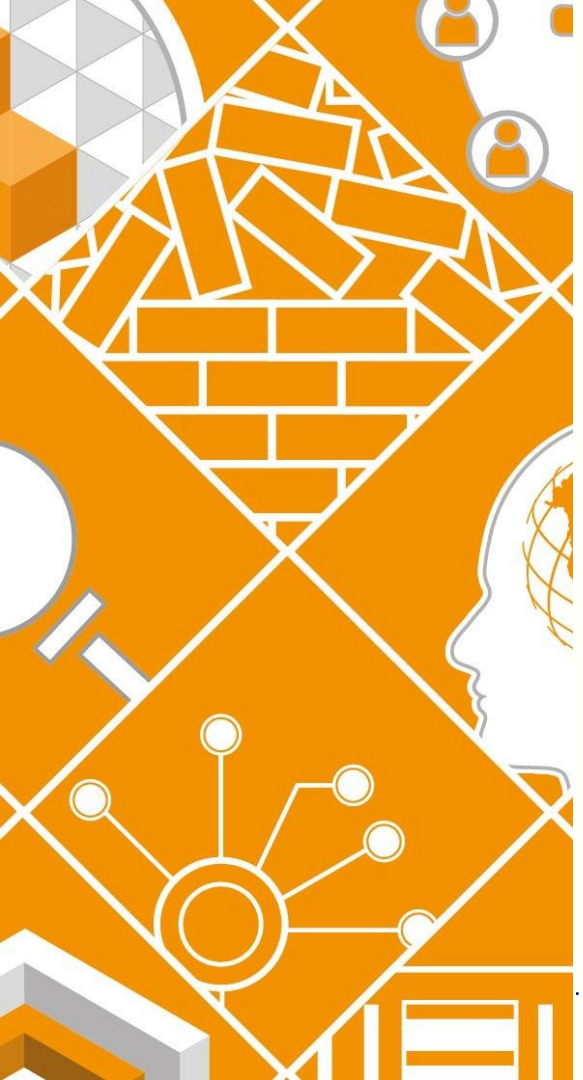

Quality on Time

How to deliver the RIGHT RESULT at the RIGHT TIME

Delivered by Niels Malotaux

All enquiries: info@se-training.net

About SE-Training

SWISS MEDTECH Member

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Systems Engineering experts for the development and support of technically complex systems.

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Classroom Course Highlights

Q4

Course Name	Date	Location
Requirements Engineering	14 – 15 November 2024	Zürich
Process Management**	14 – 15 November 2024	Zürich
SE Management	25 - 26 November 2024	Zürich
Technical Problem Solving	29 November 2024 (or get early bird discount for April 11, 2025 !)	Zürich

2025 Courses now listed on website: www.se-training.net

** Check out seasonal offers – Last chance – AUTUMN OFFER: Bring-a-(work)-buddy the course and each attendee will receive a 30% discount.

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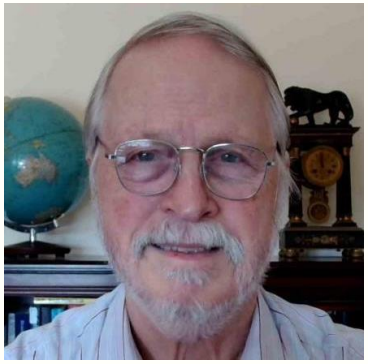

- **Independent Engineering and Project Coach**
- **Expert in helping teams and organizations to quickly become**
- More effective - doing the right things better
- More efficient - doing the right things better in less time
- More predictable - delivering as needed

- **Project rescue**
- **Embedded Systems architect (electronics/firmware)**
- **Project types**
  electronic products, firmware, software, space, road, rail, telecom, industrial control, parking system

niels@malotaux.eu

Quality on Time

How to deliver the Right Result at the Right Time

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Niels Malotaux

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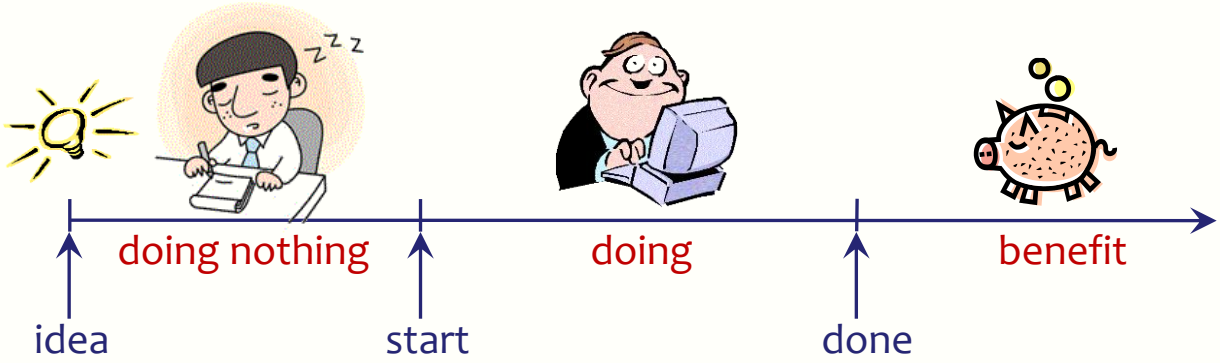
The Importance of Time

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 ?

