# What's Wrong With Requirements Methods?

*An analysis of the fundamental failings of conventional thinking about software requirements, and some suggestions for getting it right.*

Talk 27 June 2011 London SPIN
6.15 p.m. Presentation by Tom Gilb (30 minutes total incl. discussion)
Major edit 25 June 2011

# Talk Background Data

- Evening 25-30 minute London SPIN talk 6:15 to 6:45
-

Paper , Publication

  - http://www.coremag.eu/fileadmin/Papers/RQNG_tom_gilb_core_ENG.pdf
  - http://www.gilb.com/tiki-download_file.php?fileId=443 (Journal Sw Eng version)
  - http://www.testingexperience.com/testingexperience11_09_10.pdf (Test exp version)
    - Registration required

- Presented by Tom Gilb, Independent Consultant, Author, Teacher
  - Tom@Gilb.com
  - www.Gilb.com
  - @ImTomGilb on twitter

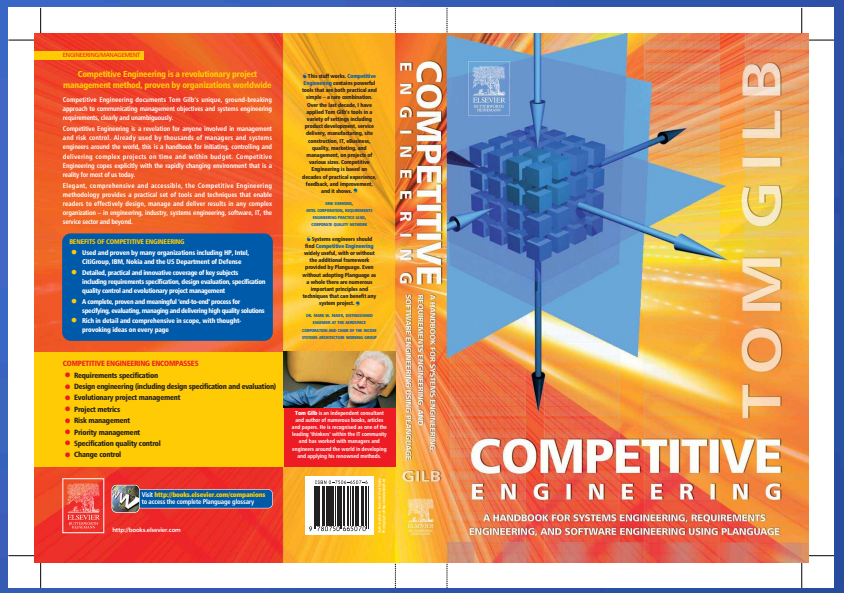
# What is wrong with Requirements Practice?

- *Lack of*

**Critical Value Requirements**

# Talk Outline
# Time permitting, then see slides at www.gilb.com

1. Requirement definition: 'Stakeholder Prioritized End State'
2. Ten Reasons Why Requirements Methods Fail
3. Top Level Critical Objectives: the missing link
4. Don't Mix Ends and Means
5. Requirements are not always 'Required': Intelligent Dynamic Prioritization
6. Stakeholders: not just users and customers!
7. Value Delivery: leading to Systems Thinking, not Software Silos
8. Quantification: not 'Software Poetry' – a basis for real Software Engineering – not mere 'Softcrafting'
9. Rich Specification: Requirement specifications need far more info than the requirement itself!
10. Ten Principles for Successful Requirements Methods.
11. Who or What will Change things?
12. Summary



