How to deliver Quality on Time

Delivering the Right Result at the Right Time

www.malotaux.eu/?id=conferences

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Niels Malotaux

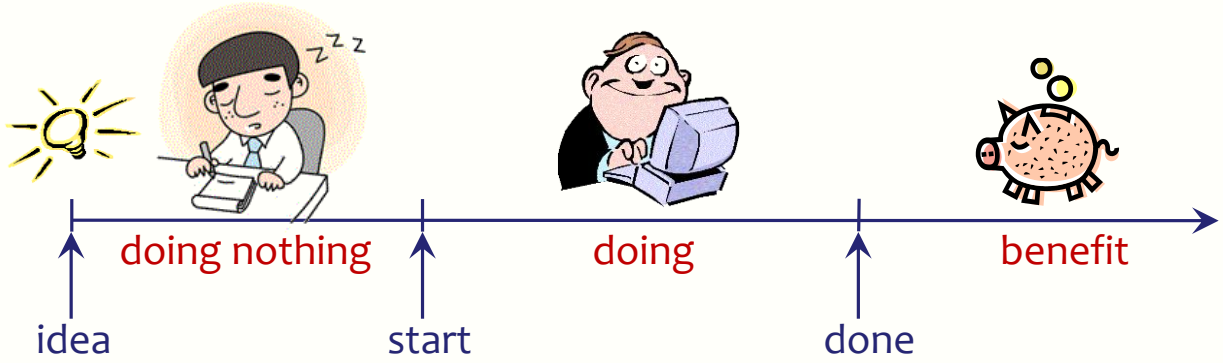
- Independent Engineering and Team Coach
- Expert in helping teams and organizations to quickly become
  - More effective - doing the right things better
  - More efficient - doing the right things better in less time
  - More predictable - delivering as needed
- Project rescue
- Embedded Systems architect (electronics/firmware)
- Project types
  electronic products, firmware, software, space, road, rail, telecom, industrial control, parking system

Quality On Time

Delivering
the Right Result
at the Right Time

The Importance of Time

Business Case
(why are we doing it)



Return on Investment (ROI)

- \+ Benefit of doing - huge (otherwise we should do something else)
- – Cost of doing - usually minor compared with other costs
- – Cost of being late - lost benefit
- – Cost of doing nothing yet - every day we start later, we finish later

Do you know the cost of one day of (unnecessary) delay ?

- What is the cost of your team per day ?
- What do you cost per day ?
  Note: that's not what you get !
- If you don't know the benefit, assume 10 times the cost
- How can you make decisions, if you don't know ?

Exercise in the Chat

just use nr) and cost,
like: 1) UKL 20,000
or: 3) ?? 5) ??

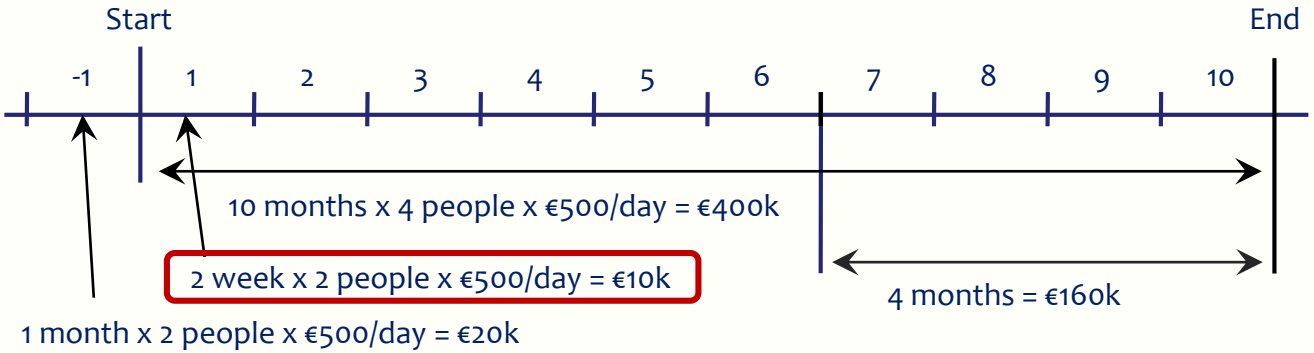
1) cost of one day delay ?
2) cost of one day of team
3) cost of one day of you
4) assumed multiplier
5) cost of one day delay !

- Say €400 per day
- 5 people x €400 = €2000
- Cost of delay 10 x €2000 = €20,000

if 5x:

- Cost of delay 5 x €2000 = €10,000

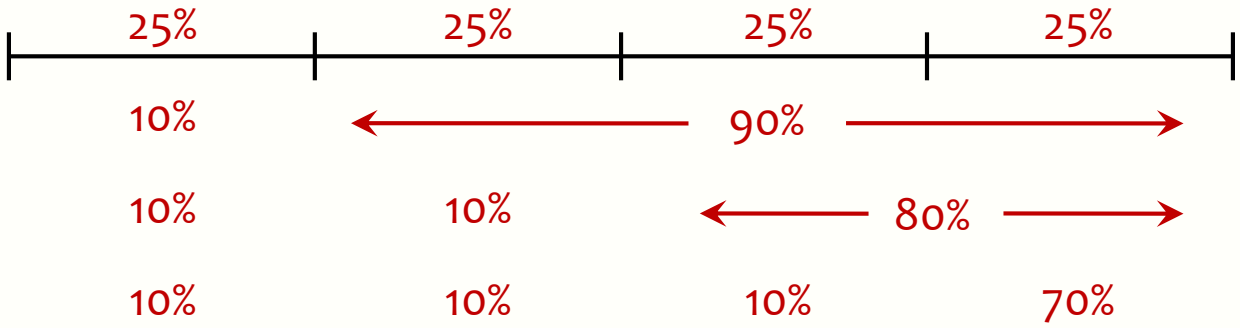
Time vs Budget ? - VOIP introduction project



- We can save 4 months by investing €200k → "That's too much !"
- It's a *nicer* solution - Let's do 2 weeks more research on the benefits
  PO → "Don't waste another 10k. Start working !"
- What are the expected revenues when all is done? → €16M/yr (€1.3M/mnd)
- So 2 weeks extra doesn't cost €10k. It costs €16M/26 = €620k
- And saving 4 months brings €16M/3 = €5M extra

➔ Invest that €200k NOW and don't waste time !