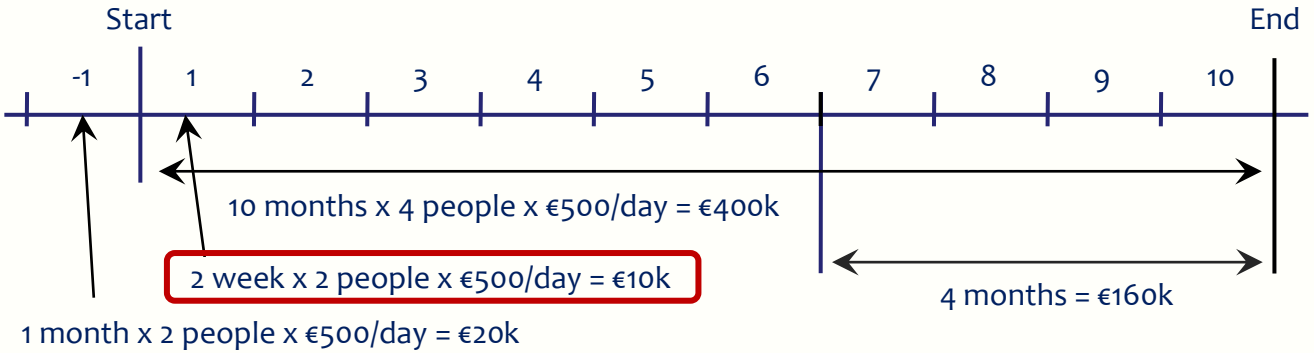
- What is the cost of your project per day ?
- What is your cost per day ?
  Note: that's not what you get !
- If we don't know the benefit, assume 10 times the cost
- How can we make decisions, if we don't know ?

- 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

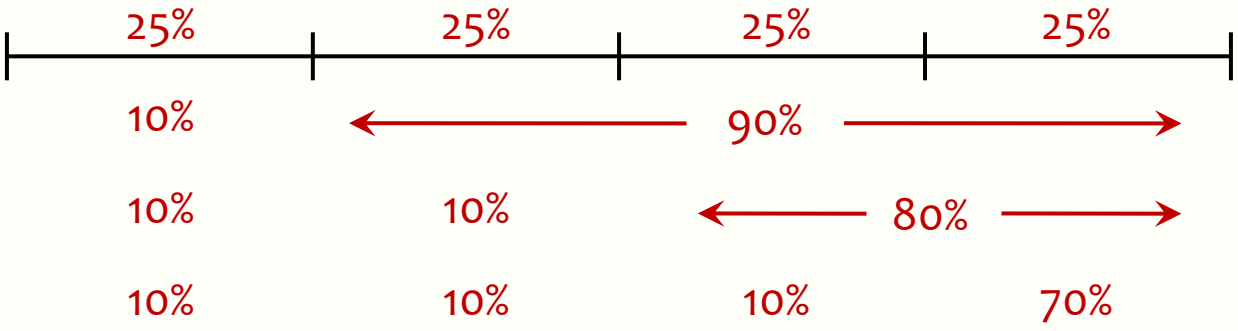
Time vs Budget ? - VOIP introduction project



- 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/month)
- 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 !

