handled by the team!*

(*Years ago I heard Steve Young, ex-quarterback for San Francisco tell of playing his first game in the New Orleans Superdome. He said that on the first three offensive plays, he threw interceptions and there were two runbacks for touchdowns. There had been so much crowd noise that his players could not hear him barking signals and the team was in disarray. After the third such humiliation, Young called his offensive players over and said: Hey, guys. We are trying to play as though there was no crowd in the stadium. Well, there is and they are not going to stop their roars. So, my barking signals is not going to work for the rest of the game because I can barely hear myself and I know you can't either. We know how to play this game so I will call a series of plays now and when we go out there, just be sensitive to my movement when the ball is snapped and let that be your signal rather than my cadence." And so the team did just that, realized they had a problem but refused to let the problem defeat them. The Niners won the ball game.)*

- And a word about updating the full duration schedule. If the updated schedule is not realistic, if it does not truly reflect the late delivery or the late precedent work without regard to the effect on the work activities and sequence, then the "schedule" is no longer a schedule but trash.

  So, the calculus for looking forward, for having 20/20 foresight is:

The commitment to do so + having tools that will give you signals that there may be a bump in the road ahead + honesty in recognizing it and communicating it to the team + the team working together to figure out how to mitigate damages + actually implementing the strategy+ doing all this without pointing fingers – being civilized.

Reliable Promises and Collaboration

Credit must be given to Hal Macomber (www.leanproject.com) for coining the term "reliable promises." My great uncle who was the vice chairman of Kerr McGee had a similar term that was "moral contract". They have the same basic connotation. Both apply to the scheduling and project management process.

In developing a schedule, most activities are dependent to some extent upon a preceding or concurrent activity being accomplished. Each activity has a “start" date. For each activity, there is a person to make that start date (and the duration and completion dates) happen. For each activity, if that start date or the duration is delayed, someone else is hurt. If the elevated slab is delayed, then the blue lines for the drywall will be delayed which will domino to the studs and the mep rough-ins . . . .

So, when the concrete contractor inputs a schedule and commits to a given start date and duration, he is doing something other than drawing a couple of schedule bars on a chart. He is PROMISING that he will do what he said. And the succeeding contractors will RELY UPON that promise. More Howell calls this a

"Reliable Promise"; my great uncle called it a moral contract. In fact, he said that when such a promise was made, it was a matter of honor that it would be fulfilled. In Japan, that is the cultural concept as well.

And the successor contractors are promising: If you have that elevated slab completed per your commitment, we will have our material on site, pre-loaded, and crews ready to go on the dates we have promised.

In the old days, these "promises" occurred in a conference room, or at a conference table in an office trailer, and generally in front of a chalk board where the key players would make input to the project manager or superintendent who would be drawing diagrams, asking for suggestions and input from the team to develop a schedule which was the product of the wisdom and experience of all in that room. Everyone's fingerprint was on that final schedule document and everyone knew that everyone had made a "reliable promise", or a "moral commitment" to live up to his/her representation as to dates, resources, and durations and project success. This is real *collaboration.*

This works.

If the schedule is outsourced, and there is not this kind of input, where is the "reliable promise", the "moral contract"? Where is the ownership, the accountability? Or when the general contractor passes out a schedule to the subs that do not “dig into it” and analyze how it works for them and how it can be improved . . . there is no collaboration and there is ultimately no real schedule. There is a dead tree, a billing deliverable. But not a schedule that is a

management tool. Collaboration requires thinking, using the head, analyzing, participating, making input. It is a two way street: the subcontractor must participate and the general contractor must listen with an open mind to the input.

And when it comes time to update the schedule, and there have been delays, disruptions, variances . . . does it make sense to simply push a few keys on the computer to spit out a new schedule or should the team get back together and figure out how best to handle the variances and develop a new set of "reliable promises", promises upon which everyone can relay?

I have found no computer software program which can make a promise, let alone a reliable promise. Or a moral contract.

Scheduling consultants do not make reliable promises. They make schedule documents. Er, billing documents in too many cases.

Field supervisors and their project managers can and must prepare good scheduling tools. Owners and designers are a part of this team and must make a "reliable promise" that decision making will be timely and objective.

