A Case for Third Party Project Controls

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The Quote:

"*Though it be honest,*

it is never good,, ,,,, to bring bad news;

give to a gracious message a host of tongues,

but let ill tidings tell themselves, when they be felt."[2]

This line from Mr. Shakespeare is framed in my office. It hangs on the wall behind my desk.

Anyone who knows me well at all,

has heard me say on too numerous occasions,

that I would have been a history teacher,,,, if there was any money in it.

There is much to be learned,

about how things change yet they remain the same.

Old War Stories

Let me share an old war story.

I was a young field engineer

complaining to an old Project Manager about my resistance to "fudging" numbers.

I asked him why a Project Manager would report grossly optimistic numbers when he knew the truth would catch up to him eventually.

I idealistically stated that you should acknowledge problems early,

while there was time to take corrective actions

or at least notify the client of the financial implications for cash flow issues.

His response was this,

"I would rather take one "beating" at the end of the project,

than have to go thru a repeated “beating” every month for half the project”.

Years later I still shake my head at the memory, yet I understand the reasoning.

Around 15 years ago I was working for a fairly large EPC firm.

I was assigned to a troubled project in a southeast state.

The project was a plastics plant for a major energy company.

The project management team was reporting the project at 85% complete.

The client had grown suspicious of the accuracy of this number.

Most clients, being operating companys, are not experts at project management or construction.

That is why they hire “experts” (like us) to design and build their facilities.

A wily project manager can issue a thick and confusing monthly progress report.

It will be full of curves, charts and deceptive text that demonstrate how the project is sixty-five percent complete,

All the while the project manager knows the project is really only fifty or fifty five percent complete.

At this or earlier stages most clients don’t have the expertise to identify the ruse.

However, when you report eighty-five percent complete

and you are only seventy or seventy-five complete

even your client can see things are not right.

At eighty-five percent into a typical process plant you should not still have two hundred iron workers on the project.

This project did just that.

This client raised serious concerns,

a “fire brigade” team including myself was sent to the project site to evaluate the status of the project.

After two weeks we determined the project was around seventy-three percent complete,

not the eighty-five percent previously reported.

My work involved submitting a recovery plan for the project schedule.

The end result of this process included one of my employer's executives having to report, to the client,

that we would need another twenty-five million dollars to complete the project,

and we would still be late with plant start-up. For no extra charge, (pause)

I would say the gentlemen bearing these "ill tidings" earned his paycheck on that occasion.

Surprisingly the original Project Manager had two weeks before our arrival declared victory at the project's success,

and accepted a substantial promotion at a competitor firm.

I assume he was a believer in Mr. Shakespeare's wisdom. "*…, but let ill tidings tell themselves when they be felt."*

Fatal Procrastination

If you wait for bad news to make itself felt,

it is long too late to take corrective actions.

This is what project controls are all about.

This is what earned value analysis is all about.

This is what accurate forecasting is all about.

This is why a schedule is not just a tool to tell the contractor what his workers should be doing today.

The Big Question:

What would it be worth to an owner or project manager,

to be able to know accurately,

where your schedule is?

where your budget is?

thru the entire duration of your project?

What would it be worth?

to NOT have to go to your management

and explain why you are going to finish late,

or over budget,

or most likely both?

The follow up question is this.

If a Project Controls entity provides accurate and timely project metrics,

will you listen?

and if you listen?.....how will you react?

Who Needs Project Controls?

Through the majority of my career,

I have worked troubled projects.

This most certainly is the cause of my built in bias,……..

and cynicism.

As a consultant we rarely begin a project at the beginning.

We get involved to perform damage control

and establish recovery plans.

The typical cause for the project's problems

is a common mental attitude,

that they pay lip service to project controls.

A junior,

less expensive, individual

is assigned to develop the schedule.

The junior staffer plays the role of lap dog to the project manager.

Often junior Project Engineers perform project controls work as a sideline,

part-time effort, in addition to their other, IMPORTANT, duties.

Often within six months or so the junior person is overwhelmed,

is fired

or resigns.

This happens all too often on fairly large public projects.

This represents the low level of importance

project controls is regarded with,

in some parts of the industry.

Typically at this point in the project,

the client raises the issue of schedule problems.

Relations are ugly

and an outside consultant is procured.

That is when someone like me shows up to fix the mess.

Who needs project controls?

My experience tells me this.

On those occasions when a project goes well,

project controls are largely invisible.