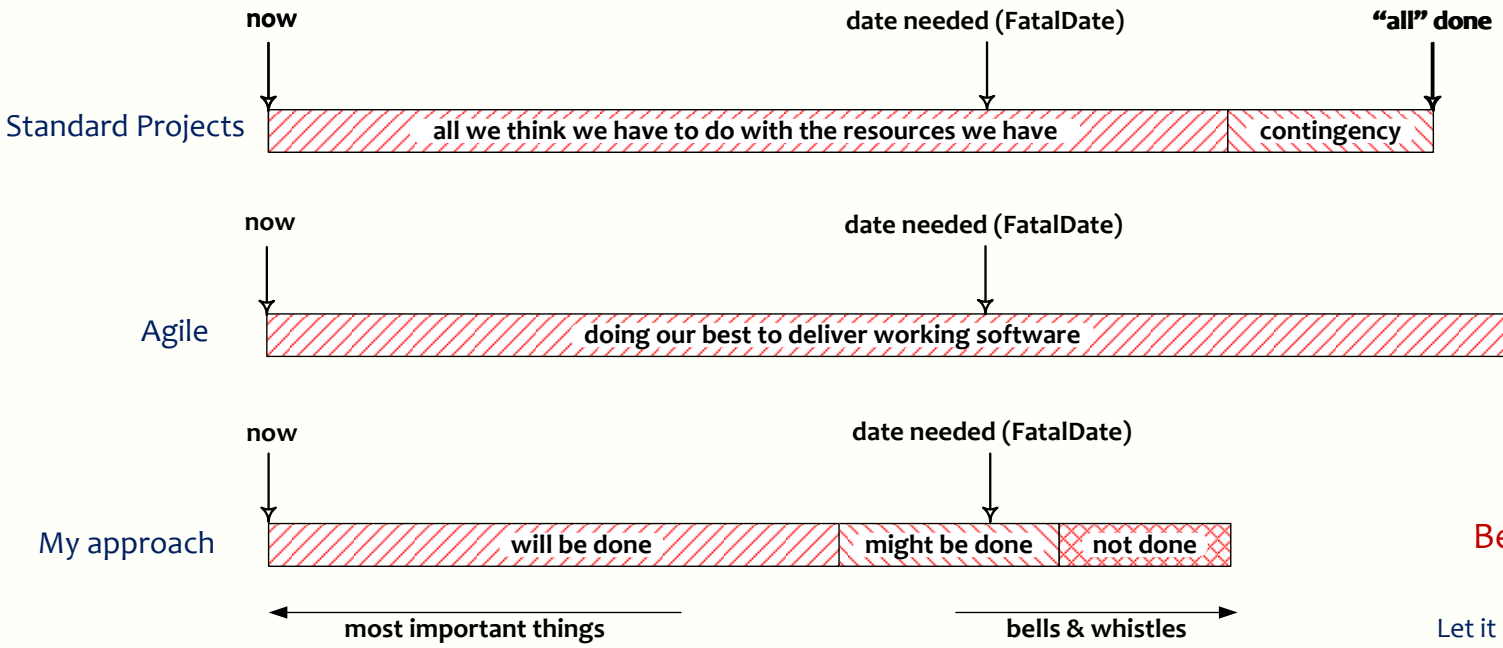
4 week project



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%

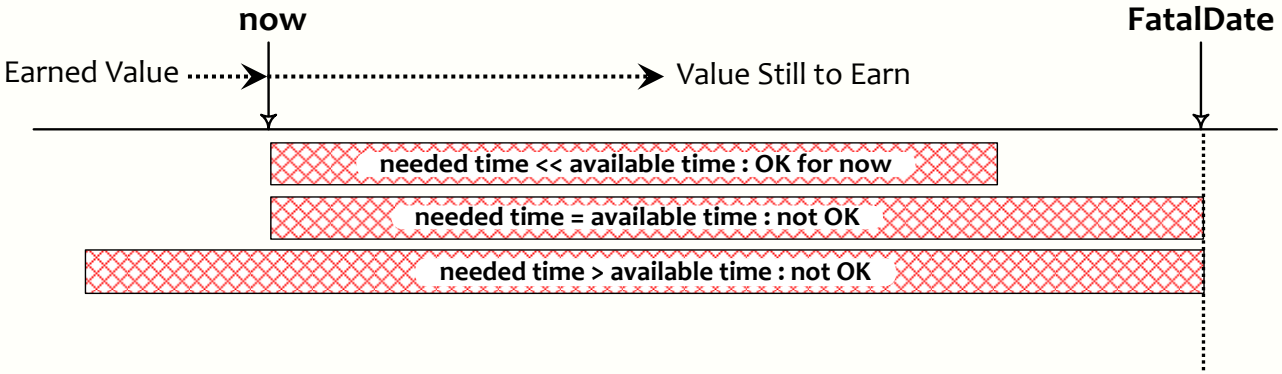
Ultimate Goal of a What We Do
(for our salary)