I love the story of the construction of the Empire State Building. There were no

computers, no scheduling consultants, and no facilitators for partnering. The project, as you will saw was complete in about 12 months because the contractor *thought out* how to build the project, brought in his field team and suppliers and they all *thought out* the best way to build this thing. And got the owner on board who was willing to share some of the risk. If one needs a model for collaboration, the Empire State Building will win the Gold Medal.

I Built That Building

When I visit out of state clients, I invariably meet one of the workers and get to know him and his family. It is not uncommon for me to have red beans and rice at his double wide, enjoying being a part of his family for an evening. And often one of the workers will drive me about the area and point out buildings or projects that he worked on: "See that bank? I done that. That's my bank." He just didn't lay a CMU or do a weld . . . he built the whole damn thing. And he doesn't own a piece of the rock . . . he owns the rock. "That's my building!" he says. And how great that is and what a great lesson to management. In this industry, there can be a real sense of fulfillment at the end of the day, at the end of the project. The more the workmen are made to feel a part of the end game, the final result, the usage of the facility, the greater a sense of ownership and pride . . . which can be converted to productivity. At one time on the Clark County Sanitation projects, the contractors would have monthly B-B-Ques at lunch for their workmen and the engineers, owner's representatives (including the O&M personnel) would attend and mingle with the craftsmen. On the United Services Automobile Association project back 40 years ago I remember that the new president of USAA (General McDermott) would go out on Friday afternoons and visit with the workmen, talking about the plans for the company and the company future capital projects it had in mind. Immersion in the purpose of the project is the type of collaboration which influences people for a very long period of time.

In Summary

Too often I have worked on construction claims that took longer to resolve than it did to construct the project. I was the expert witness for an owner on a biomass project which failed to properly perform. The design/build contractor and the owner could not negotiate a "fix" for the problems as each party was too interested in blaming the other for the malfunctions. The plant, complete but not functional, sat for three or four years. The case went to court and the jury awarded my client more than $40 million. The attorney fees on both sides amounted to more than $10 million. The reproduction costs of the tons of documents totaled more than $1 million. Ironically, the cost of the fix was only $4 million, which was eventually made by the owner who collected a pittance of the judgment from the contractor. This was a ridiculous waste of money. Why? In large part, because lawyers were calling the shots rather than the construction company. The principals agree on the common goal of developing a workable solution to the problem, get the plant operating, generate some electricity, and try to resolve the liability issues amicably. Instead, between them they spent $10 million on attorney fees, plus another $4 or $5 million on litigation expenses, experts and the like. And, the impact to the management of their personnel was substantial. The bottom line: Again, the cost of the fix was only $4 million, and the initial cost of the plant was only $12 million, or less than the cost of litigation. This is an extreme example, but one that is too prevalent in our industry. Studies show that countless billions, yes BILLIONS of dollars are wasted through the failure to follow the concepts laid out here. The concepts expressed herein are pretty simple: not rocket science, nothing startling new. These are the fundamentals of how people can and

should work together in one of the greatest industries in the world.

CONTRIBUTORS TO UNCOLLABORATION

Some “teams” really never get started. There is the illusion, a kick-off meeting, and a bottle of beer at the end of the program. But one can tell, one can sense the hesitancy on the part of one or more of the participants. And some teams lose their glue along the way. Some of the reasons or factors are cartoonized below.

THE DICTATOR

"Do It My Way"

FAILURE TO COORDINATE

HOME OFFICE

FIELD OFFICE

SCHEDULE AS A BILLING DOCUMENT

THE DUELISTS

CAUTION CAUTION CAUTION CAUTION CAUTION

WARNING! THERE ARE DANGEROUS DUELS OCCURING ON THIS SITE!
CONTRACTOR OUTRAGEOUSLY INFLATING CHANGE ORDER PRICING.
OWNER REFUSING TIME EXTENSIONS.

CAUTION CAUTION CAUTION CAUTION CAUTION

DREAD DISEASE ALERT

Accountability has been infected by a virus called legalistic Dodge-em-Fris. Results in Carpal Tunnel Syndrome of right index finger, strained from always pointing finger at others! Creates conflicts, slows down decisions.

Project site will be designated

as Quarantined Site!

BROKEN PROMISES

PLANNING AHEAD

MEASUREMENT

THE ROLE OF BUILT-IN QUALITY

ADVERSARIAL RELATIONS

THE KID WHO WON'T PLAY WITH OTHERS

IT'S MY TOY!!!

IGNORANCE

Empowerment Before Enablement