As a project controls person,

if I am doing my job well,

all is smooth,

all is quiet,

a well oiled machine.

At project completion

accolades go all around to the line staff.

A new attitude soon develops,

"What do we need a schedule for?

, everything went according to plan?"

After a string of "victories"

the next time a budget is being massaged

the project controls budget gets reduced with the logic that,

"it's just unnecessary overhead".

The pendulum swings too far

and a project disaster is on the horizon.

The next project is late

and over budget

and project controls may end the scapegoat.

The Project Enigma (**always liked that word – Enigma)**

It is all about predictable human behavior.

Software is not the solution.

The Project Team

On any given project there is a team of players.

In many ways like a sports team,

the players on a project team

have both common shared motivations

and their individual PERSONAL objectives.

On a successful,

well managed project

progressing according to plan and on or under budget,

it is much easier for all the players to work to the common goal

of a successful project.

Things do get a little more complicated

when a project encounters a few costly “CHALLENGES”.

When the challenges present themselves,

it is much more typical

for the team goal

to be subordinated

to the financial interests of the individual players.

Let us look at the players

and their objectives

The Owner

Owners want their project delivered on time on budget.

That sounds so simple.

In the early stages of project development,

a vital issue is to resolve the Owner's key priority elements of a project.

There are three key priorities to all projects:

Financial, Schedule and Quality Control.

Typically a project has one of the priorities superior to all others.

There may be two of equal importance,

but at least one of the three will be relegated to a lower priority than another.

As an example imagine a project that has dual top priorities.

A broken water main is to be repaired,

in January,,,,, in Minneapolis during an extreme cold snap.

Time is of the essence.

Quality issues are paramount;

you can't have it leaking again the next week.

Budget issues are?..... I invite words to describe the budget priority.

It is of highest importance,

to determine the Owner's priorities to successfully execute a project.

There is usually resistance to answering this question……

The Owner also often desires the ability to make scope modifications as the project progresses.

The Owner's project team probably has the conflicting ambition to not increase the budget for these same, legitimate changes.

The General Contractor

General Contractors use contractual tools to limit their risk from project performance to a minimum.

Using the terms of the contracts,

the performance risk is transferred to the Subcontractors.

Their goal is to execute the project on schedule and on budget.

Their goals are typically aligned closely with the owner

for the simple reason that they are courting repeat work from the owner.

The justified financial interests of the subcontractors,

the risk takers,

will be sacrificed,

when they conflict with the interests of the Owner/Client.

Scope and or design changes are most often the cause of these conflicts.

The Engineer / Architect

There are two different worlds in this category.

In the industrial world projects are often executed by large EPC (Engineering, Procurement, and Construction) firms that provide full service turnkey projects.

This is a different approach with a different contractual and ideological approach.

This is the fastest way to deliver a facility when "getting a product to marketplace" is the first

and, because of market forces, only priority.

Architects and engineers on most building or institutional projects,

outside of the industrial world,

prefer to complete their design work before construction starts.

This is the standard system for executing a large portion of building and institutional projects.

This is especially true of publically funded projects.

This is the slowest method of delivering a project.

It is always argued, by design firms

that this saves money by reducing design changes and errors.

A major error in this reasoning is that most of the design errors are discovered during construction.

Another issue here is that the cost of money

is not included in this line of thinking.

I have personal experience on a large medical facility built for a major State University.

The schedule for the public project was 38 months.

Had the same facility been built for a private pharmaceutical firm the schedule would have been 22 to 24 months.

What is the value of $300 million for 14 months?

What was the cost to the client for leased space at their existing residence during those 14 months of "float"?

Design firms are often called upon to serve as a referee or in a quasi-judicial role to evaluate contract performance.

It is very difficult for an A/E firm to be unbiased in performing this role.

The issue is that standard AIA contracts give the authority and responsibility to the A/E to perform this role

and to put it bluntly few A/E firms are any good at it.

They are designers

and they are biased to interpret any project difficulties in a manner to protect their interests.

The interpretation will typically reduce their own contractual exposure for errors and omissions in the design.

This bias also helps maintain their positive relationship with the owner;

unfortunately at the expense of all the other project players.

The Subcontractor

The players with the biggest labor productivity risk on major construction projects are the subcontractors.

The subcontractors are typically specialty trade contractors.