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

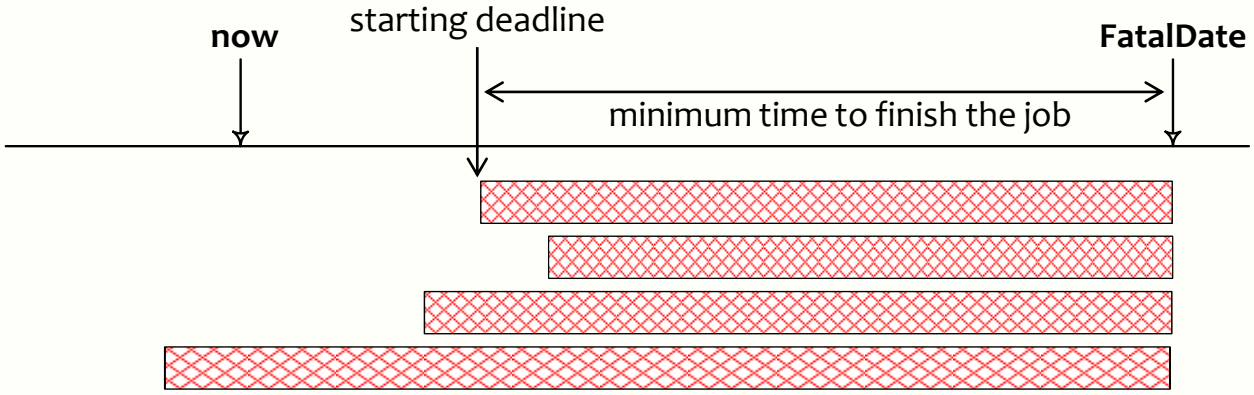
versus

- 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



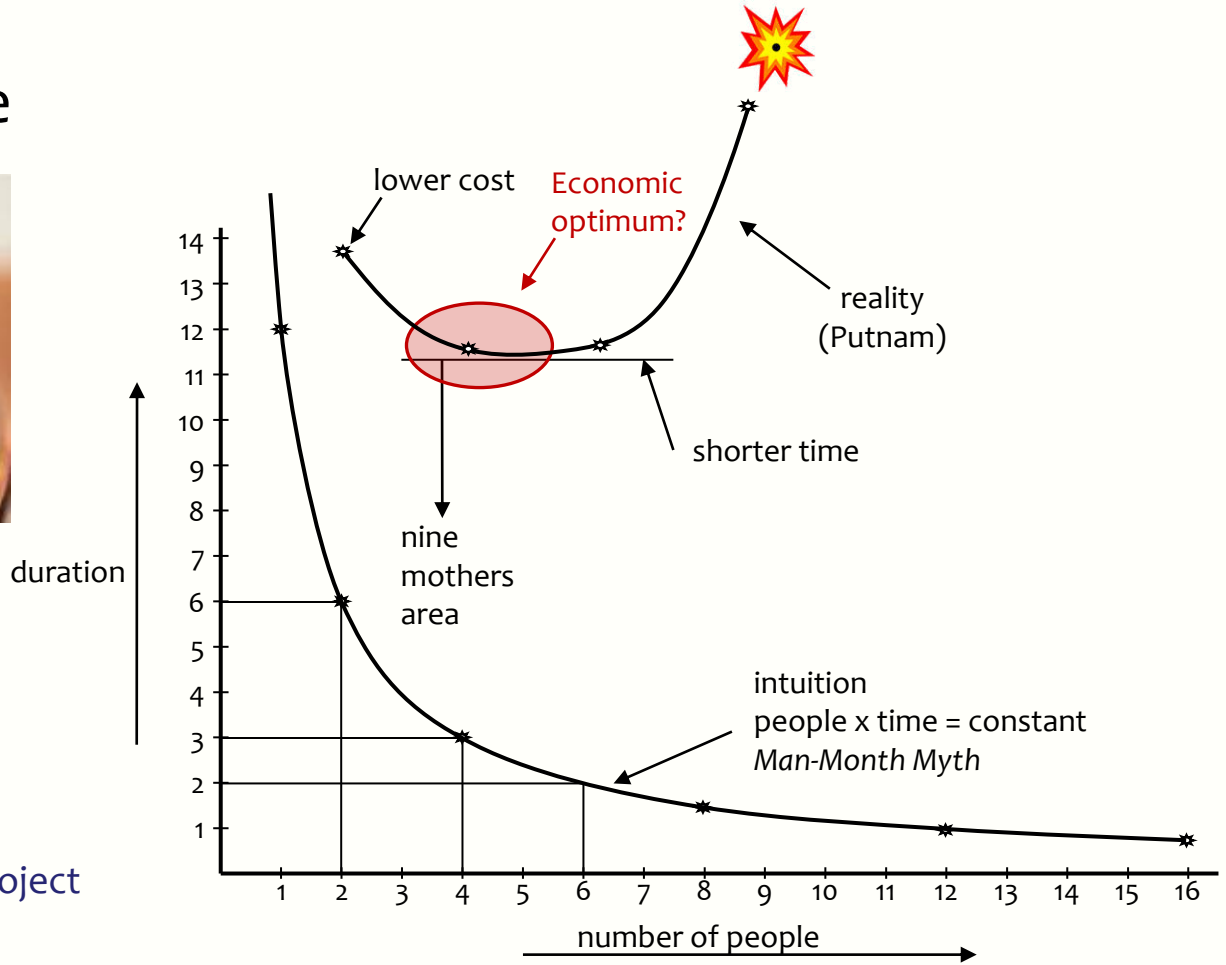
How to be on time

- 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

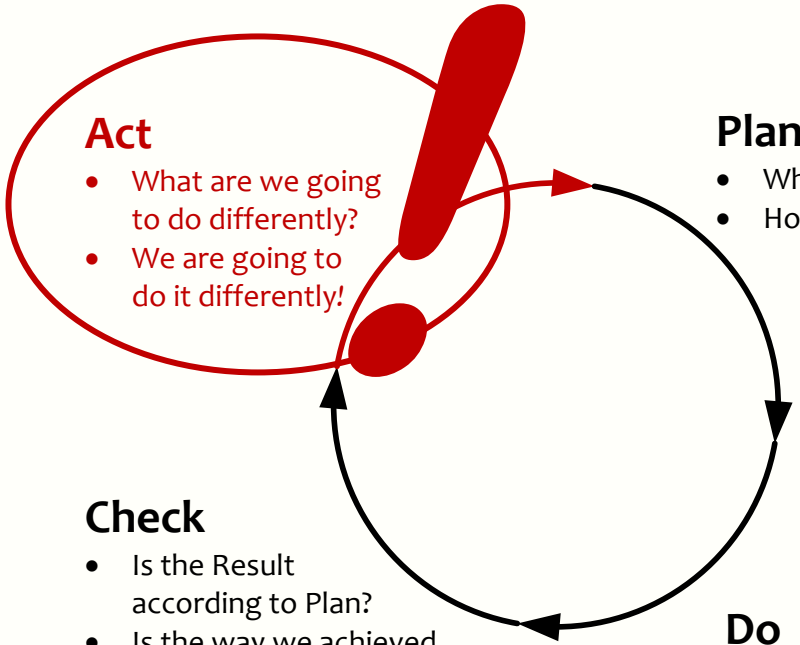
Continuous
elimination of waste
(www.malotaux.eu/?id=essenceoflean)

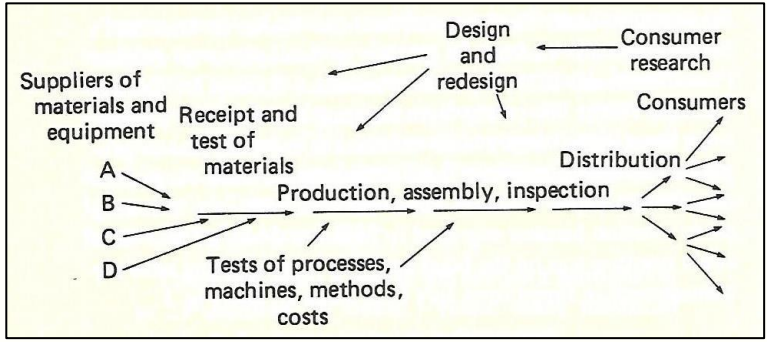
We don't have enough time, but we can save time
without negatively affecting the Result !

- 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

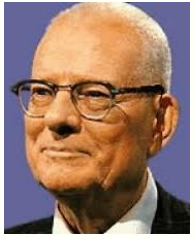
(Shewhart Cycle - Deming Cycle - Plan-Do-Study-Act Cycle - Kaizen)





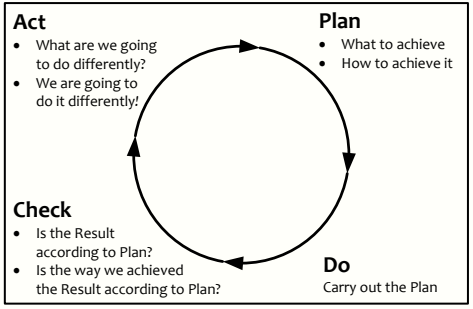
Deming: Out of the Crisis

Deming talking to Japanese Top Management in 1950



Quality costs less

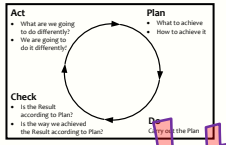
- Half of what we tend to do in our work, later will prove not to have been needed
  - If we see that after spending the time, the time is already wasted
  - If we see that before we spend the time, we still can decide not to waste the time
- If we save time, we have more time to do the right things right
- Doing things wrong, costs at least *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

