Predicting the Results Of Agile Projects

Even when Outsourcing

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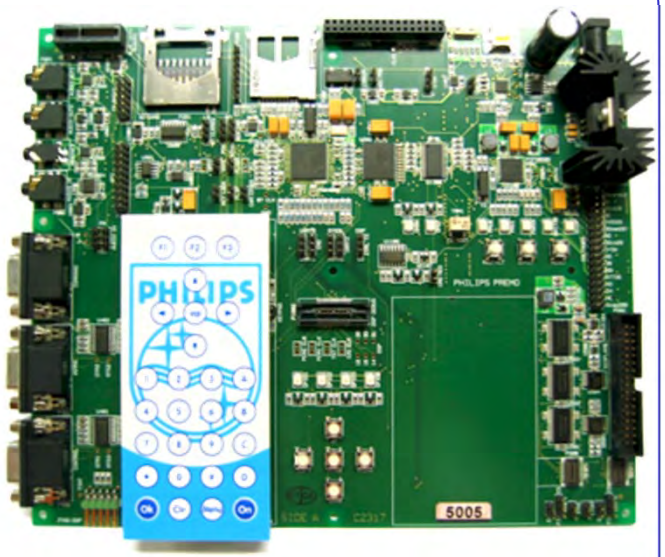


- **Project Coach**
  - Evolutionary Project Management (Evo)
  - Requirements Engineering
  - Reviews and Inspections

Result Management

Predicting the Result

- **Can we predict what will be done when ?**
- **Is this relevant at all ?**

*

Project ROI

Return on Investment (ROI)

- \+ **Benefit of doing** - huge (otherwise other projects would be more rewarding)
- – **Cost of doing** - project cost, usually minor compared with other costs
- – **Cost of doing nothing** - every day we start later, we finish later
- – **Cost of being late** - lost benefit

Ultimate Goal of a Project

Quality on Time

- **Delivering the Right Result at the Right Time, wasting as little time as possible** (= efficiently)

- **Providing the customer with**
  - what he needs
  - at the time he needs it
  - to be satisfied
  - to be more successful than he was without it
- **Constrained by** (win - win)
  - what the customer can afford
  - what we mutually beneficially and satisfactorily can deliver
  - in a reasonable period of time

Preflection, foresight, prevention

Insanity is doing the same things over and over again and hoping the outcome to be different ***(let alone better)***

Albert Einstein 1879-1955, Benjamin Franklin 1706-1790, it seems Franklin was first

Only if we change our way of working, the result may be different

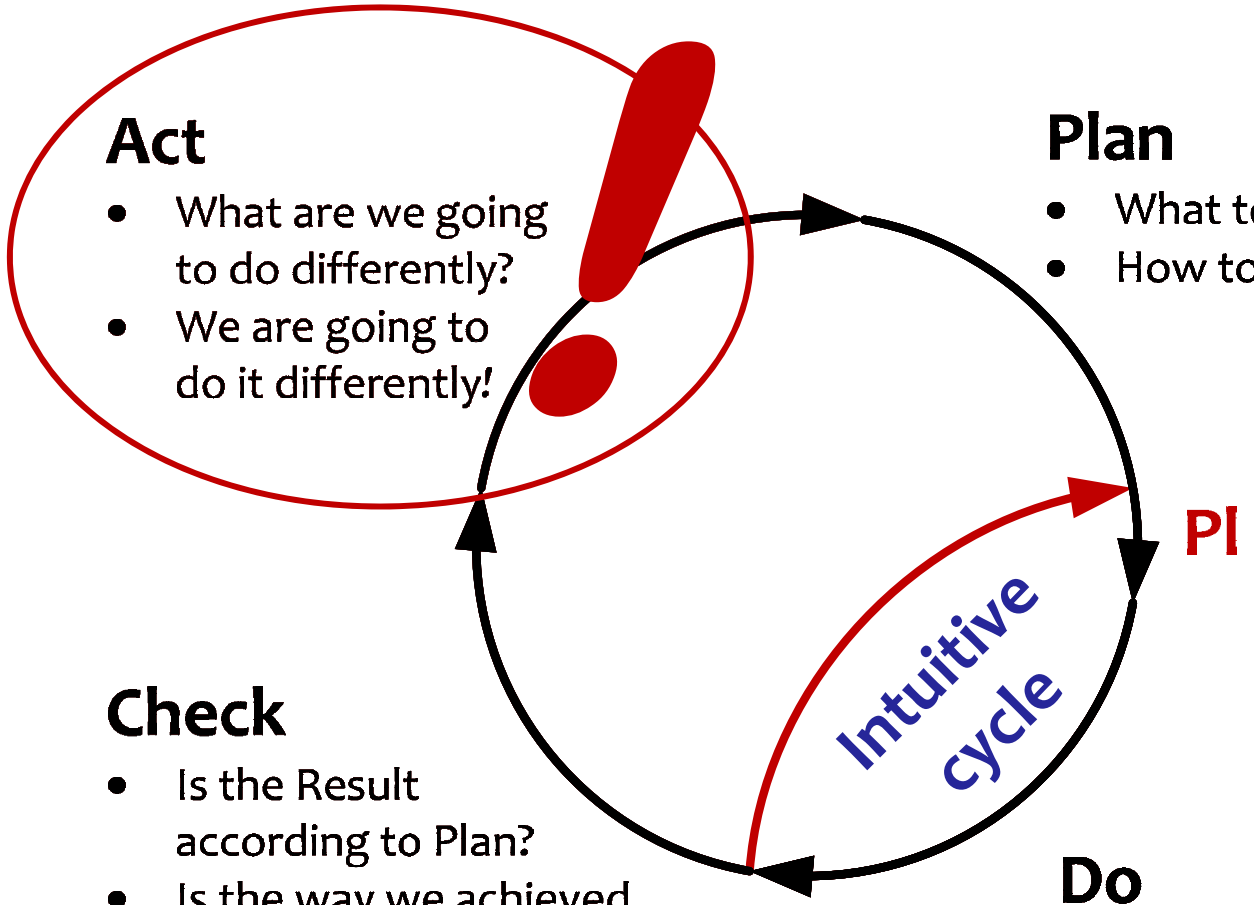
- **Hindsight is easy, but reactive**
- **Foresight is less easy, but proactive**
- **Reflection is for hindsight and learning**
- **Preflection is for foresight and prevention**

