Operation Excellence

June 13, 2012

Project Management – Getting it Done!

Projects:

- Every organization has projects, but very few organizations do projects well.

Why?

- Organizations usually know what needs to be done, but they don't know how to get things done.

Then

- Even if you know what needs to be done, when you don't know how to get things done, they are rarely completed on time.

How's that for some common sense statements?

Typical results for project management:

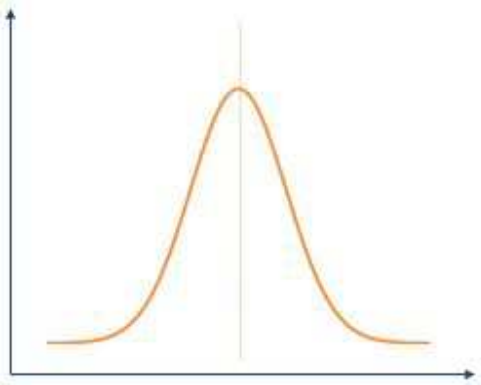
- Over 80% of IT projects are delivered late and over budget. Nearly 60% of all IT projects are delivered with less functionality than originally promised.
- Delays of 100 percent are typical for high tech projects, despite the use of project management tools.
- Of the ten largest defense procurement projects, 70 percent are delivered late and over budget.

(Source: Realization Technologies, Inc. – web page)

I doubt if there is a more lucrative area for improvement of the world's gross domestic output than collectively improving project management. As I see companies take on projects, rarely are the projects completed on time, under budget, or deliver the anticipated results. [It seems there is a far too common belief that if you put a project in Microsoft® Project and can produce nice graphical reports for management then the project is being managed! That is about as misguided as saying "pencils control how we spell words".]

There is some science behind the problem of project management --specifically, the perceived reality of expected time to complete a task. Most project managers (generous use of the word "manager" here as it is rarely realized by these folks) anticipate tasks completion times to resemble a normal bell curve.

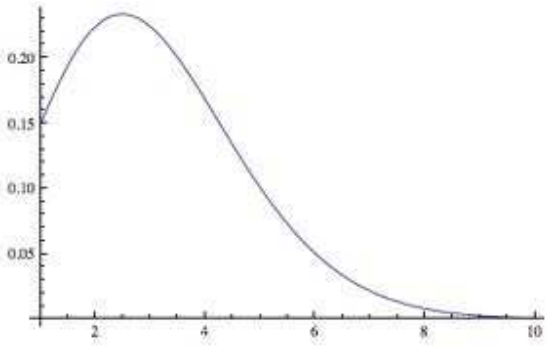
(The following images aren't perfect, -- scale and values… but I found them quickly and copied them off of the internet to illustrate my point).



Typical bell curve – normal distribution.

For example, we could say that a task is anticipated to take 3.5 days… a small percentage of the time it will be completed in a very short period of time i.e., 1 day … a similar percentage of the time it will take a longer period of time… i.e. 7 days. Typically there are two errors made by project managers… 1) tasks are scheduled with a high safety factor built into each task… probably the expected completion time with at least 1 or 2 standard deviations of safety. In this example a typical "safety" factor is used and the task would be scheduled for 4.5 to 6 days.

2) The second largely unrealized error is that in the reality is that task completion time is not a bell curve phenomena … it more often is a Poisson distribution as seen drawn here.



Typical Poisson distribution.

As an example… consider a basic task such as commute time from work to your home. Your average time might be 12 minutes. If you hit every traffic light "green" it might take as little as 10 minutes. You will never physically be able to make the drive in a negative amount of time. If the weather is bad (infrequently) it might take you 30 minutes, or if you stop and get a gallon of milk or have a beer with friends… it will take you significantly longer.

If we use the values on the Poisson curve that I have posted above, the expected value is probably 2.5 (days)… for scheduling with a +2 standard deviation safety factor would allow about 6 (days) – even more safety value is added to the schedule than the usual assumption of the bell curve.