Evo Planning - Niels

Efficiency of what we do

Effectiveness of what we do

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

Right Result

Quality On Time

Right Time

Zero Defects video: www.youtu.be/INum9mYZ9R8

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, 2023], 8 min [average, 2023], 83 min [max, 2023]

Current: < 4 min [competitor y, May 2023] ← <who said this?>, <Survey April 2023>

Record: 57 sec [competitor x]

Wish: < 2 min [2026Q3, new system available] ← CEO, 19 Jan 2024, <document ...>

Requirements:

Tolerable: < 10 min [99%, Q4] ← SLA

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

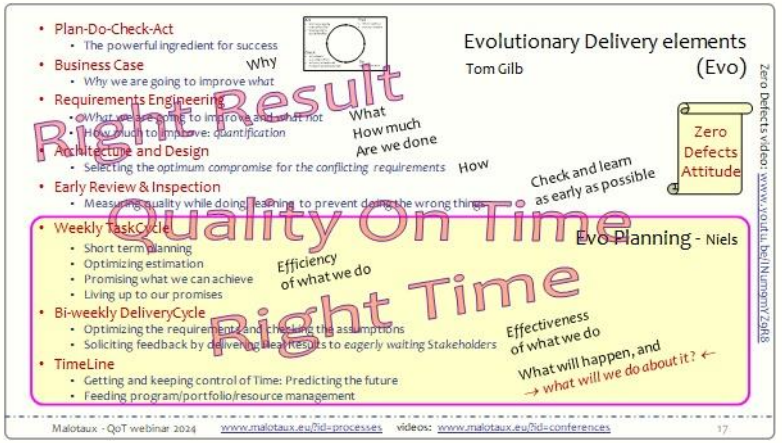
Goal: < 15 min [99%, Q2], < 10 min [99%, Q3], < 5 min [99%, Q4] ← marketing

Tom Gilb quote

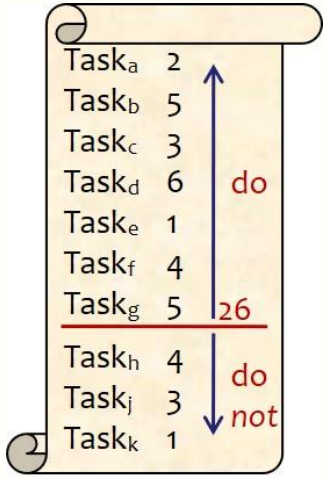
- The fact that we can set numeric objectives, and track them, is powerful, *but in fact it is not the main point*
- The main purpose of quantification is to force us to *think deeply*, and *debate exactly*, what we mean
- So that others, later, *cannot fail* to understand us

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
  in order to achieve what we're supposed to achieve
- 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 !*

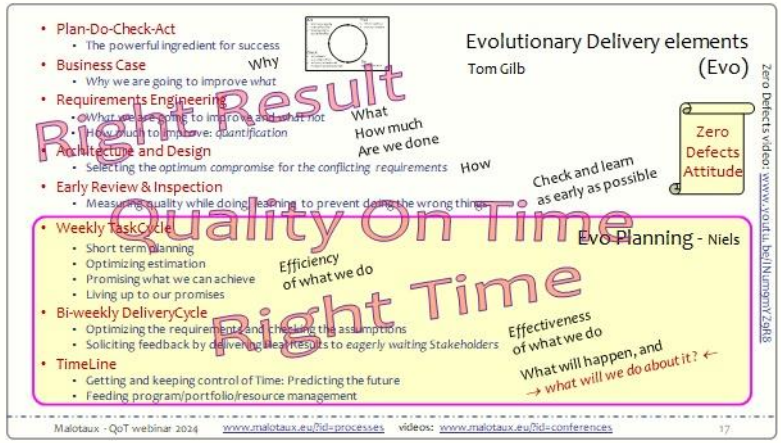


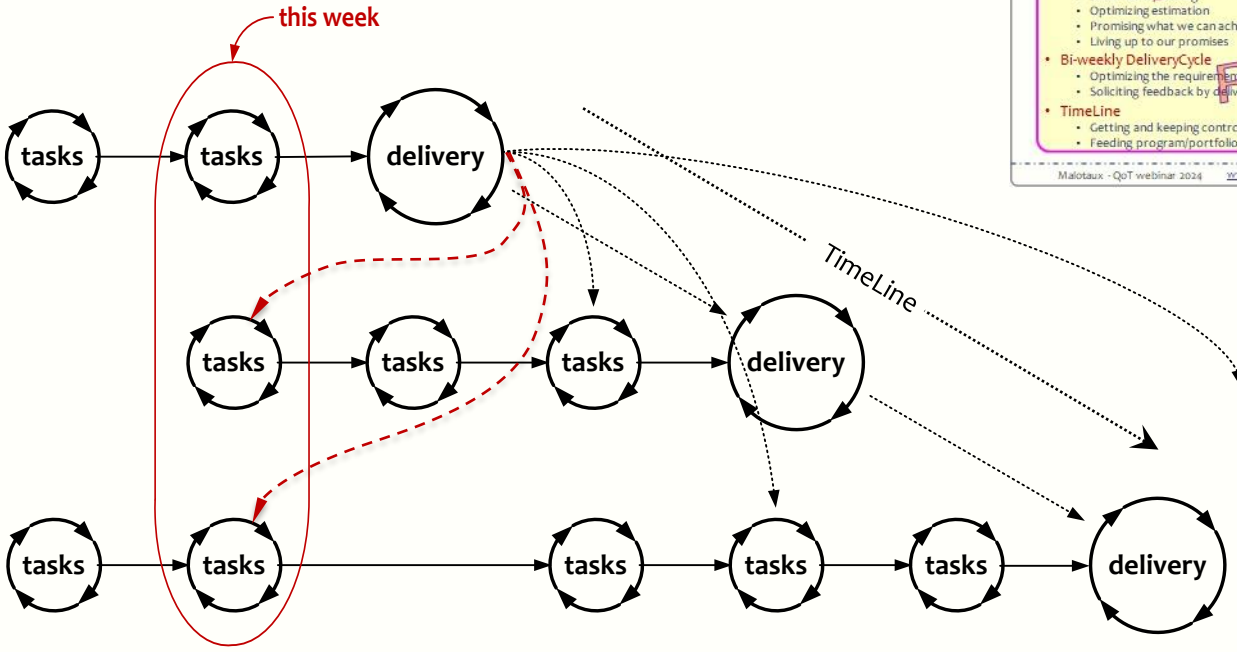
2/3 is default start value
this value works well with development work