Only with *prevention* we can save precious time

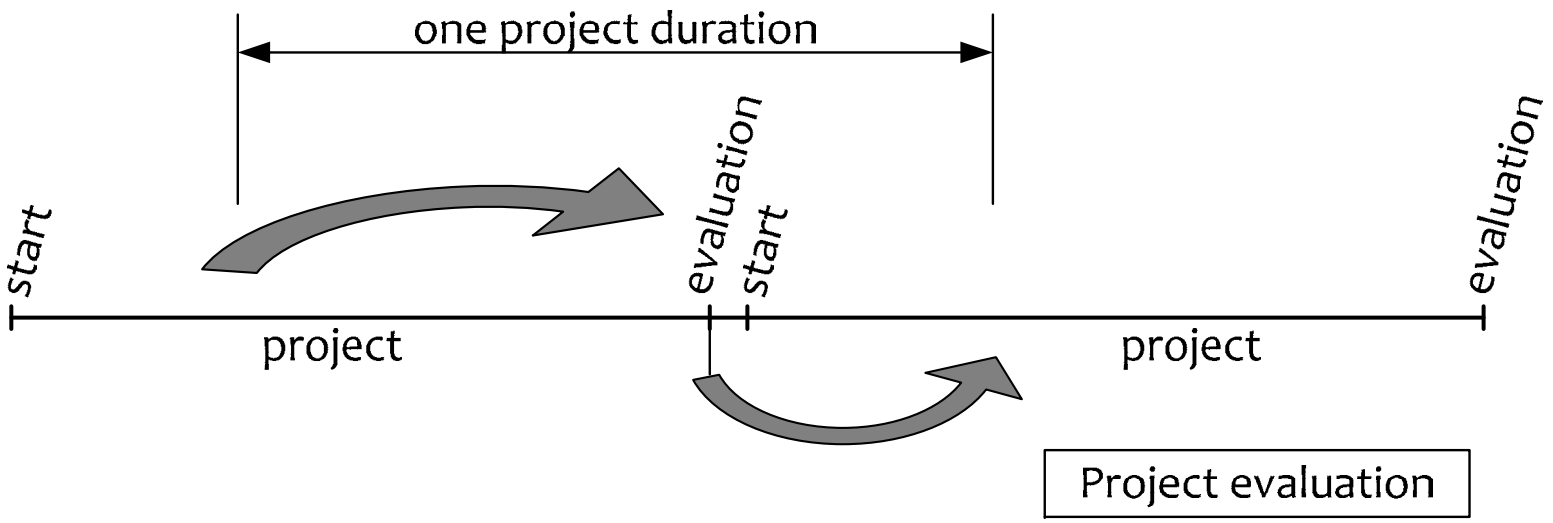
This is used in the Deming or Plan-Do-Check-Act cycle