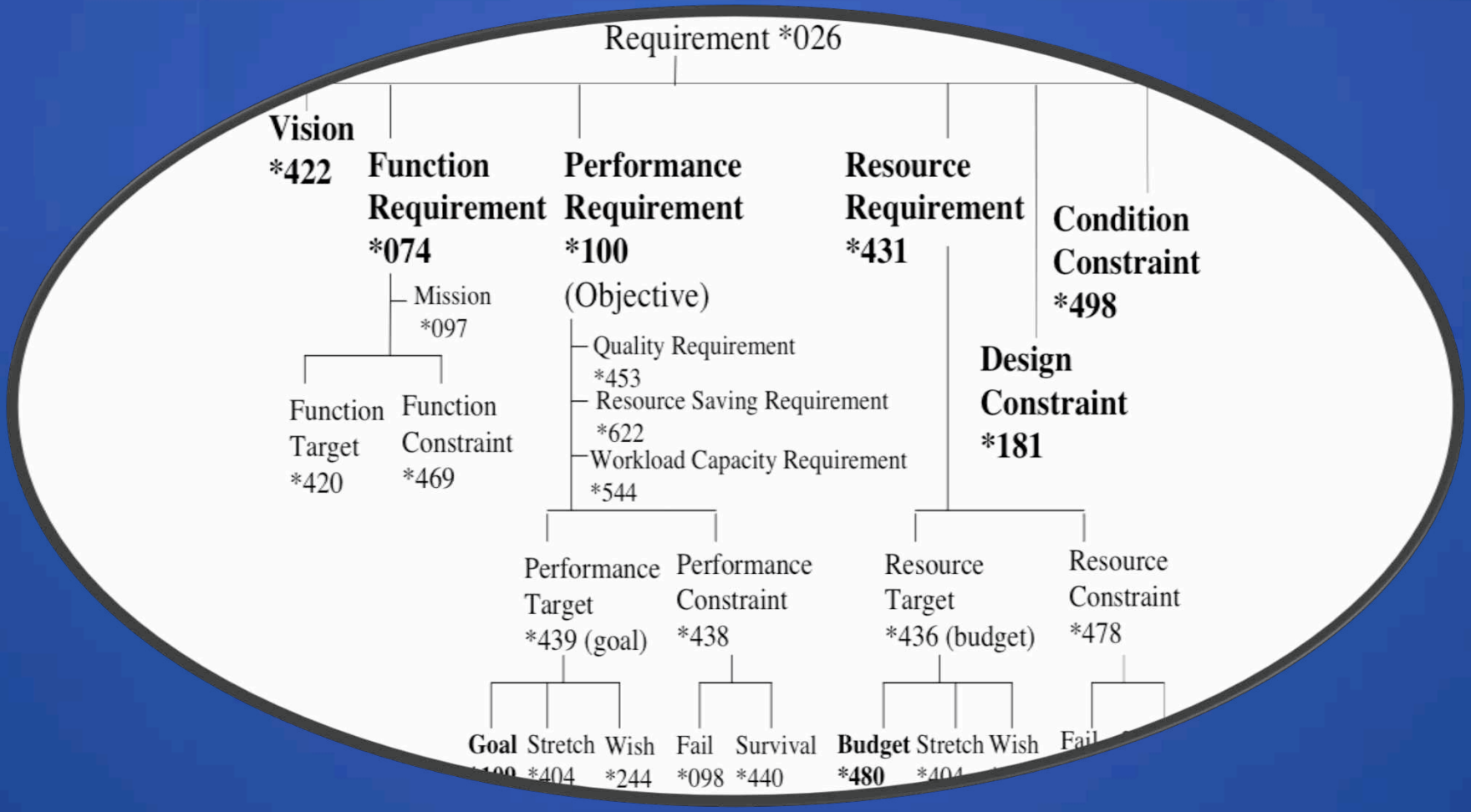
# "Requirement" is

# "Stakeholder Valued End State"

**Source: Gilb, Planguage Concept Glossary 2011 version**

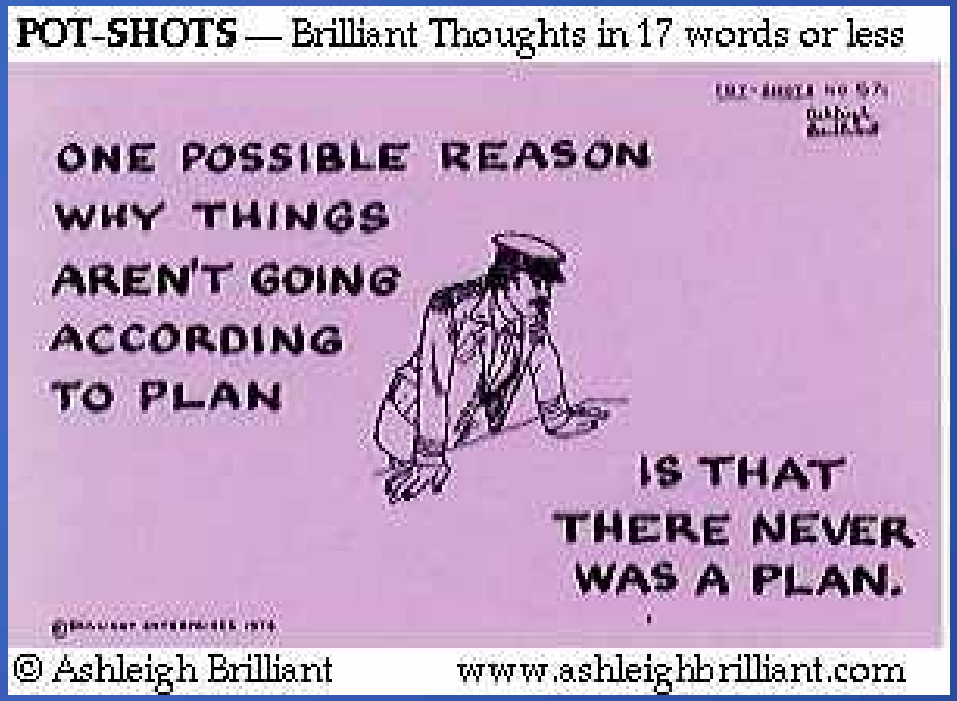
**http://www.gilb.com/tiki-download_file.php?fileId=386**

# Requirement Types: <-CE, PL

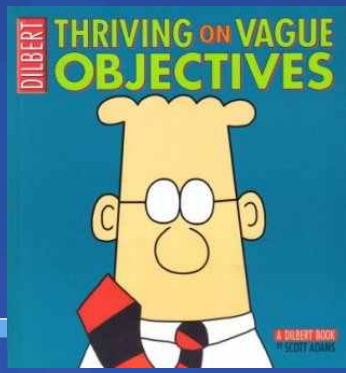


# Ten Reasons
# Why Requirements Methods Fail

- 1. Focus, not stakeholders
- 2. Designs, not values
- 3. Poetry, not clear
- 4. Function, not quality
- 5. Testable, not constraints
- 6. Requirement, not background
- 7. Single Requirement, not the set
- 8. Assumptions, not rigorous definitions
- 9. Blind acceptance, no real QC
- 10. single level, not multiple levels