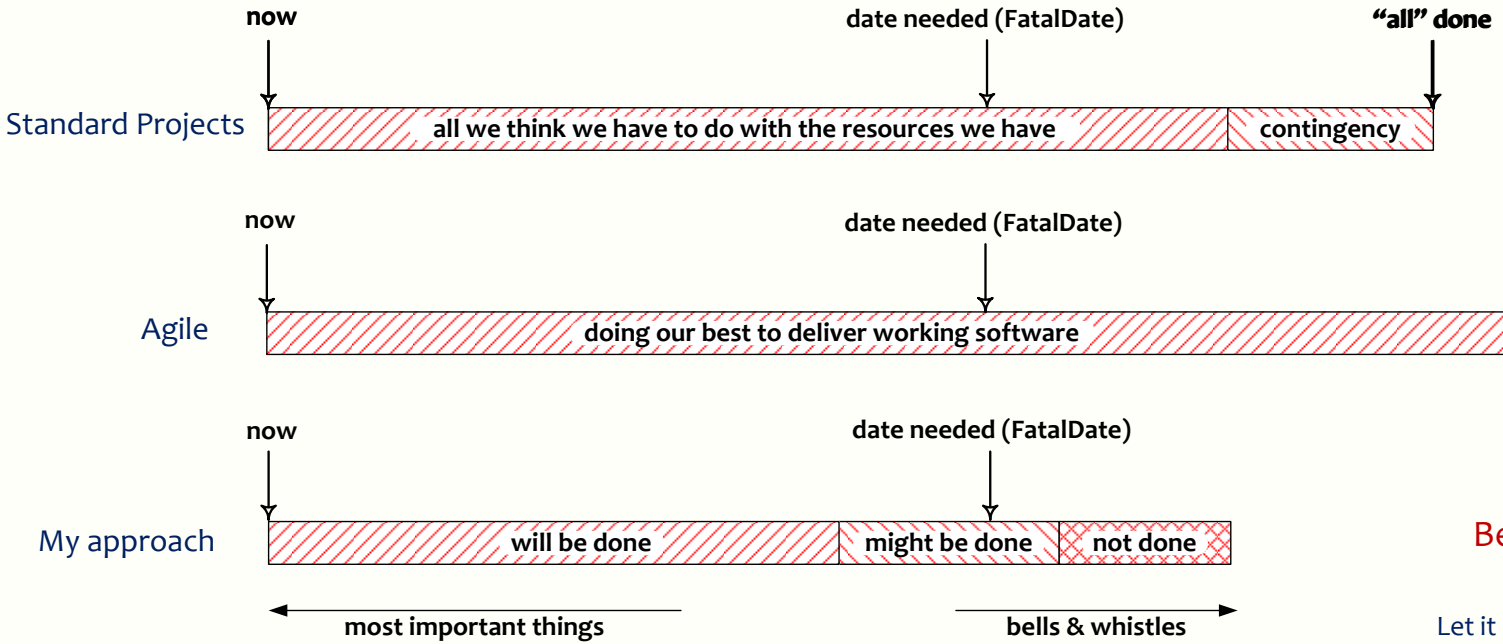
4 week project



How long do such projects usually take ?

TimeLine

How do we know that we do, and get,
what is needed, *when* it's needed ?



Better 80% 100% done,
than 100% 80% done

Let it be the most important 80%

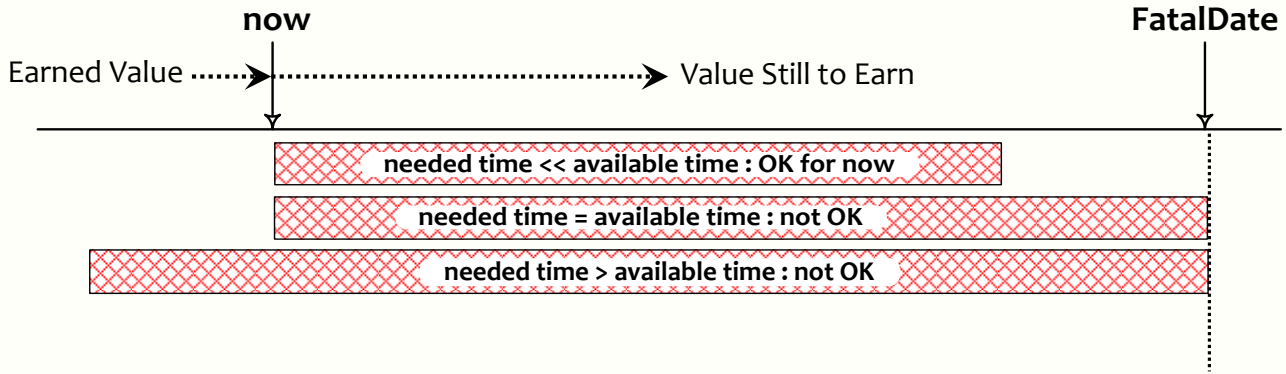
Ultimate Goal of a What We Do
(for our salary)

Quality on Time

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

- Providing the customer with
  - what they need
  - at the time they need it
  - to be satisfied
  - to be more successful than they were 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