We usually see that we have "buffered" each task… the very nature of measuring the time for completion of each task mandated by the widely used management technique of measuring each individual intermediate due date. (Remember the old phrase: "tell me how you measure me and I'll tell you how I'll behave"). It is very difficult to get folks to provide estimated task completion times with a 50% probability of it taking longer!

Ok… I'll get off of the statistics now… when you have projects with dozens (or even hundreds) of dependent tasks, the compound amount of safety time that is typically incorporated is probably 50% of the total project time line… YET WE SEE THAT THEY STILL MISS COMPLETING (the project) ON TIME!

What's wrong here… let's consider what is really going on here...

1. You have dependent events
2. You have variations in expected completion times
3. You most probably have uneven loads on critical resources (resources that may be required on multiple projects can really "git ya")
4. Multi-tasking… (There are some great articles out there on the "evils of multi-tasking" – I won't go into that here).
5. By managing every detail… you lack focus.

How can we manage projects better? Critical Chain Project Management (CCPM)

- Define the project's **Critical Chain**… The critical chain is the critical path (longest chain of dependent events) **with the addition of resource contention**. (I rarely see even very competent Microsoft® Project practitioners ever utilize Project's "critical path" capability – let alone consider resource contention.)
- Strip out the usual buffering of each task (the more than 50% probability time for each task) of the project and as a rule of thumb take ½ of that amount and add it to the end of the project time line as a project buffer.
- Manage the project by determining the compound effect of variations in task completion dates on the total project buffer that you have at the end of the time line.
- There are some subtle details to add to the above, but beyond what I can list here in a 4 page newsletter…

Critical Chain Project Management is a development that came out of the Goldratt Institute about 10 years after they initially developed Drum-Buffer-Rope scheduling techniques for manufacturing. The technique has been credited with phenomenal results. [You can do google searches and find a large number of testimonials… one site that I looked at while writing this was www.realizationtechnologies.com]

A great 15 minute video by one of the developers of this technique, Rob Newbold is at:
http://www.youtube.com/watch?v=7Xf-waj23P8

[By the way, Pro Chain Software that is compatible with Microsoft® Project 2010 is relatively inexpensive… you can purchase it for about $700…. I personally haven't used it… but if you are managing projects and become interested in this approach… that is very minimal compared to the benefits that can be derived. (I am not getting compensated in any way for mentioning that product in this newsletter. – There are several companies out there that have similar products.)]

I personally have used this technique several times on projects. Capital equipment manufacturing project management, and a project that relocated a manufacturing facility. The capital equipment manufacturing project demonstrated a complete turnaround in customer relations as the projects were delivered on time and (daily) customer communications were clear, concise and readily accepted. The plant move project was completed in ½ the projected time estimate and about 40% under budget even though the project was expanded dramatically from the initial project approval request.

Initially, you will need help implementing this technique into your project management process. It is not hard, but it challenges some paradigms that have existed far too long in project management techniques. [That statement is a "plug"—we can help!]

I took a “shot” at Microsoft® Project earlier. It is a widely and commonly used tool… that even if USED AS DESIGNED will not correct the issues outlined above. Corporate policies of “all projects must be on Microsoft® Project” don’t insure anything other than lots of detailed graphs and charts. I rarely see the Project Managers trained in using it as it is intended to be used (realistically, nobody has been trained in it… just on-the-job “buy and use it” experience), let alone using it in a way that can really help projects be managed adequately.

I have worked extensively with Microsoft® Project (2003 and 2007)… there is now a Project 2010. Today while writing this…– I went to the Microsoft website for Project and under “help” entered “critical chain”… it was interesting that the search yielded “no returned results” – yet if you goggle Critical Chain Project Management, you will get more than 10,000,000 results. Hmmmmmmmmmmmmmm…???

Folks, this is a silver bullet for project management… no doubt about it. If you want to learn more or have me help your organization become better at Project Management… we are most willing to do so.

All the best!

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