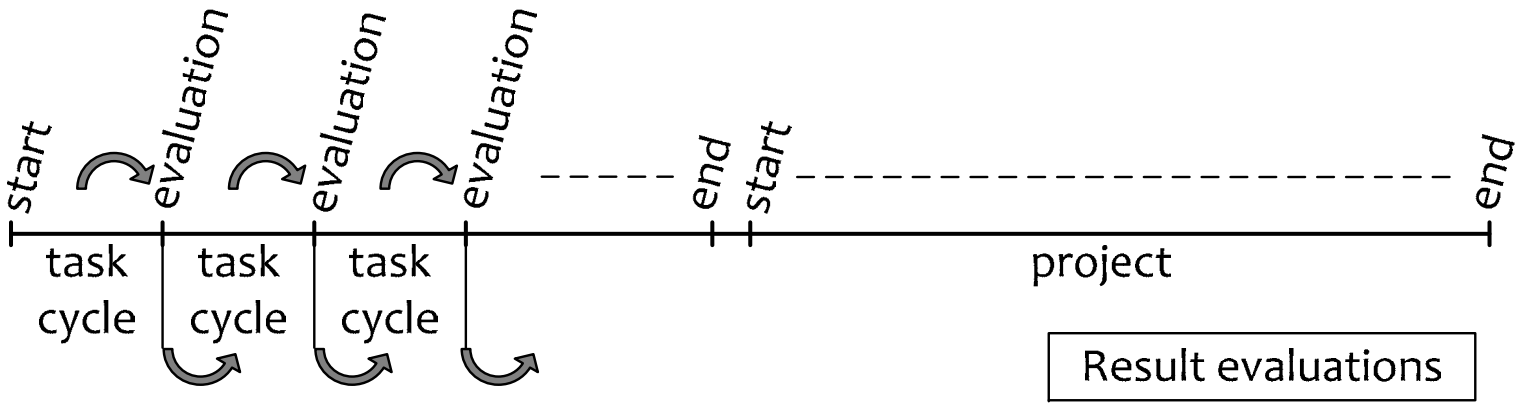
The essential ingredient: the PDCA Cycle

(Shewhart Cycle - Deming Cycle - Plan-Do-Study-Act Cycle - Kaizen)

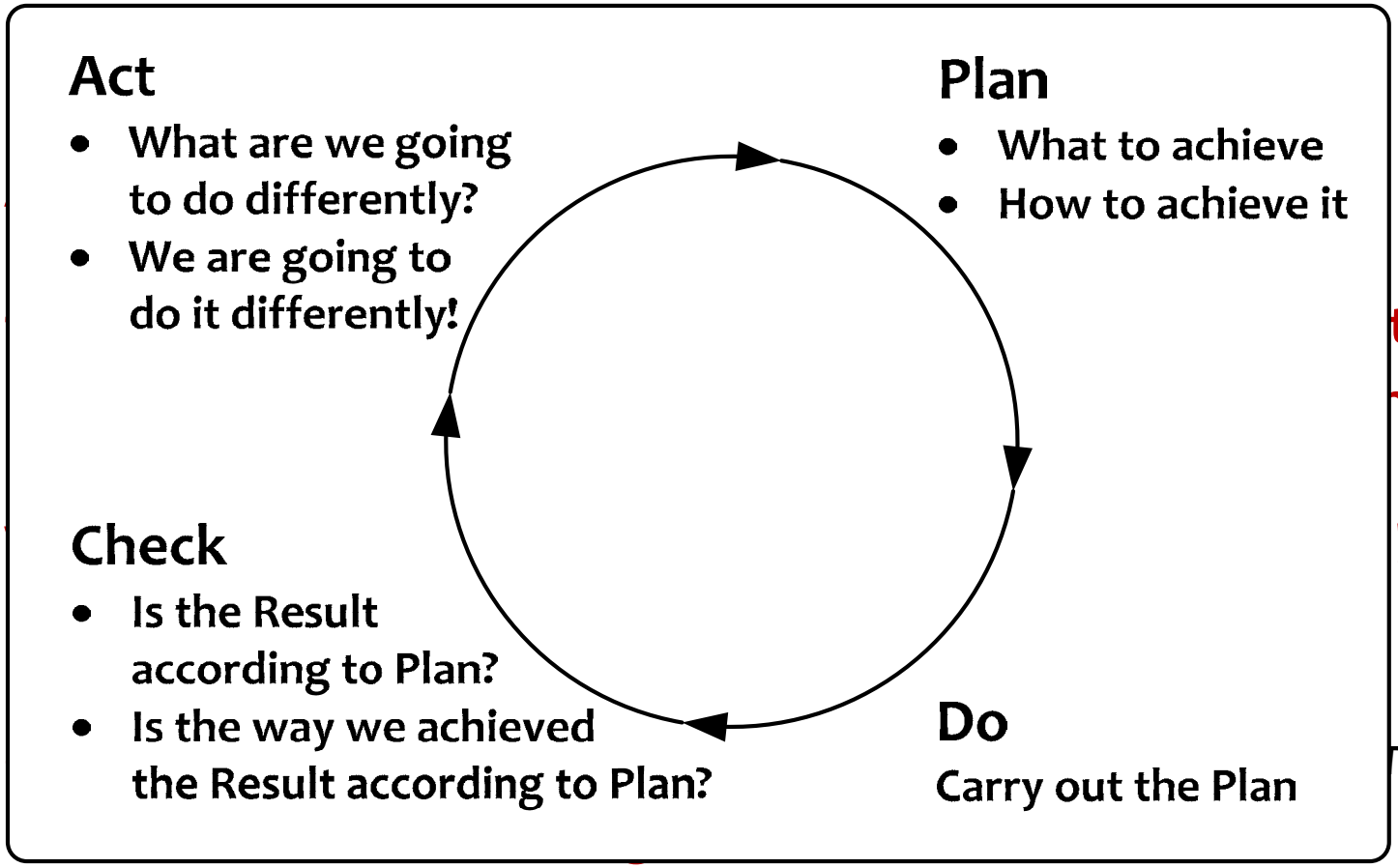


Project evaluations





Evo



t value

nt into

be

Thing"

successfully on time, or earlier

Evolutionary Project Management (Evo)