At the time they need it



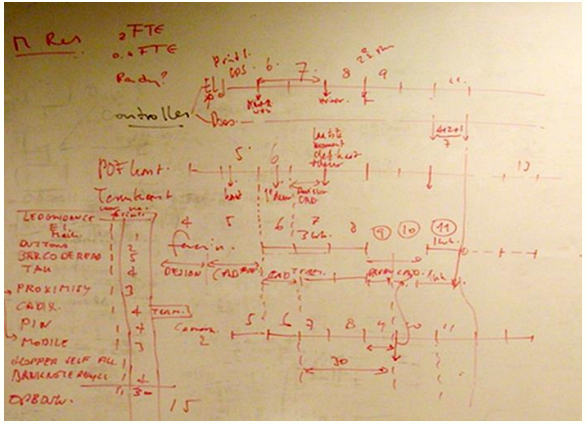
- Value Still to Earn

versus

- Time Still Available

If the match is over, you cannot score a goal

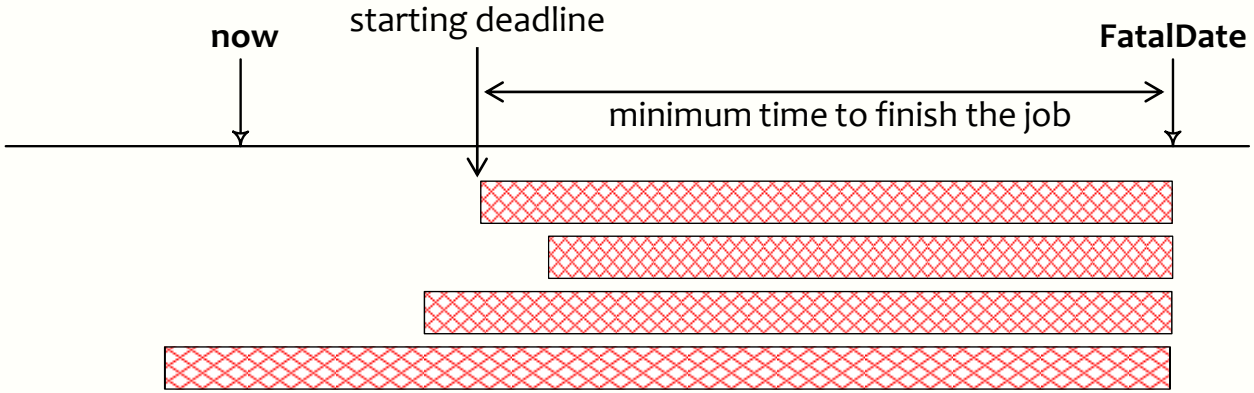
Even more important: Starting Deadlines



To meet Delivery Deadlines, focus on Starting Deadlines

Starting Deadline

- Last day we can start to deliver by the delivery deadline
- Every day we start later, we will end later



How to be on time

Exercise in the Chat

1) Are your deliveries usually on time ?
2) Quality compromised to be on time ?

- Are your deliveries usually on time ?
- If yes, is the quality compromised for being on time ?
  - That's not 'on time' !
  - What we deliver should simply work

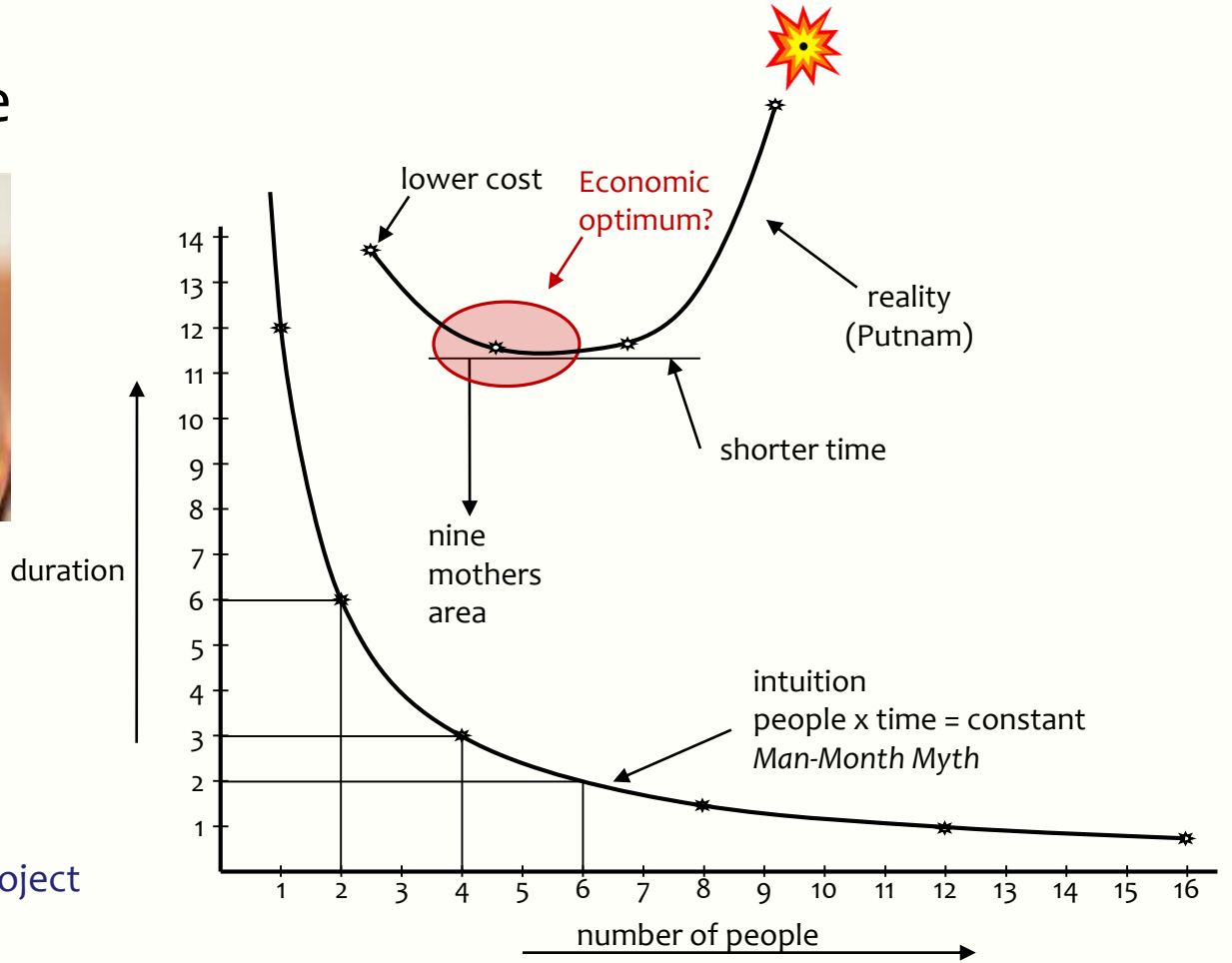
- How can we save time, without compromising quality ?