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

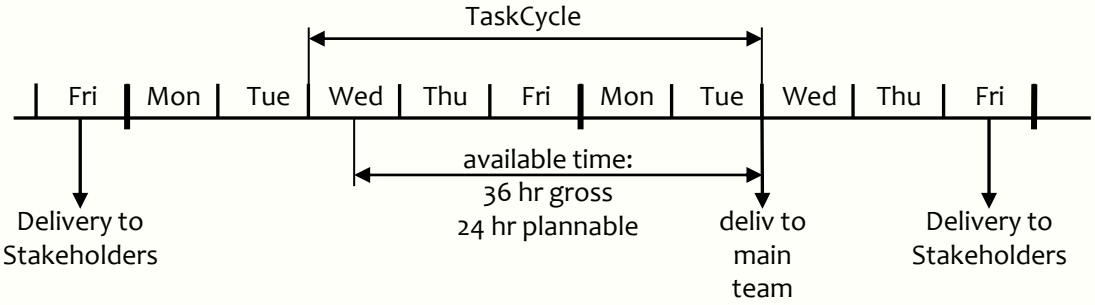
Tasks feed Deliveries





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

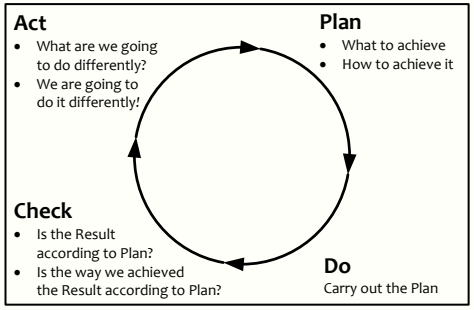
Gregory	
Draft design	6
Finish design	6
Work for deliv	3
-	1
-	2
-	2
-	3
-	5
-	6
XMLa	4
XMLb	4
Total	42

Gregory (later)	
Draft design	0
Finish design	0
...	

Jerome	
XMLa	3
XMLb	3
...	

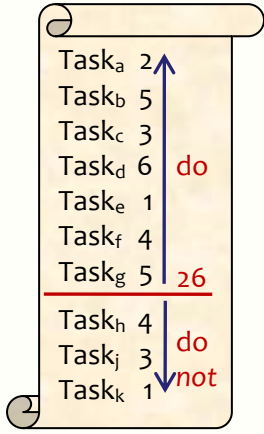
What would have happened if we wouldn't have *designed* this delivery?

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	
		ddddddddd	2			
		eeeeeeee	3	2		
		fffffffffff	2	1		
		ggggggggg	6	7	yes	
		hhhhhhhh	4			
			26	26		
4	John	*Net time available: 26*				
		jjjjjjjjjjjjj	3			for team x
		~~kkkkkkkkk~~				for team x
		mmmmm	5			for team x
		~~nnnnnnnn~~				for team x
		~~ppppppppp~~				for team y
		qqqqqqqq	12			for team y
		rrrrrrrrrrrr	6			for team y
		~~sssssssss~~				for team y
		~~ttttttttttt~~				for team y
			26			

TaskCycle Analysis
(reflecting)

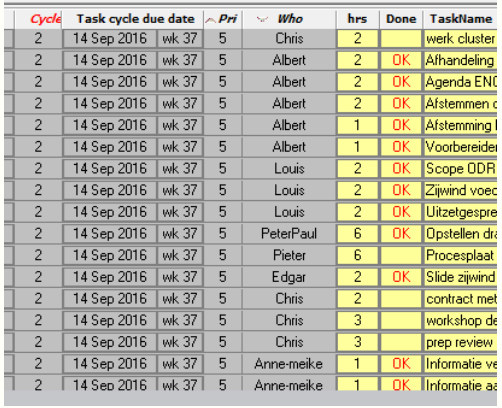
learning

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

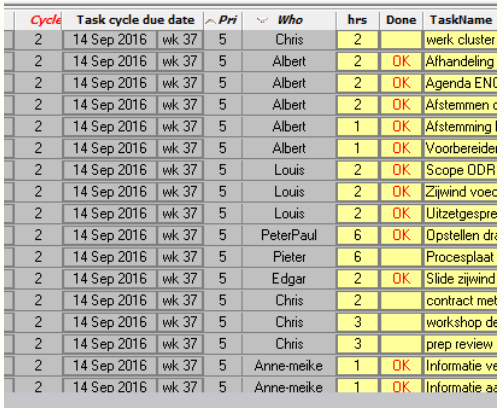
Modulation costs less than Generation



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 EN
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 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 a

Why is this important ?