- **Plan-Do-Check-Act**
  - The powerful ingredient for success
- **Business Case**
  - *Why* we are going to improve *what*
- **Requirements Engineering**
  - *What* we are going to improve *and what not*
  - *How much* we will improve: quantification
- **Architecture and Design**
  - Selecting the optimum compromise for the conflicting requirements
- **Early Review & Inspection**
  - Measuring quality while doing, learning to prevent doing the wrong things

Right product

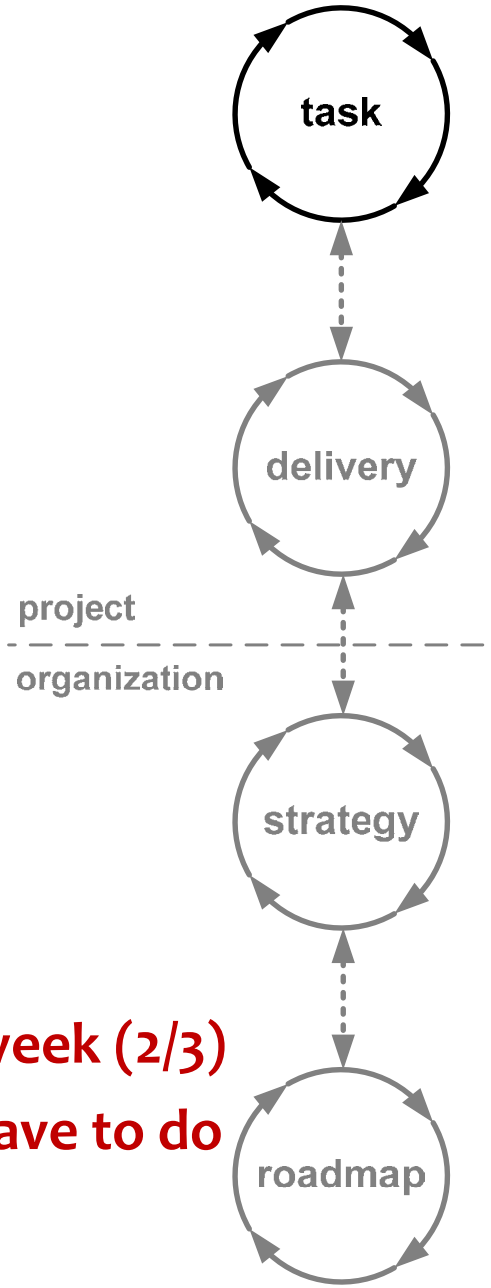
Evo Project Planning

- **Weekly TaskCycle**
  - Short term planning
  - Optimizing estimation
  - Promising what we can achieve
  - Living up to our promises
- **Bi-weekly DeliveryCycle**
  - Optimizing the requirements and checking the assumptions
  - Soliciting feedback by delivering Real Results to *eagerly waiting* Stakeholders
- **TimeLine**
  - Getting and keeping control of Time: Predicting the future
  - Feeding program/portfolio/resource management

Right time

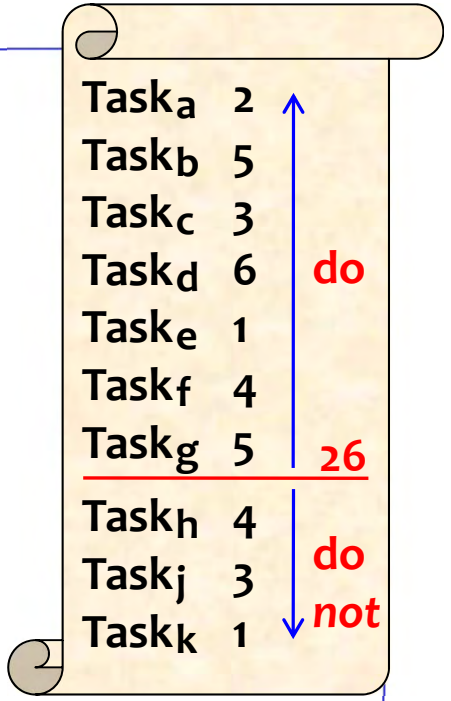
Evo Planning: Weekly TaskCycle

- Optimizing the efficiency of what we do
- Are we *doing* the right things,
  in the right order,
  to the right level of detail for now
- Optimizing estimation, planning and tracking abilities to better predict the future
- Select highest priority tasks, never do any lower priority tasks, never do undefined tasks
- There are only about 26 plannable hours in a week (2/3)
- In the remaining time: do whatever else you have to do
- Tasks are always done, 100% done