Project problems are typically the result of:

- Inaccurate geotechnical information
- Failure to secure needed permits
- Deficient equipment fabrication
- Schedule acceleration
- Lack of adequate scheduling and project coordination
- Late equipment deliveries
- Design changes or errors
- Failure to provide proper site access
- Bad weather
- Labor problems, potential wage escalation with delays
- Late or poor performance by installation contractors
- Problems with testing and commissioning
- Other

The trade contractor simply wants to get in and perform his work with the least amount of changes and conflict with other project team players.

Either of these,

changes or conflicts,

directly impact labor productivity in a negative way.

The Suppliers / Vendors

Vendors and suppliers are most interested in the reliability of a schedule.

Their costs are tied to delivery dates.

They need to coordinate fabrication time and purchase bulk materials

on a predictable schedule.

The Construction Manager

Most often the Construction Manager (CM) will function in a role similar to a General Contractor.

Most significantly to our issue,

the CM contract is direct to the owner.

He is typically reimbursed on a fee basis

for maintaining a management team assigned to the project.

He invoices on a monthly basis.

It is likely he will be reimbursed on a rate schedule basis if the project duration is extended.

When the project duration is extended

his motivation is to document that (HE) the CM is not responsible for the time extension.

If he can successfully do so; the longer the project takes to complete, the more money he makes.

Project Team Conclusions

From these short descriptions,

it is clear that every member of the project team

has their own individual goals

these goals will trump the good of the overall project

if difficulties sour the relationships within the project.

How do we get around this conundrum?

It doesn't matter how you rearrange the deck chairs for the existing players.

You always end up with one of the foxes guarding the proverbial chickenkoop.

I propose that what is needed

is an entity whose only motivation

is to accurately track the progress of the project

and raise the red flag on problems when they arise.

The entity must be empowered,,

to communicate to the client

when the client's actions

may be detrimental to the project.

This is a much bigger issue than is often acknowledged.

A major challenge to accomplishing this issue

is modifying standard contract language

to empower a third party project controls entity.

Projects Gone Bad

Here are some examples of public projects gone bad.

This is an excerpt from the Boston Globe, 2003.

"Three of the five largest transit projects in the United States that have received significant funding from the Federal Transit Administration (FTA) are costing at least 27% more than originally expected.

The Tren Urbano rapid rail line in San Juan, Puerto Rico,

has experienced a net cost increase of $426 million,

or 34% of the $1.25-billion estimate.

Cost overruns have come from system enhancements,

higher contract costs, and the addition of two new stations.

The $413-million South Boston Piers transitway project has experienced a 28% cost increase,

primarily from design changes and from construction delays caused by the need to coordinate work with the massive Central Artery/Tunnel project.

Costs for the $1.2-billion Bay Area Rapid Transit project in San Francisco, California, have increased 27%,

most of which can be attributed to higher construction costs resulting from the booming economy in the region.

The FTA has no plans to increase the grants to cover the cost of the overruns." [1]

Public projects spending billions of tax dollars running out of control.

From this article these transit projects go over budget by at least 27%.

If you do just a little research you can find the "Big Dig".

It is hard to sort thru the mass of data

but you find a project that started out around $2.5 billion

and finished years behind schedule at a cost over $20 billion.

After several attempts I never could find what had been the original schedule.

The very large duo of firms

we would all recognize,

don't seem to have ever developed

anything resembling an integrated schedule for the project.

How many months were they behind schedule?

The program managers and the Owner were so interconnected

that it was nearly impossible

to sort out who was responsible for anything.

To the best of my knowledge the legal battles continue.

How do these disasters happen?

A simple question is the answer.

Projects like these have to compete for tax dollars.

If the real budget is disclosed

would these projects have been funded and approved,

or would another project,

maybe one with accurate numbers,

have been approved?

Given the previous mega project experience of this team,

does anyone really believe

the original budget was a mistake,

or was it by design?

Would independent project controls

Reduce the chance of disasters like this?

Accurate Estimates and Forecasting

A previous employer of mine,

a large EPC firm,

had a standard against which they measured their performance

on reimbursable projects.

The goal was to be less than three and a half percent higher

than the plus or minus ten percent “budget” estimate.

While working on a project a few years back

I learned that at one of the world's largest oil company's projects were running typically,,,

between thirty to forty percent over budget.

I was on a team that cut that number to less than a two percent overrun

on a "demonstration" project

to show how projects could be successful.

Were there rewards for success?

Our project team made far more enemies than friends.