# The Worst Problem

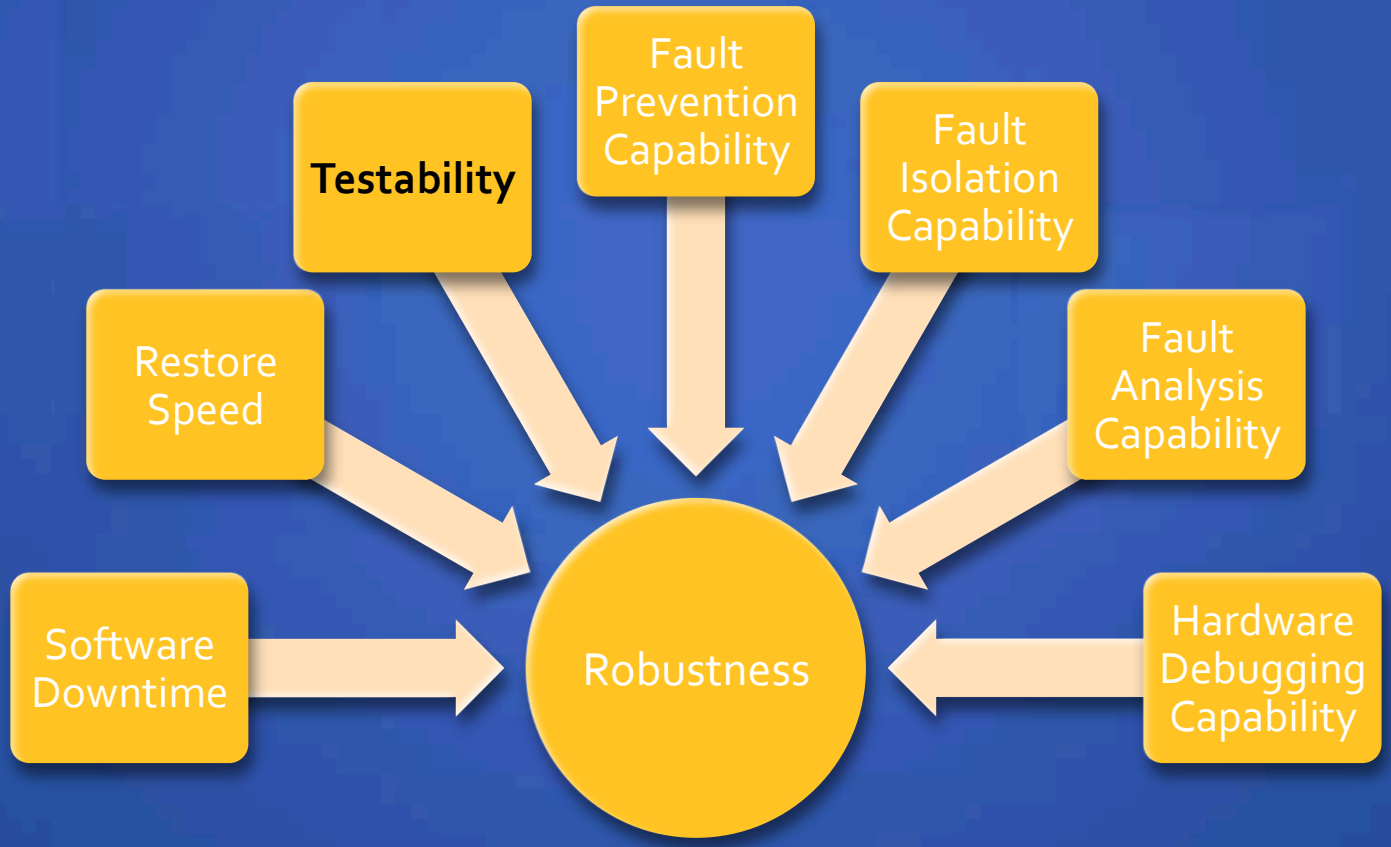



**Bad Quality**
for the
**Top Level**
Critical
Requirements

*Real Case*

- "Make the system much easier to understand and use"
- "Robustness'
  - (See next slide )
- "Richer set of tools for supporting next generation tools and applications"