Every week we plan

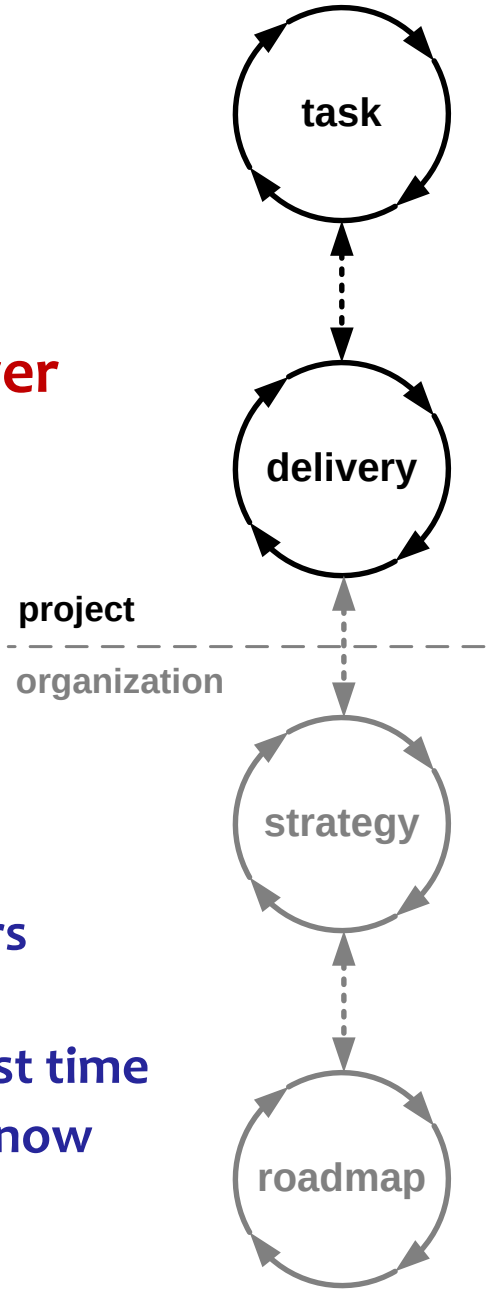
- How much time do we have available
- 2/3 of available time is net plannable time
- What is most important to do
- Estimate effort needed to do these things
- Which most important things fit in the net available time (default 26 hr per week)
- What can, and are we going to do
- What are we *not* going to do



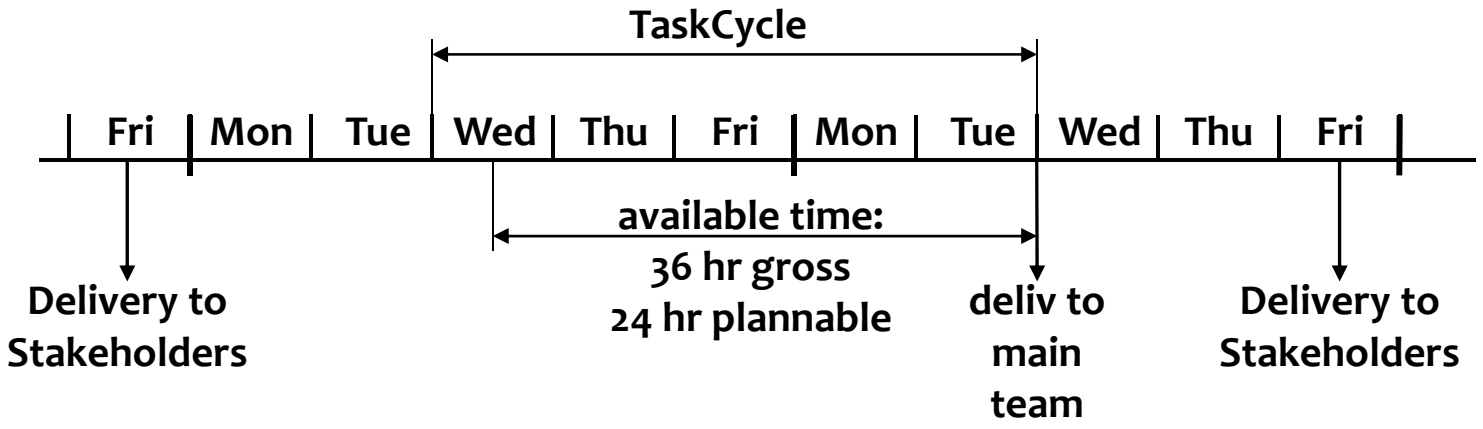
2/3 is default start value
this value works well in development projects

DeliveryCycle

- Optimizing the efficiency of what we deliver
- Are we delivering the right things,
  in the right order
  to the right level of detail for now
- Optimizing requirements
  and checking assumptions
  1. What will generate the optimum feedback
  2. We deliver only to eagerly waiting stakeholders
  3. Delivering the juiciest, most important
     stakeholder values that can be made in the least time
  - What will make Stakeholders more productive now
- Not more than 2 weeks



Designing a Delivery



Serge (ProjLead)	
MbWA	3
Planning nxt wk	3
Work for deliv	4
-	6
-	2
-	1
-	5
Total	24

Gregory	
Draft design	6
Finish design	6
Work for deliv	3
-	1
-	2
-	2
-	3
-	5
-	6
XMLa	4
XMLb	4
Total	42

Gregory (later)	
Draft design	0
Finish design	0
…	

Jerome	
XMLa	3
XMLb	3
…	

Agile, but will we be on time ?