We were outsiders that proved to be an embarrassment to the establishment.

To complete a project close to an original budget,

the original budget needs a high level of accuracy.

To get that required level of accuracy

you need a clearly defined scope

and the project team's recognition

that an accurate detailed estimate

is the first building block of any project controls system.

The team's recognition must be followed up

to invest the time and money for the estimate.

With a good estimate

any competent project team

can build a set of tools

to provide good progress metrics

for management to drive a project.

Without the detailed estimate

any software or integrated management system
is based on smoke and mirrors.

When a project hits the 25 to 30% range of progress,
a good project controls staff
should be able to forecast the completion budget and schedule
within 1.5%.
I've successfully done so on multiple projects in different industries.
The cornerstone to this system is an accurate detailed estimate.
The issue here is that projects can be well managed.
The question is why so many projects
are NOT being done so.

The Power of the Pen

All of us work for somebody.
All of us have someone who signs a timesheet or an invoice.
That person who signs that pen wields tremendous power.
Human relations people can argue all they want.
There is a person who approves your paycheck.
Maybe there is another person who signs your annual performance review.
People who hold those pens hold great power
over your personal well being and career future.

People in project controls USUALLY report to a Project Manager.

In most companies a Project Manager has authority close to that of a captain on a vessel.

Flogging is out of fashion.

Still,

few people will challenge the word of the Project Manager.

Years ago I worked for an old school dinosaur of a Project Manager.

If you would ask him

he would tell you he liked people that would stand up to him and question his decisions.

He would tell you he respected the person who did so.

What I observed to the contrary was that anyone who questioned his authority or any decision was off the project within 3 or 4 months.

Transferred, fired, resigned, it didn't matter.

They were gone…….. and most were happy to be so.

This type of project manager

is a great risk to their employer and the project.

Upper management seldom learn of these individuals talents

until it is too late.

These are the guys who report 85% complete when the project is 70%.

Their employees are cowed and their employers

are soon to be explaining to a higher pay grade, what went wrong.

People will bend to the will of those who sign their paycheck.

This is a built in, potential problem

if project controls, reports directly to a Project Manager.

There is no need for an adversarial relationship

if the only goal of project controls is accuracy.

Accountants and SOX

It is taken for granted that outside accounting firms provide services to publically traded firms.

I won't go into any detail but the evolutions of regulations related to the Sarbanes-Oxley

continue to push the Earned Value Analysis agenda.

The problem is that few accountants

have the experience to accurately evaluate the numbers

that are reported to them.

The result of this is simply more procedures and reports

that are no more accurate than they were at Enron.

Conclusion

What I have tried to demonstrate

is that a substantial number of projects

in today's business environment

are being poorly executed.

Lengthy schedule delays are common.

Budgets are exceeded by huge numbers.

It is the role of project controls

to report to management in an accurate way.

Management's role is to take the data from project controls

and use it as a tool

to reduce these project performance problems to a minimum.
From my personal experience
the cause for project failure
is nearly the same in every instance.

In some cases project controls were a low priority
and management "shot from the hip"
as the project proceeded blindly.

In other cases management knew the real data from project controls
but mandated them to report a more "optimistic" view of the project.
This is what I call the "Ostrich" method of project management.

The third chronic cause of disaster
is a lack of change management.
This problem is based on the lack of the detailed estimate.
There are those project players who prefer this scenario
because it allows for a great deal of obfuscation
if the need arises to cover ones rear.

I propose to let designers design,
let contractor's build,
let vendors fabricate and deliver materials.
Let Project Managers manage their projects.

I also suggest that we promote a new

independent player to the project team.

I propose that an outside,

3rd party project controls entity

can provide better,

non biased project controls,

and perform the role of a neutral mediator in resolving many project coordination issues.

Who could better analyze an integrated project schedule,

without bias,

than an independent scheduler?

The independent scheduler

works with every other player on the project team

to develop an integrated project schedule.

His only interest is to finish on time and on budget.

If the project is less than a success,

An independently maintained schedule

clearly documents what went wrong.

A well detailed and maintained CPM schedule

is the tool most recognized

and acknowledged in court,, if you end up on either end of delay litigation.

How much more of value?

If it was produced by an independent entity?

What is needed is an entity

to have the freedom to be honest.

References:

[1] Raphael Lewis and Sean P. Murphy, Boston Globe Staff, 2/9/2003

[2] Willaim Shakespeare - Antony and Cleopatra