- TaskCycle Planning is *not* only 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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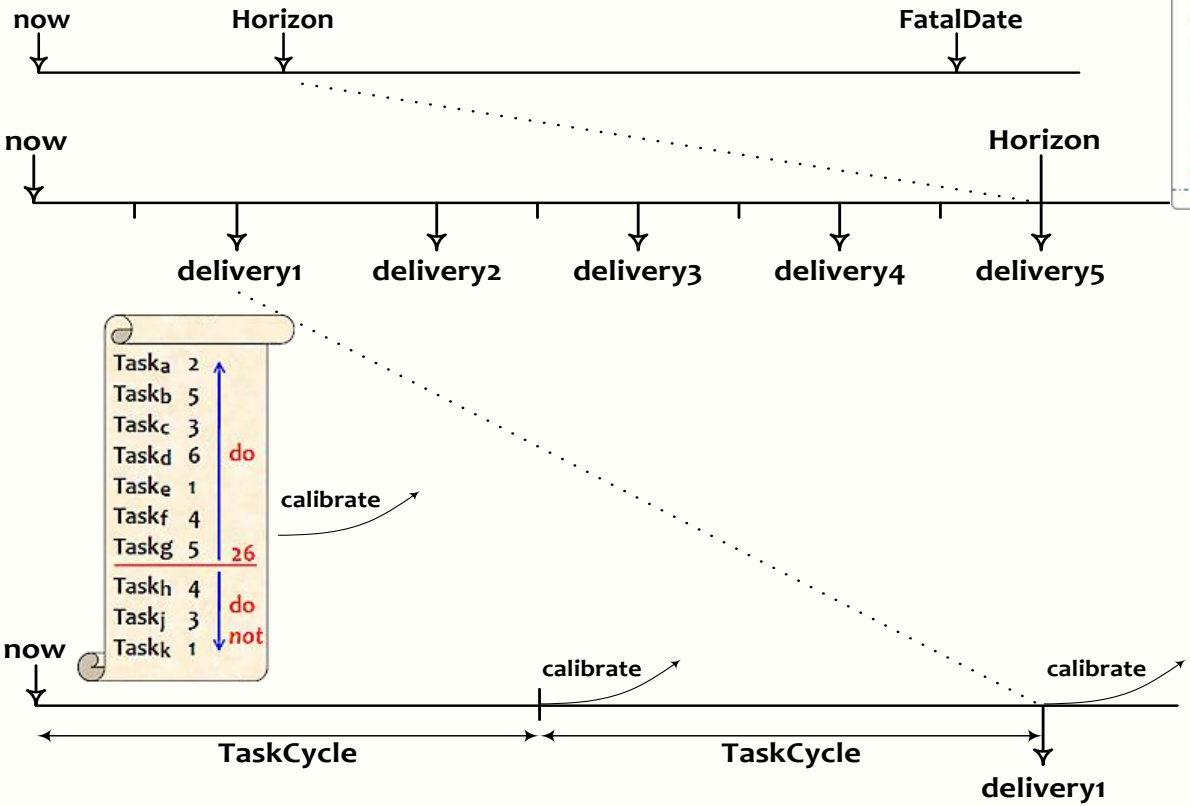
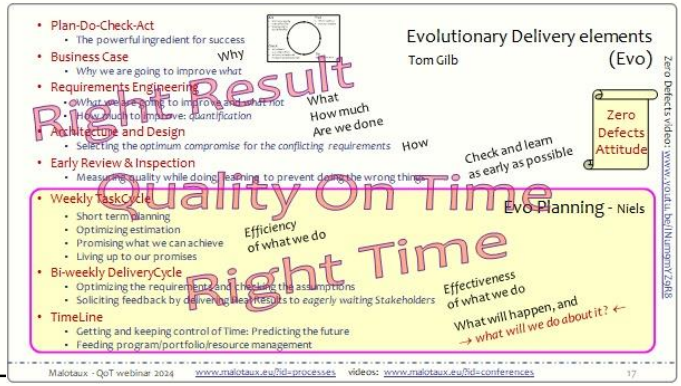
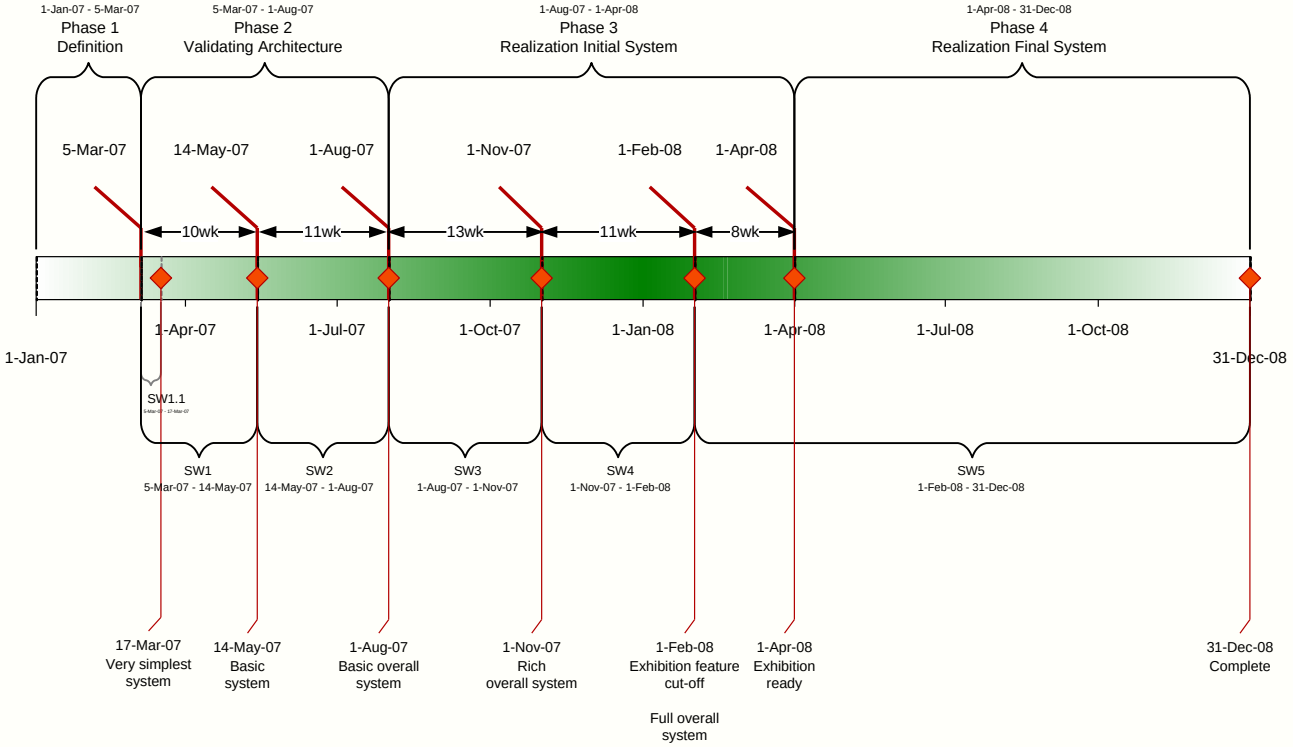
2	14 Sep 2016	wk 37	5	Albert	2	OK	Agenda END
2	14 Sep 2016	wk 37	5	Albert	2	OK	Afstemmen c
2	14 Sep 2016	wk 37	5	Albert	1	OK	Afstemming I
2	14 Sep 2016	wk 37	5	Albert	1	OK	Voorbereider
2	14 Sep 2016	wk 37	5	Louis	2	OK	Scope ODR
2	14 Sep 2016	wk 37	5	Louis	2	OK	Zijwind voec
2	14 Sep 2016	wk 37	5	Louis	2	OK	Uitzetgespre
2	14 Sep 2016	wk 37	5	PeterPaul	6	OK	Opstellen dra
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