- Organizing the work in very short cycles
- Making sure we are doing the right things
- Doing the right things right
- Continuously optimizing (what not to do)
- So, we already work more efficiently

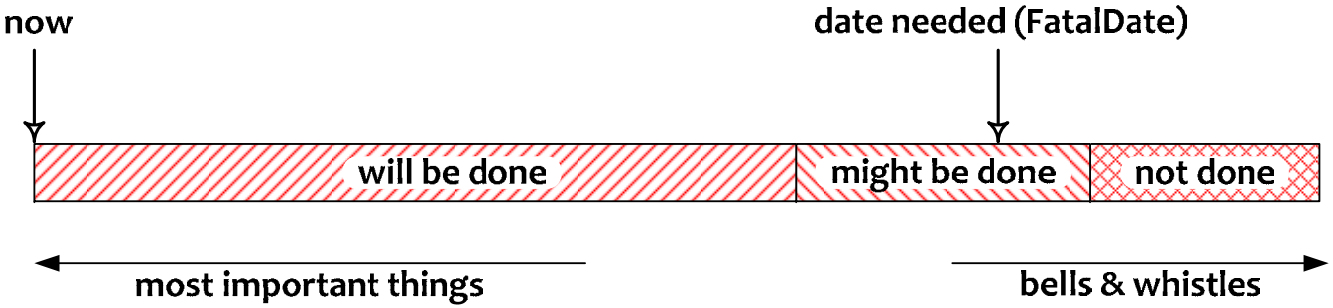
but ...

- How do we make sure the whole project is done on time ?

TimeLine

What the customer wants, he cannot afford

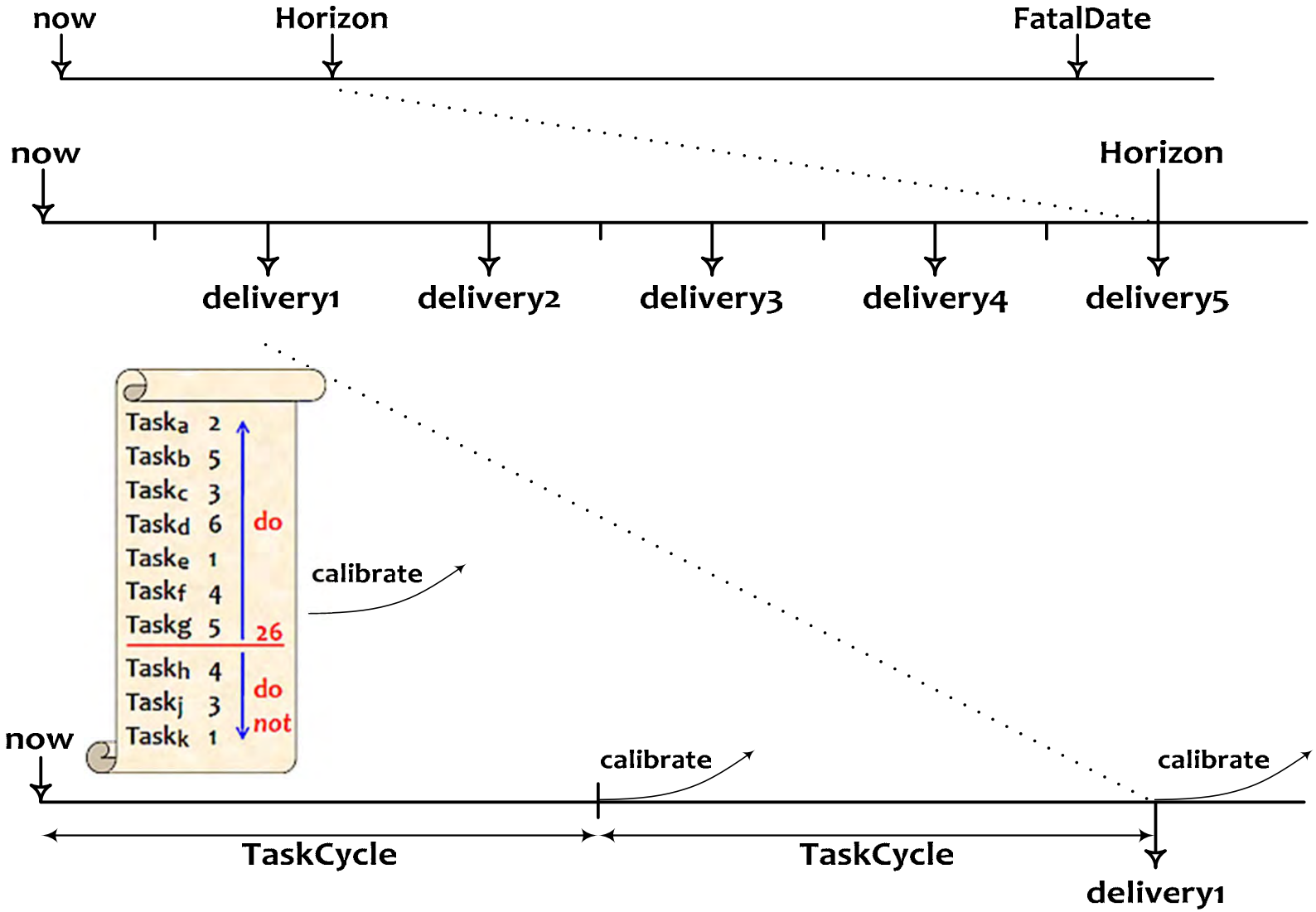
Standard Projects



Evo

If it easily fits ...