# A Complex Requirement "Robustness"



# Testability (part of "Robustness")

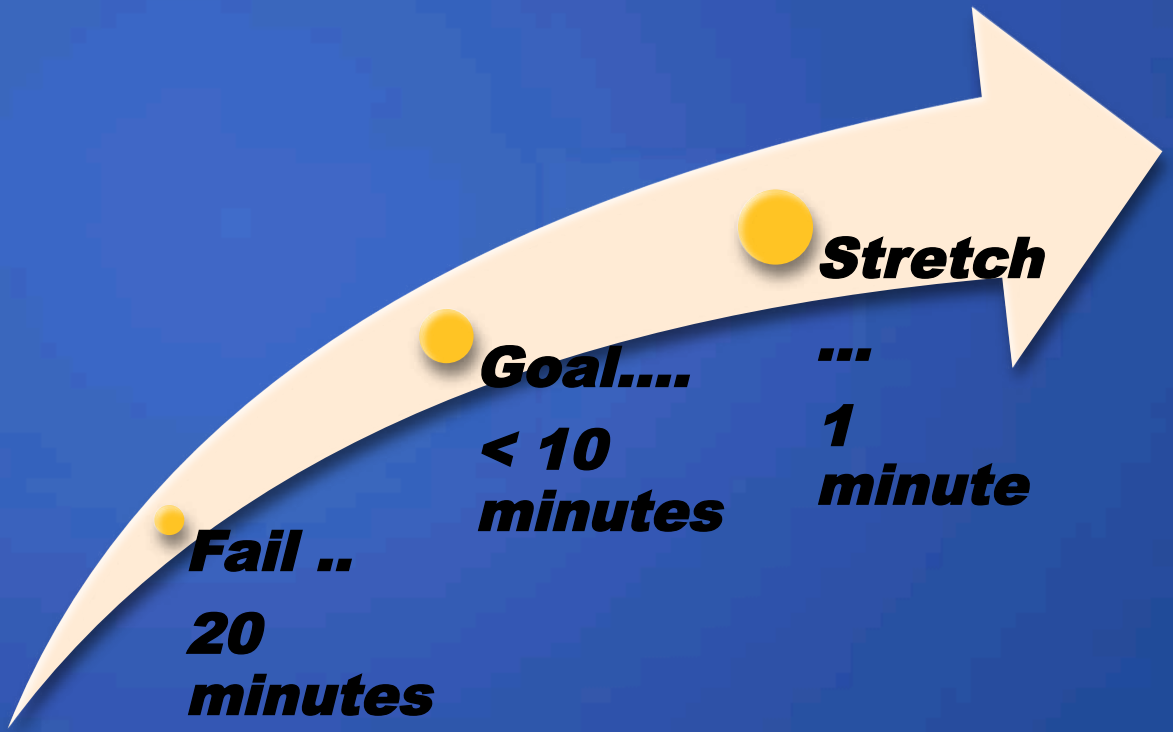
**Scale**: the *duration* of

a defined [Volume] of testing,

of a defined [Type],

by a defined [Skill Level] of system operator,

under defined [Operating Conditions]

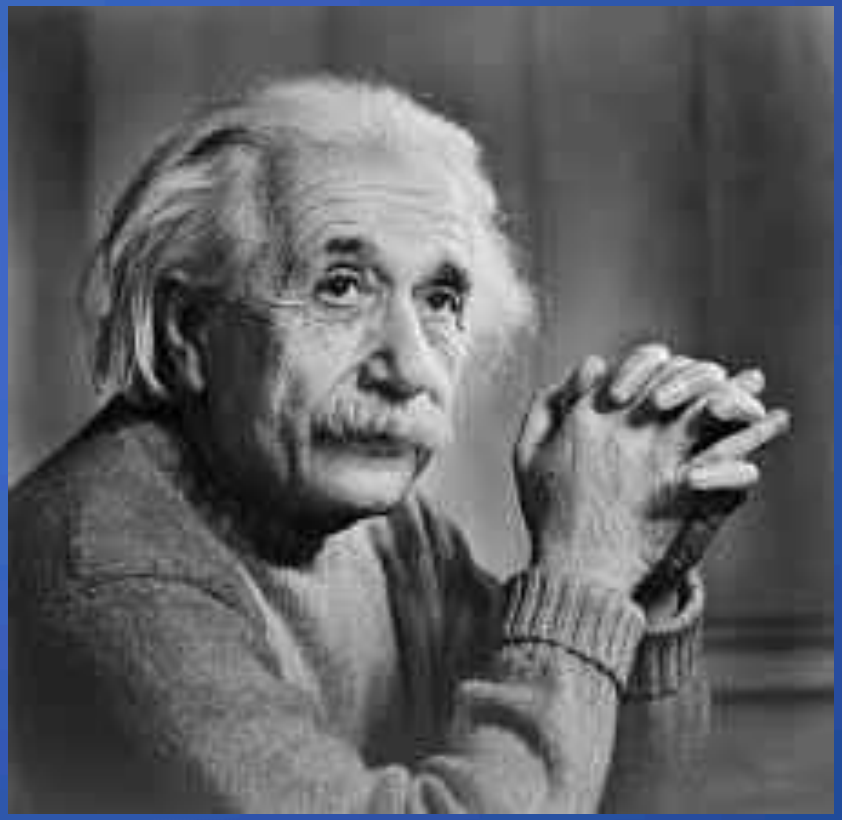


# Previous Case: Observation

- !Management lost over $100 million on this project, and 8 years time,
- !Because they failed to clarify (quantify!) critical requirements
- !1 days work