- 7 options

Deceptive options

1. Hoping for the best (fatalistic)
2. Going for it (macho)
3. Working Overtime (fooling ourselves and our boss)
4. 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

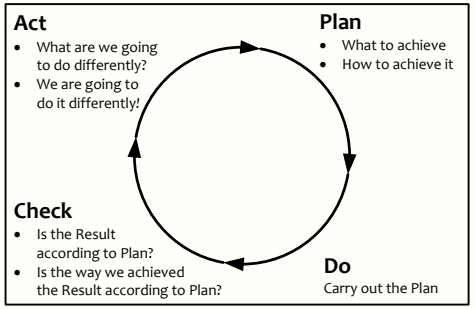
5. Adding people



Brooks' Law (1975)
Adding people to a late project
makes it later

6. Saving time

Continuous elimination of waste (www.malotaux.eu/?id=essenceoflean)

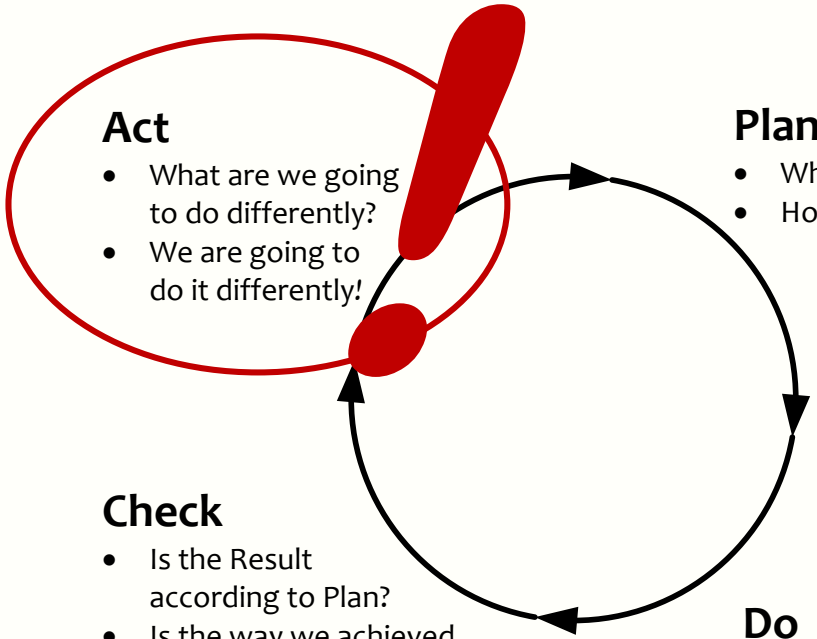


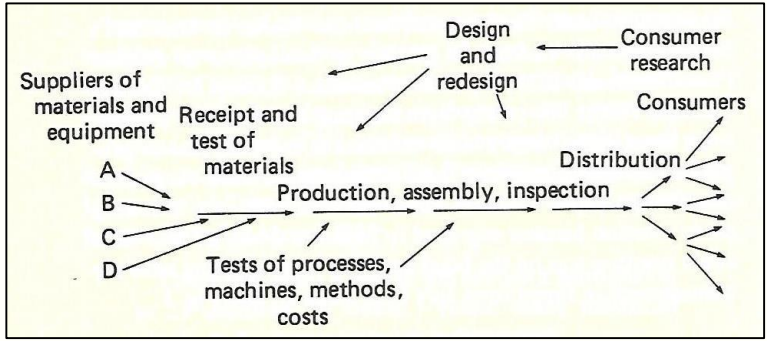
We don't have enough time, but we can save time
without negatively affecting the Result !

- Efficiency in *what* (*why*, for *whom*) we do - doing the right things (www.malotaux.eu/?id=evo)
  - *Not* doing what later proves to be superfluous
- Efficiency in *how* we do it - doing things differently
  - The product (www.malotaux.eu/?id=designlog)
    - Using proper and most efficient solution, instead of the solution we always used
  - The project (www.malotaux.eu/?id=projectmanagement)
    - Spending less time, instead of immediately doing it the way we always did
  - Continuous improvement and prevention processes (www.malotaux.eu/?id=PDCA)
    - Constantly learning doing things better and overcoming bad tendencies
- Efficiency in *when* we do it - right time, right order (www.malotaux.eu/?id=timeline)
- TimeBoxing - much more efficient than FeatureBoxing (www.malotaux.eu/?id=timeboxing)

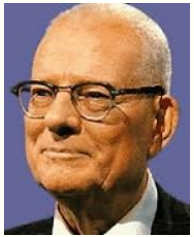
The secret weapon: PDCA

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



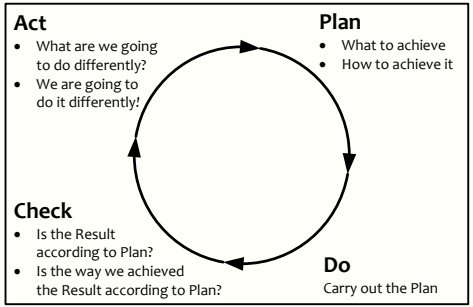


Deming: Out of the Crisis



Quality costs less

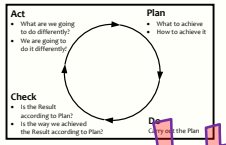
- Half of what we tend to do in our work, later will prove not to have been needed
  - If we see that after spending the time, the time is already wasted
  - If we see that before we spend the time, we still can decide not to waste the time
- If we save time, we have more time to do the right things right
- Doing things wrong, costs about *three times* as much as doing it right the first time
- Quality costs less
- We know we're not perfect, that's why we use PDCA



Evolutionary Delivery elements (Evo)

Tom Gilb

- 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 to 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
- 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



Why

What
How much
Are we done

How

Check and learn as early as possible

Zero Defects Attitude

Right Result

Quality On Time

Right Time

Evo Planning - Niels

Efficiency of what we do

Effectiveness of what we do

What will happen, and what will we do about it ?