Result to Tasks and back



Calibration

Activity	Estimate	Real
Act1	Ae1	Ar1
Act2	Ae2	Ar2
Act3	Ae3	Ar3
Act4	Ae4	Ar4
Act5	Ae5	Ar5
Act6	Ae6	Ar6
Act7	Ae7	Ar7
Act8	Ae8	Ar8
Act9	Ae9	Ar9
Act10	Ae10	Ar10
Act11	Ae11	
Act12	Ae12	
Act13	Ae13	
Act14	Ae14	
Act15	Ae15	
Act16	Ae16	
Act17	Ae17	
Act18	Ae18	
Act19	Ae19	
Act20	Ae20	
Act21	Ae21	
⋮	⋮	
⋮	⋮	
⋮	⋮	
Act…	Ae…	

ratio ΣAr/ ΣAe in the past

← now

predicted Value Still To Earn in the future

← then

← then2

Calibration Factor

$$\frac{\sum_{now-1}^{now-n} Ar}{\sum_{now-1}^{now-n} Ae}$$

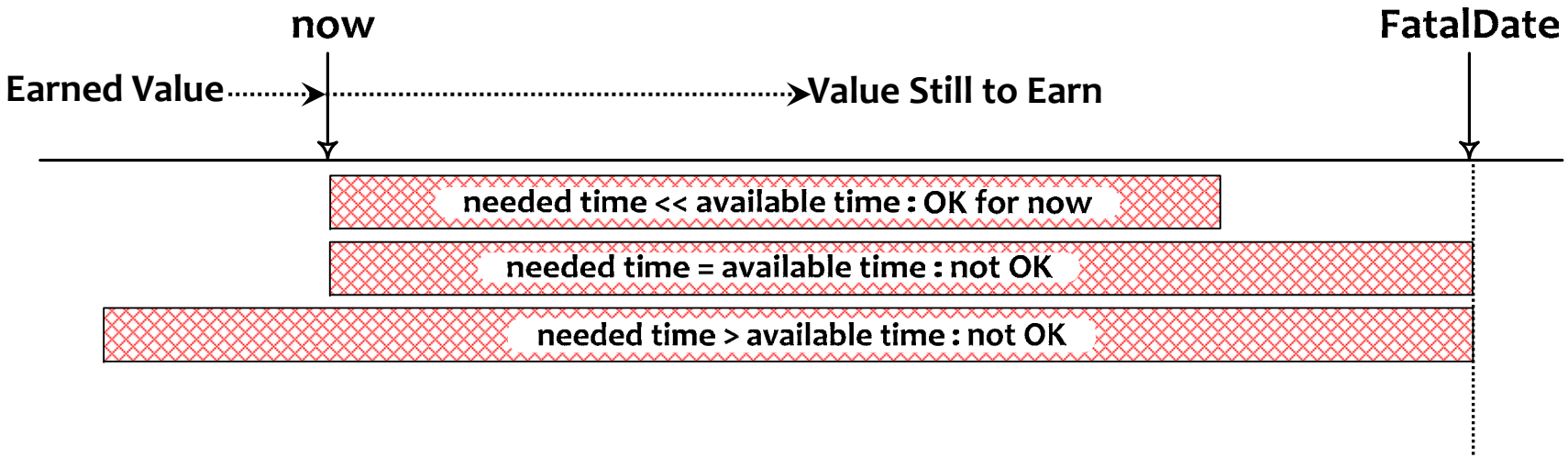
Value Still To Earn

$$\textit{Calibration Factor} * \sum_{now}^{then} Ae$$

Predicting *what* will be done *when*

Line	Activity	Estim	Spent	Still to spend	Ratio real/es	Calibr factor	Calibr still to	Date done
1	Activity 1	2	2	0	1.0			
2	Activity 2	5	5	1	1.2	1.0	1	30 Mar 2009
3	Activity 3	1	3	0	3.0			
4	Activity 4	2	3	2	2.5	1.0	2	1 Apr 2009
5	Activity 5	5	4	1	1.0	1.0	1	2 Apr 2009
6	Activity 6	3				1.4	4.2	9 Apr 2009
7	Activity 7	1				1.4	1.4	10 Apr 2009
8	Activity 8	3				1.4	4.2	16 Apr 2009
↓	↓							
16	Activity 16	4				1.4	5.6	2 Jun 2009
17	Activity 17	5				1.4	7.0	11 Jun 2009
18	Activity 18	7				1.4	9.8	25 Jun 2009

What do we do if we see we won't make it on time ?

