

### When Good Enough Makes a Project Early Enough or: Don't Try to Be On Time!

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#### What is this all about?

In 1993 a highly reputed oilfield services company hired me into their Austin offices to work in their Process Group.

We were four people in charge over software development process in fourteen engineering centers (Austin, Corte Madera, Sugarland, Houston, Tulsa, Stavanger, Oslo, Hannover, Montrouge, Clámart, Machida, Gatwick, Cambridge and Delft), in seven countries (USA, Japan, The Netherlands, Germany, UK, France, and Norway)



#### **Peter's Story**

One other addition to the team was Pete B. He came preceded by his record as a PM: 12 projects in the last two years, all on time, all under budget.

He was the Master of the Universe of Project Managers.



He held the key to all things good.

Pete and I worked together for over two years. He got tired of Process Improvement and "went back to work" as a PM, in California.



#### In The Two Years...

I worked with Pete in many things.

Until one day, already friends, I challenged the notion that he had really made the 12 projects come in on time. I accused him of sandbagging his estimates.

Pete is too great a person to let such pettiness get to him. Instead...

...He revealed his secrets!



#### Will Pete's Secrets Work for You?

Well, they might.



- your managers really manage your teams not just gather administrative data
- job assignments can be made flexible and
- individuals can be made accountable



#### Agenda

Mike's Pool Party (a parable of sorts)

Task Assignment and the On Time Fallacy

To Be On Time You Have to End Early

Walkthroughs, Technical Reviews, Inspections and Grandfalloons

Connecting the Dots



#### Mike's Pool Party

Every year, in June, Mike Grandstand III holds a grandiose, larger than life pool party.

It is the party that makes all parties small.

Door prizes include Porsches, Norwegian cruises and Polar Bear Sight Seeing Tours.

Wanda has never been invited to Mike's Annual Pool Party...

# Until Today!!!!



#### **Mike's Pool Party is Exclusive**

Mike only invites friends, or friends of his friends. (Although lately a malicious rumor states that he is inviting ALMOST everyone in town, but Wanda pays no attention to that. Why, he is inviting her!)

So he sends an invitation over mail, with an address and a date, but no directions.

Heck, if YOU are invited, you probably should know how to get there, anyway!



#### Invitation





#### Where the Heck is That Pool???

Wanda might have gotten the invitation by mistake, BUT SHE IS RESOLVED to go.

So, she googles up the address.



#### It's Only Twenty Five Miles Away

## Now that's a relief, because her car will not make it too far





#### **She Gets Turn x Turn Instructions**

She asks for time of arrival at each intersection.

She factors in an 18% increase due to the status of her car.

Now, she is ready!

Well, as soon as the day comes.



#### The Day is Here

Wanda starts her car, resolved to follow the plan to perfection.

She reads the map instructions step by step and gets on the road.

Traffic is almost nonexistent!

She arrives at the first check point EARLY!



#### She Is Early

Now what?

- Should she speed towards the next intermediate point, stretching the slack to make up for probable delays down the road or
- 2. Should she control to the sche is the catches up to her sche is the sche is





#### **Pete's Projects**

In Pete's Projects the planning phase included all stakeholders.

- mainly the team
- but also all others involved as suppliers of services or customers

Pete would present his plan in detail and request input from everyone AFTER letting them review the requirements and the plan overnight.

He then added corrections to this input from his own history data (no process database then).



#### Pete Pill of Wisdom I

Pete did not blindly follow the estimates of his teams, nor did he fail to consider the noise that particular individuals introduced into his estimates.

Pete considered what was possible UNDER the circumstances BASED ON HISTORY that took into account idiosyncratic behavior

- Mark never works on Friday afternoons, although he thinks he does
- Mary fails to consider rework in her estimates, typically a factor of 30%
- Jules' wife is about to have a baby, so the risk of him having to take time off is very large.



#### Pete the Risk Manager

Pete did a great job of understanding his teams as persons and professionals

His first secret is that: Do not follow history blindly, do not trust people's estimates blindly.



Treat the initial estimates as a risky proposition!



#### **Probability: Laws of Randomness**

Pete took the estimates as the mean value of a distribution. From his data he had reached an understanding:

- the estimates point to "the best expectation"
- perhaps there is a chance of making that date
- but there is a chance of being late.

Giving people a break, Pete thought of their estimates as the mean of a normal distribution:





#### **Progress Through the Tasks**

The Project can be considered as a network of tasks. If we never return to a previous task once we execute it, the graph has no loops.

This is a basic tenet of PERT and GANTT charts: no loops.

Slack time for a task is the amount of time (duration) it can be delayed without affecting the project end date

Critical path is set of tasks with longest duration, no slack, hence drives end date.



#### **Critical Path**

Given three tasks A, B, C, where

- A and B both must precede C, but can be done in parallel
- A takes 3 days
- B takes 7 days
- B is critical
- A has slack of 4 days

It could start 4 days late without delaying C



#### Critical Path BCFG Any delay here delays the end date





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#### More on Randomness

If we believe that the estimate points to the mean value, then there is equal chance of being late (ending the task after the estimate) as of being early (ending the task before the estimate). There is pretty much zero chance of ending on time.





#### Why Are we Never Early?

Because we never let this happen. When was the last time a programmer came to see you and said:

- "I could work on it some more days, but it is good enough already. Let's inspect it!"
- Or do you actually hear this more often?
  - "I need more time, with a few more days I can guarantee it is going to be a real beauty!"







There is only chance of being late!



#### **How Pete Manages Early Delivery**

Pete has three tools of the same kind to ensure some of the tasks (if not all) come in early.

- 1. Help the person in charge of the task with the tough decisions early enough
- 2. Force an objective decision of the readiness of the product at about 80% of the time to completion
- 3. If it can't be early, make it as good as it can be, so that there is no later rework.



#### **Pete's Tools**

- Walkthroughs
   with walkthroughs Pete forces "good" insight and
   feedback of senior people into every task
- Formal Technical Reviews with FTR's Pete forces objective judgment of the degree of readiness of a work product
- 3. Inspections

with inspections Pete guarantees there is the minimum amount of rework in the future for a work product.



#### **How Pete Uses Peer Reviews**





#### Walkthroughs

Author may distribute materials to review before review meeting

Reviewers examine materials on their own At meeting, author gives overview of work product Team attending has general discussion, during which author walks through work product in detail

Reviewers

- note errors
- suggest changes
- suggest improvements



Notes are consolidated into a report for project file Author may issue walkthrough report



#### **Technical Reviews**

Review leader identifies primary focus of review

- specific questions to address
- particular standards or specifications to meet
- interfaces or dependencies to examine
- Leader invites team
  - provides specific questions or issues to consider
- distributes materials

Reviewers examine materials on their own Leader conducts review

Leader issues report of findings

- list of issues and/or deficiencies
- recommendations of team on how to handle open issues
- action items





#### Inspections

Author and moderator distribute materials for review

- work product under inspection
- reference documents
- inspection checklists
- item logging forms

Reviewers examine material and log defects

Reviewers attend logging meeting

- create common list from individual input
- add items detected during meeting

no discussion of issues, suggestions
Item list used by author to conduct rework
Moderator verifies completion of rework



All participants record data on defects found, time

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#### Conclusions

Aiming to be on time is a guarantee of lateness if you do not allow for early completions on certain tasks

Early completion is not part of the repertoire of skills that academics have taught us

To achieve some early completion you have to force it to happen

You cannot sacrifice quality in the altar of timeliness or it will come back and bite you.



# Use Peer Reviews

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