Zero Defects video: www.youtu.be/INum9mYZ9R8

Quality

organising the

- what
- why
- for whom
- how much

high security

specification

99.9% <detection>

quantification

impact on result

suggested solution

90% → 95%

estimation

how much impact by this solution

learn

measurement

actual impact

91%

still not there?

stopping criteria

done

(but other solutions may still impact this one!)

on Time

organising the

- how
- when

what to achieve

what to do
what not to do

estimation

how much time

learn

time spent

actual time

Tom Gilb quote

- The fact that we can set numeric objectives, and track them, is powerful, *but in fact it is not the main point*
- The main purpose of quantification is to force us to *think deeply*, and *debate exactly*, what we mean
- So that others, later, *cannot fail* to understand us

Requirements with Planguage

ref Tom Gilb

quantifying the goal

SMART

Specific

Measurable

Attainable

Realizable

Time

Traceable

Definition:

RQ27: Speed of Luggage Handling at Airport

Scale: Time between <arrival of airplane> and first luggage on belt

Meter: <measure arrival of airplane>, <measure arrival of first luggage on belt>, calculate difference

Benchmarks (Playing Field):

Past: 2 min [minimum, 2018], 8 min [average, 2018], 83 min [max, 2018]

Current: < 4 min [competitor y, Jan 2018] ← <who said this?>, <Survey April 2018>

Record: 57 sec [competitor x, Jan 2018]

Wish: < 2 min [2022Q3, new system available] ← CEO, 19 Jan 2021, <document ...>

Requirements:

Tolerable: < 10 min [99%, Q4] ← SLA

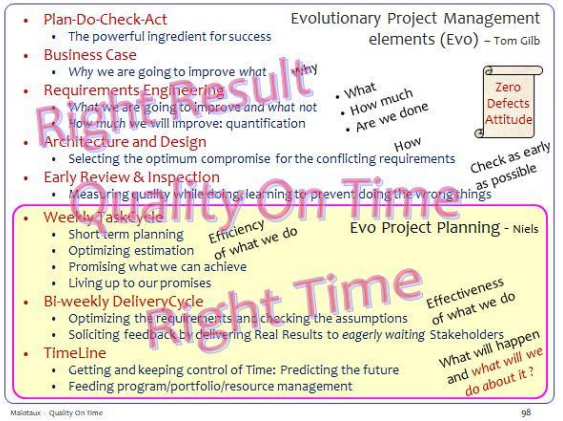
Tolerable: < 15 min [100%, Q4, Heathrow T4] ← SLA

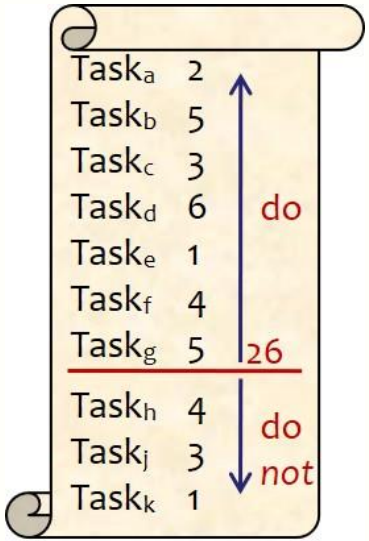
Goal: < 15 min [99%, Q2], < 10 min [99%, Q3], < 5 min [99%, Q4] ← marketing

Weekly TaskCycle

quantifying the way to get there

- 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 plannable time
  (default 26 hr per week)
- What can, and are we going to do
- What are we *not* going to do
- *Write it down ! Our fuzzy mind isn't good enough !*



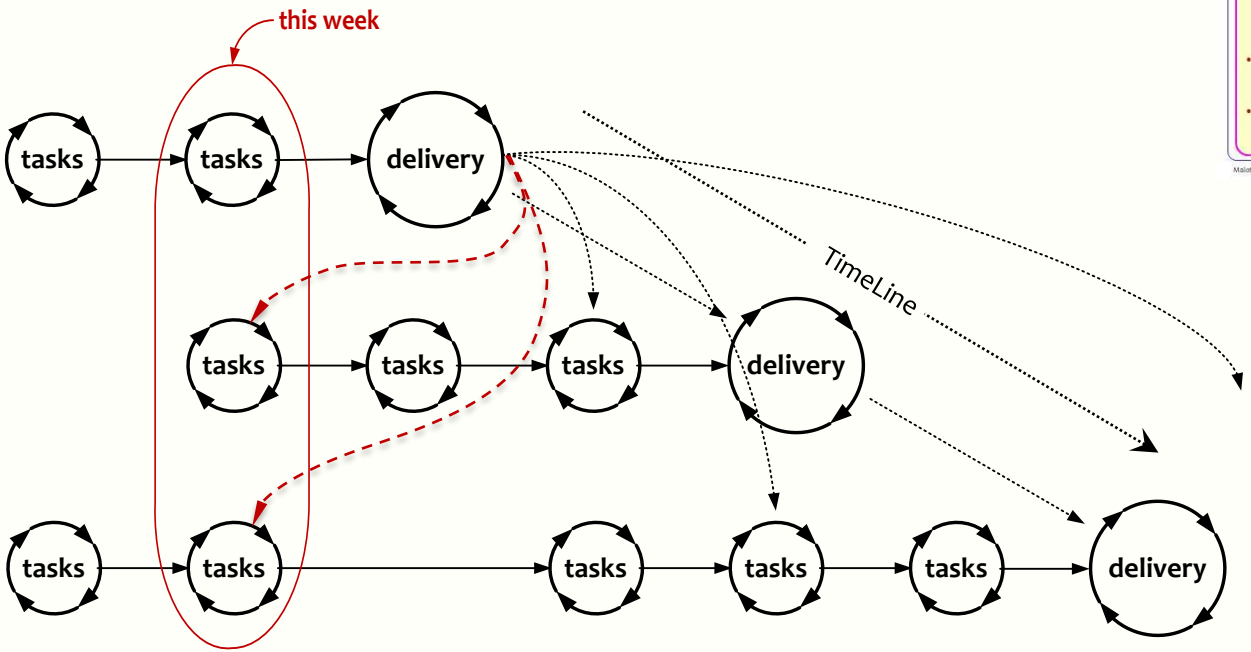


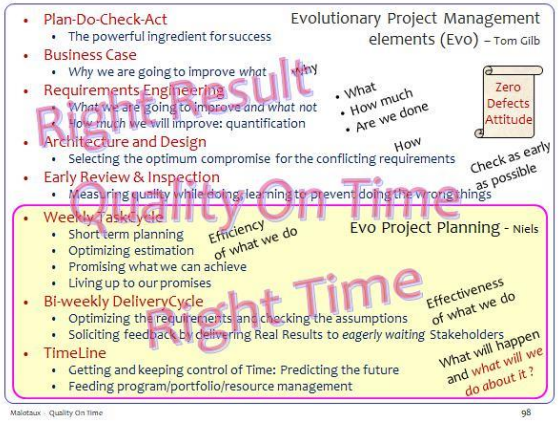
2/3 is default start value
this value works well with development work