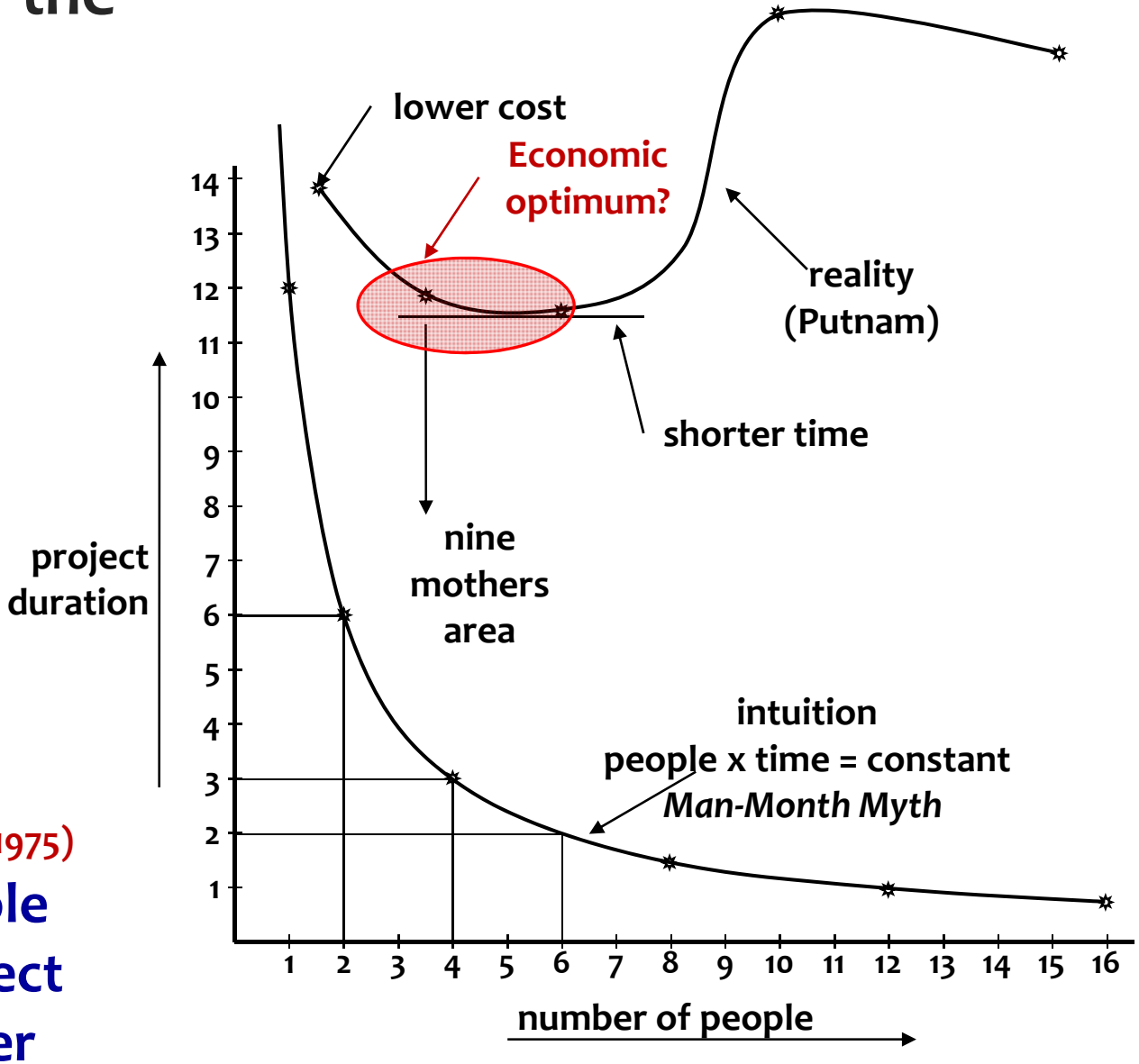


- **If it doesn't fit ... count backwards**

Deceptive options

- **Hoping for the best** (fatalistic)
- **Going for it** (macho)
- **Working Overtime** (fooling ourselves)
- **Moving the deadline**
  - Parkinson's Law
    - Work expands to fill the time for its completion
  - Student Syndrome
    - Starting as late as possible,
      only when the pressure of the FatalDate is really felt

The Myth of the Man-Month



Brooks' Law (1975)

Adding people to a late project makes it later

Saving time

Continuous elimination of waste

We don't have enough time, but we can save time *without negatively affecting the Result !*

- **Efficiency in *what* (*why*, for *whom*) we do** - doing the right things
  - *Not* doing what later proves to be superfluous
- **Efficiency in *how* we do it** - doing things differently
  - The product
    - Using proper and most efficient solution, instead of the solution we always used
  - The project
    - Doing the same in less time, instead of immediately doing it the way we always did
  - Continuous improvement and prevention processes
    - Constantly learning doing things better and overcoming bad tendencies
- **Efficiency in *when* we do it** - right time, in the right order
- **TimeBoxing** - much more efficient than FeatureBoxing