TimeLine: Result to Tasks, and back





TimeLine example

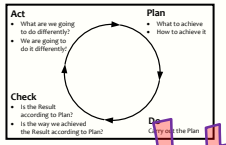


What's missing in general project management education ?

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* we are going to improve and *what not* — What
  - How much to improve: *quantification* — How much
- Architecture and Design — Are we done
  - Selecting the *optimum compromise* for *the conflicting requirements* — How
- Early Review & Inspection — Check and learn as early as possible
  - Measuring quality while doing, learning to prevent doing the wrong things

Zero Defects Attitude

Zero Defects video: www.youtu.be/INum9mYZ9R8

- Weekly TaskCycle — Evo Planning - Niels
  - Short term planning
  - Optimizing estimation
  - Promising what we can achieve
  - Living up to our promises
- Bi-weekly DeliveryCycle — Efficiency of what we do
  - Optimizing the requirements and checking the assumptions
  - Soliciting feedback by delivering Real Results to *eagerly waiting Stakeholders* — Effectiveness of what we do
- TimeLine — What will happen, and what will we do about it?
  - Getting and keeping control of Time: Predicting the future
  - Feeding program/portfolio/resource management

Right Result

Quality On Time

Right Time

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

www.malotaux.eu/?id=booklets

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

Quality on Time course
5 - 6 Feb 2025 - Zürich

Quality on Time

How to deliver the Right Result at the Right Time

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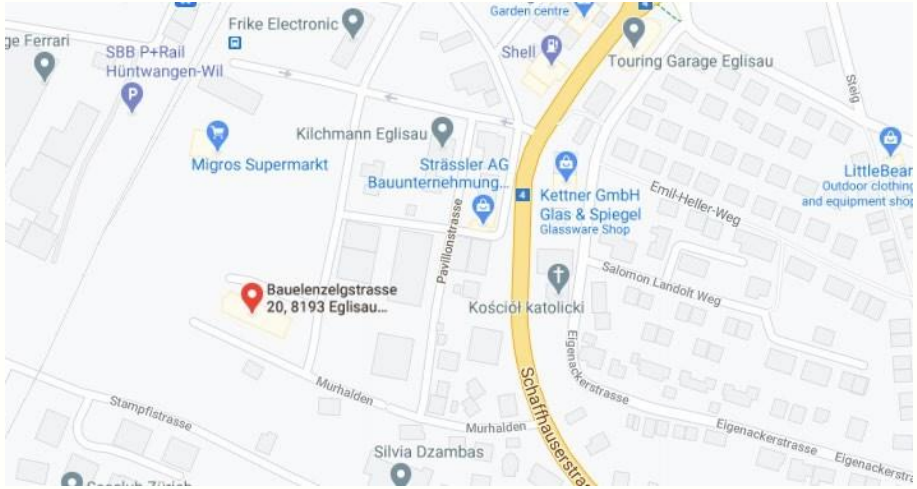
Thank you for listening!
Q&A

Keep in contact



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Classroom Course Highlights

Q4

Course Name	Date	Location
Requirements Engineering	14 – 15 November 2024	Zürich
Process Management**	14 – 15 November 2024	Zürich
SE Management	25 - 26 November 2024	Zürich
Technical Problem Solving	29 November 2024 (or get early bird discount for April 11, 2025 !)	Zürich

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