Making best use of limited available time

- After the work, the time is already spent
- Before the work, we still can decide
  - What is really important
  - What is less important
  - What we must do
  - What we can do
  - What we are going to do
  - What we are not going to do
- Therefore we plan first, instead of finding out later
- We cannot change history, only improve the future

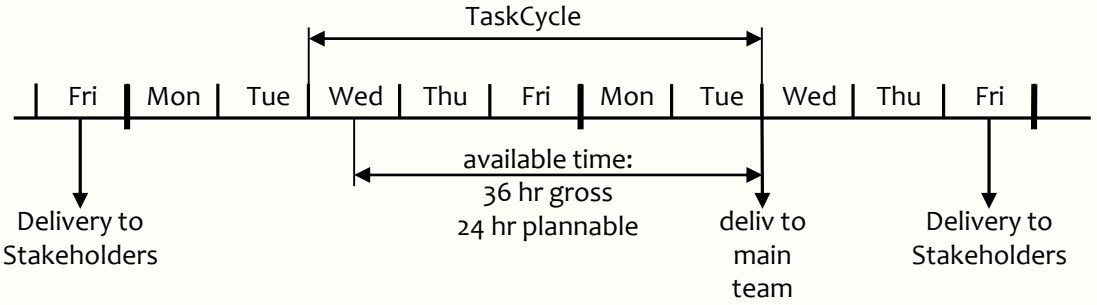
Tasks feed Deliveries





Designing a Delivery

not only *designing* the product
also *designing* the way to get there

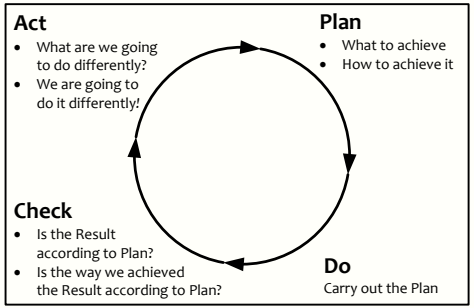


Serge (ProjLead)	
MbWA	3
Planning nxt wk	3
Work for deliv	4
-	6
-	2
-	1
-	5
Total	24

Gregory		Gregory (later)	
Draft design	6 →	Draft design	0
Finish design	6 →	Finish design	0
Work for deliv	3	...	
-	1		
-	2		
-	2		
-	3		
-	5		
-	6	Jerome	
XMLa	4 →	XMLa	3
XMLb	4 →	XMLb	3
Total	42	...	

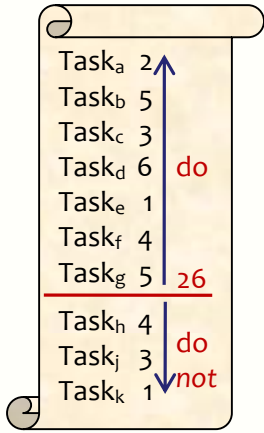
What would have happened if we wouldn't have *designed* this delivery?

Every week: reflecting and preflecting



- Was all planned work really done?
- If a Task was not completed, we learn:
  - Time spent but the work not done? → effort estimation problem
    - What did I think then, what do I know now, learn (Check and Act)
  - Time not spent? → time management problem
    - Too much distraction
    - Too much time spent on other (poorly-estimated) Tasks
    - Too much time spent on other things
- Close unfinished Tasks after having dealt with the consequences
  - Feed the disappointment of the "failure" into your intuition mechanism
  - Define remaining Tasks, and put on the Candidate Task List
  - Declare the Task finished after having taken the consequences
- Continue with planning the Tasks for the next week

Immediate consumption of metrics



cycle	who	task description	estim	real	done	issues
3	John	*Net time available: 26*				
		aaaaaaaaa	3	3	yes	
		bbbbbbbb [Paul]	1			
		ccccccccc	5	13	yes	
		dddddddd	2			
		eeeeeeee	3	2		
		fffffffffff	2	1		
		ggggggggg	6	7	yes	
		hhhhhhhh	4			
			26	26		
4	John	*Net time available: 26*				
		jjjjjjjjjjjjjj	3			for team x
		kkkkkkkkk	1			for team x
		mmmmm	5			for team x
		nnnnnnnn	2			for team x
		ppppppp	3			for team y
		qqqqqqqq	12			for team y
		rrrrrrrrrrrr	6			for team y
		sssssssss	4			for team y
		ttttttttttt	4			for team y
			40			

TaskCycle Analysis
(reflecting)

learning

TaskCycle Planning
(preflecting)

Weekly 3-Step Procedure

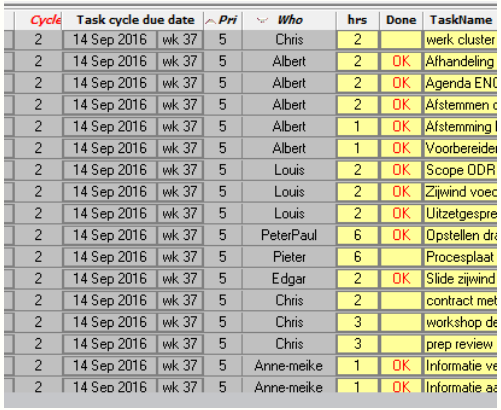
- Individual preparation
  - Conclude current tasks
  - What to do next
  - How much time available
  - Estimates
- Modulation with peer / coach
  - Status
  - Priority check
  - Feasibility
  - Commitment and decision
- Synchronization with group (team meeting)
  - Formal confirmation
  - Concurrency
  - Learning
  - Helping
  - Socializing