# 4. Don't Mix Ends and Means

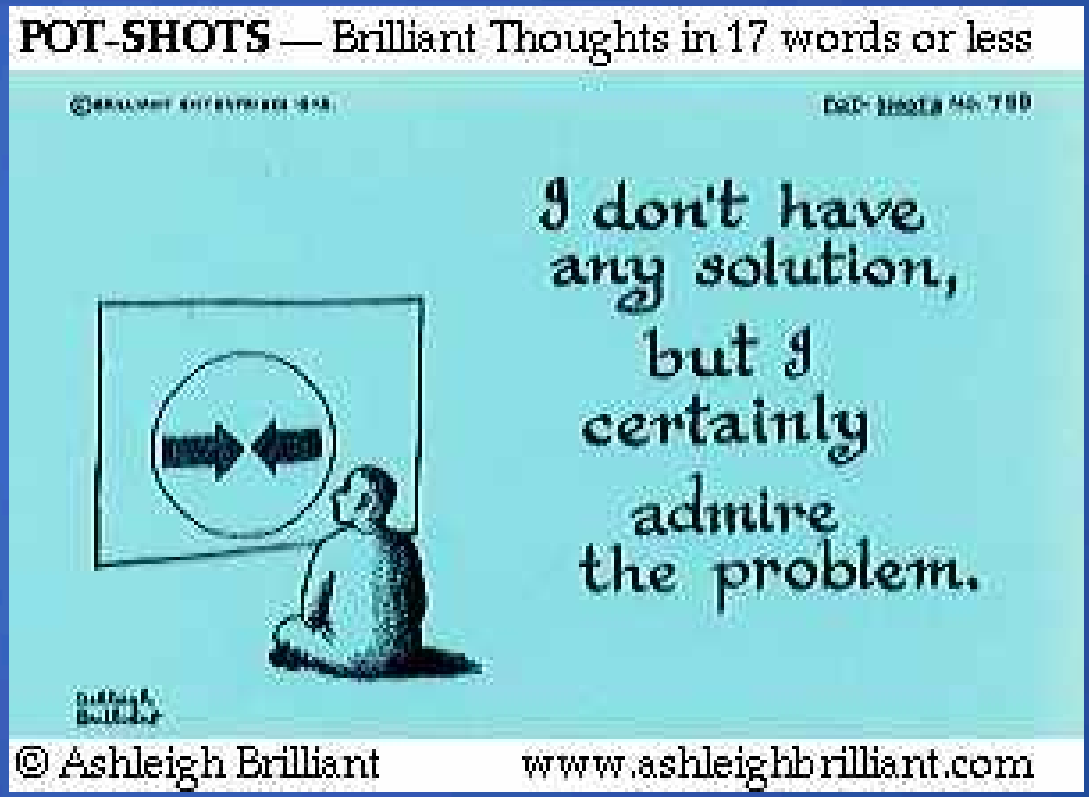
- *"Perfection of means*
- *and confusion of ends*
- *seem to characterize our age."*