Modulation costs less than Generation

Cycle	Task cycle due date		Pri	Who	hrs	Done	TaskName
2	14 Sep 2016	wk 37	5	Chris	2		werk cluster
2	14 Sep 2016	wk 37	5	Albert	2	OK	Afhandeling
2	14 Sep 2016	wk 37	5	Albert	2	OK	Agenda ENC
2	14 Sep 2016	wk 37	5	Albert	2	OK	Afstemmen c
2	14 Sep 2016	wk 37	5	Albert	1	OK	Afstemming I
2	14 Sep 2016	wk 37	5	Albert	1	OK	Voorbereider
2	14 Sep 2016	wk 37	5	Louis	2	OK	Scope ODR
2	14 Sep 2016	wk 37	5	Louis	2	OK	Zijwind voec
2	14 Sep 2016	wk 37	5	Louis	2	OK	Uitzetgespre
2	14 Sep 2016	wk 37	5	PeterPaul	6	OK	Opstellen dr
2	14 Sep 2016	wk 37	5	Pieter	6		Procesplaat
2	14 Sep 2016	wk 37	5	Edgar	2	OK	Slide zijwind
2	14 Sep 2016	wk 37	5	Chris	2		contract met
2	14 Sep 2016	wk 37	5	Chris	3		workshop de
2	14 Sep 2016	wk 37	5	Chris	3		prep review
2	14 Sep 2016	wk 37	5	Anne-meike	1	OK	Informatie ve
2	14 Sep 2016	wk 37	5	Anne-meike	1	OK	Informatie aa

Why is this important ?

- TaskCycle Planning is *not* just planning the work for the coming week
- It exposes issues immediately
- Half of what people do in their work later proves to have been unnecessary
- During the TaskCycle planning we can very efficiently see
  - What our colleagues think they're going to do
  - Make sure we're all going to work on the most important things
  - Not on unnecessary things
  - In line with the architecture and design
  - Leading most efficiently to the goal of the delivery
  - Everyone knows exactly what's going to happen, what not, and why



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2	14 Sep 2016	wk 37	5	Albert	2	OK	Afstemmen
2	14 Sep 2016	wk 37	5	Albert	1	OK	Afstemming
2	14 Sep 2016	wk 37	5	Albert	1	OK	Voorbereide
2	14 Sep 2016	wk 37	5	Louis	2	OK	Scope ODR
2	14 Sep 2016	wk 37	5	Louis	2	OK	Zijwind voe
2	14 Sep 2016	wk 37	5	Louis	2	OK	Uitzetgespre
2	14 Sep 2016	wk 37	5	PeterPaul	6	OK	Opstellen dr
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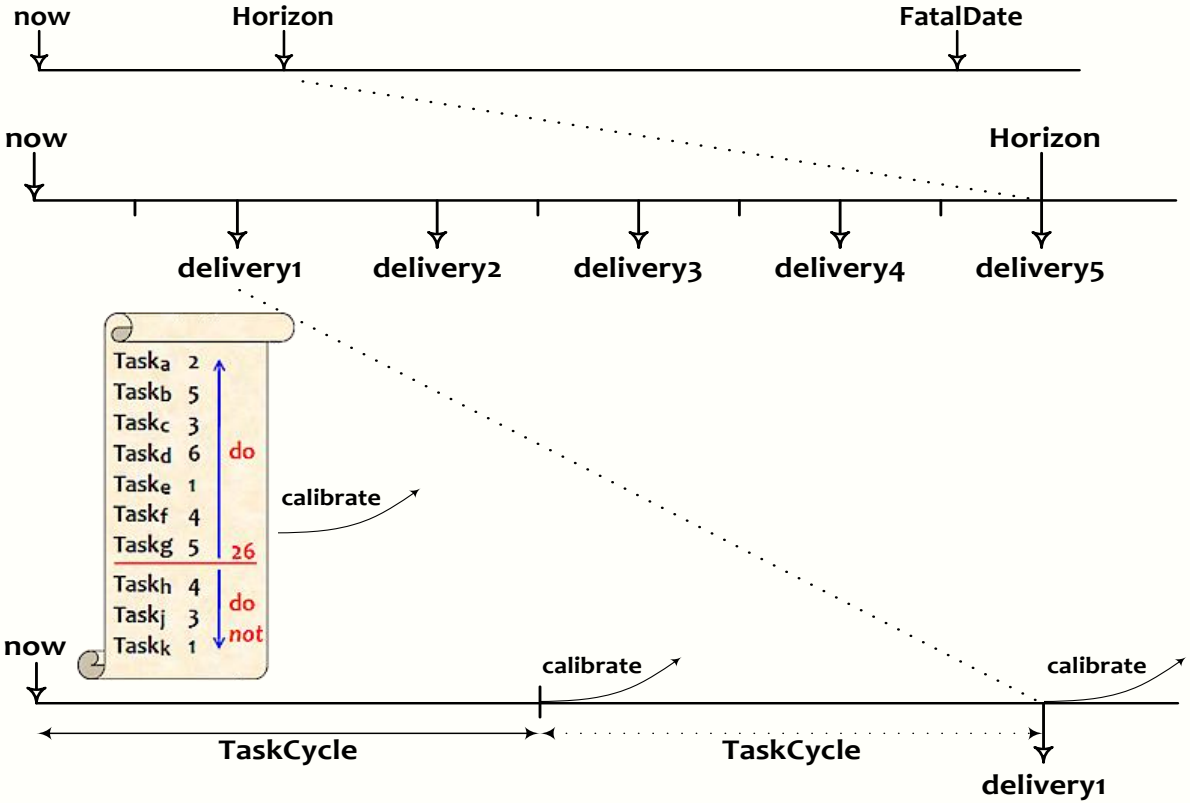
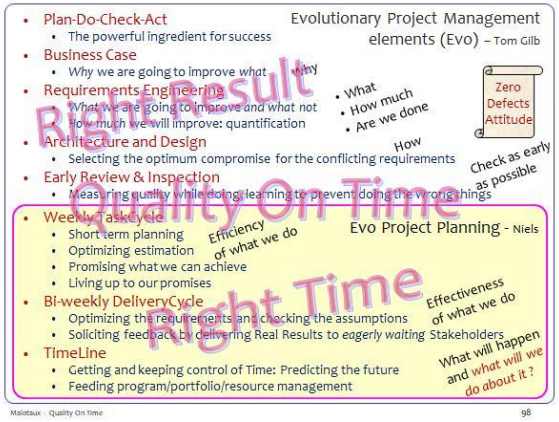
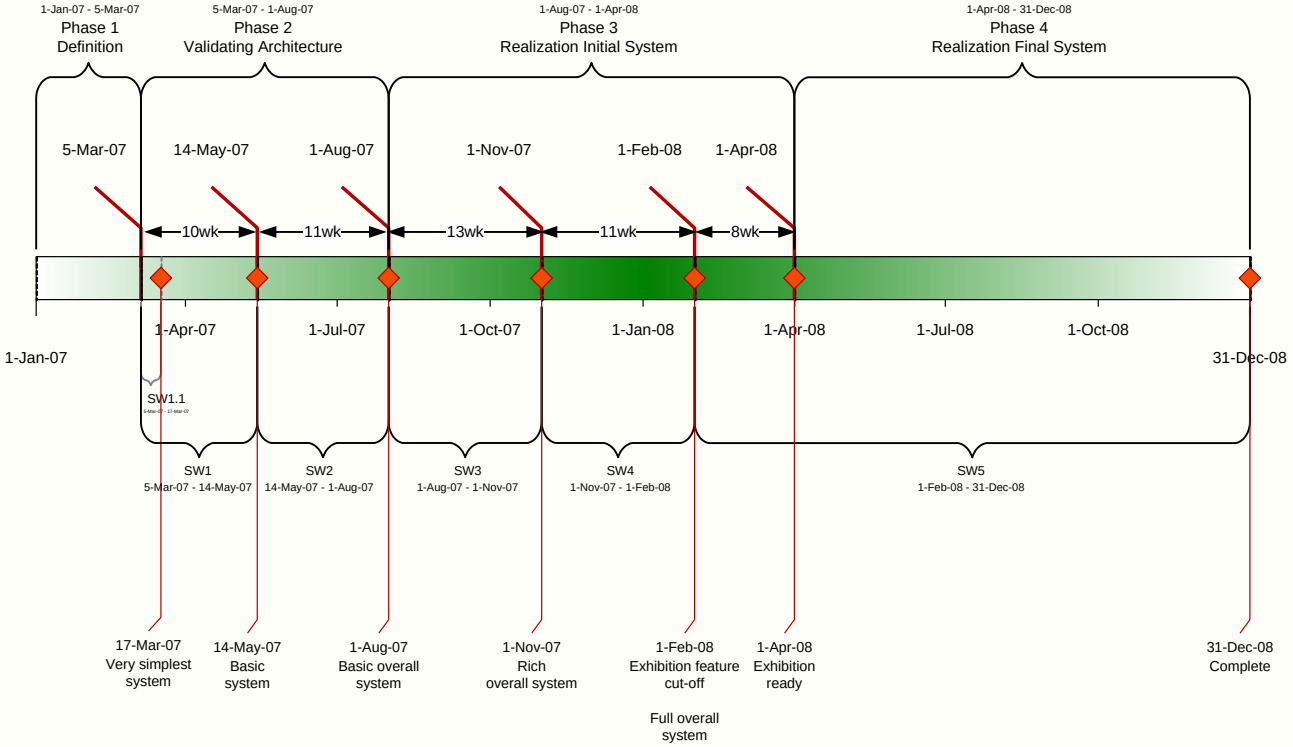
2	14 Sep 2016	wk 37	5	Chris	2		contract me
2	14 Sep 2016	wk 37	5	Chris	3		workshop de
2	14 Sep 2016	wk 37	5	Chris	3		prep review
2	14 Sep 2016	wk 37	5	Anne-meike	1	OK	Informatie ve
2	14 Sep 2016	wk 37	5	Anne-meike	1	OK	Informatie aa

Result to Tasks and back





TimeLine example

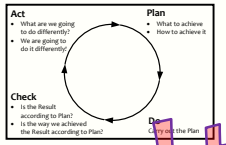


What’s missing in general project management education ?

Execution

Evolutionary Delivery elements (Evo)

Tom Gilb



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

Zero Defects Attitude

Right Result

Quality On Time

Right Time

- 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

Evo Planning - Niels

Efficiency of what we do

Effectiveness of what we do

What will happen, and what will we do about it ?

Zero Defects video: www.youtu.be/INum9mYZ9R8

No excuse anymore !

- Delivering Quality on Time isn't really difficult
- I showed you some examples of how to do it
- So, there is no excuse anymore
  if you're not sure, just ask !
- From now on: just deliver the Right Results at the Right Time
- No complaining or excuses

- Magic Mantra:

What are we going to do about it ?!

More

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1 Evolutionary Project Management Methods (2001)
Issues to solve, and first experience with the Evo Planning approach

2 How Quality is Assured by Evolutionary Methods (2004)
After a lot more experience: rather mature Evo Planning process

3 Optimizing the Contribution of Testing to Project Success (2005)
How Testing fits in

3a Optimizing Quality Assurance for Better Results (2005)
Same as Booklet 3, but for non-software projects

4 Controlling Project Risk by Design (2006)
How the Evo approach solves Risk by Design (by process)

5 TimeLine: How to Get and Keep Control over Longer Periods of Time (2007)
Replaced by Booklet 7, except for the step-by-step TimeLine procedure

6 Human Behavior in Projects (APCOSE 2008)
Human Behavioral aspects of Projects

7 How to Achieve the Most Important Requirement (2008)
Planning of longer periods of time, what to do if you don't have enough time

8 Help ! We have a QA Problem ! (2009)
Use of TimeLine technique: How we solved a 6 month backlog in 9 weeks

9 Predictable Projects (2012) - How to deliver the Right Results at the Right Time

RS Measurable Value with Agile (Ryan Shriver - 2009)
Use of Evo Requirements and Prioritizing principles

www.malotaux.eu/?id=insp Document Inspection pages

How to deliver Quality on Time

Delivering the Right Result at the Right Time

No excuses needed !

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