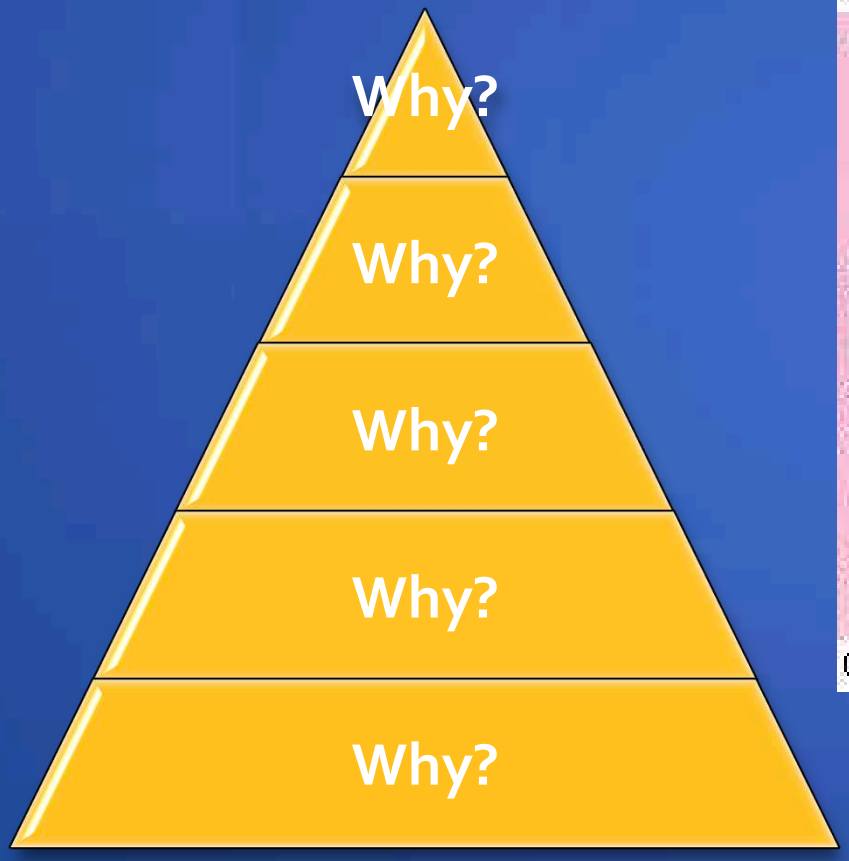
Albert Einstein. 1879-1955

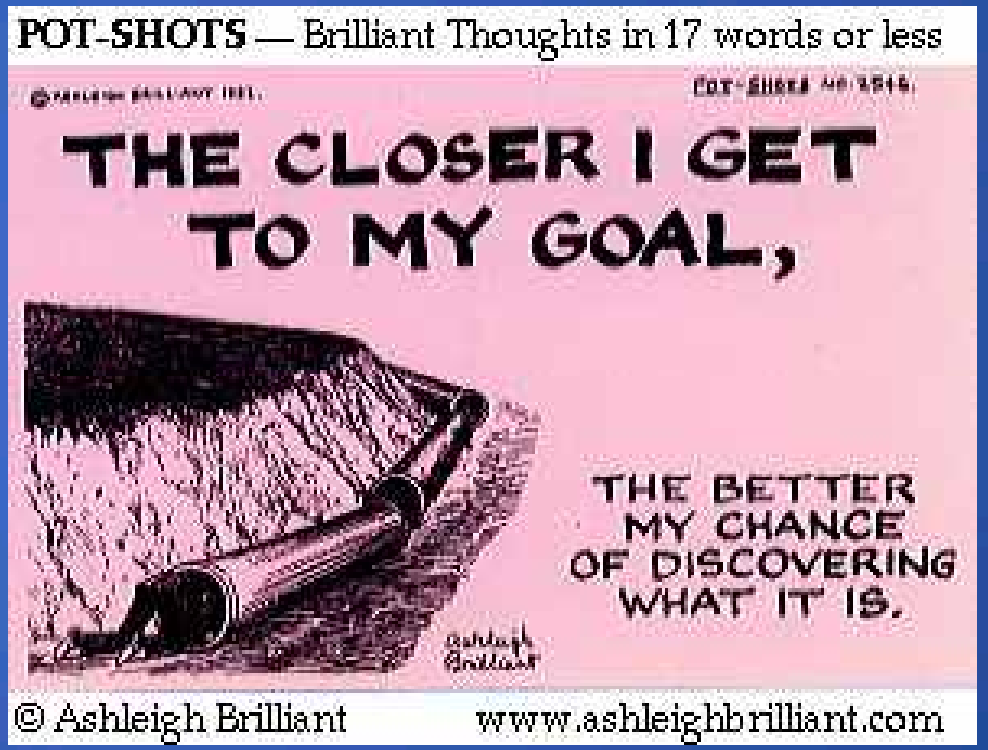
# Why do people specify a *Means* as if they were their real *Ends*?

- Means = concrete
- Ends = abstract
- Lack of training/ education
  - Hopper: Puritan Gift



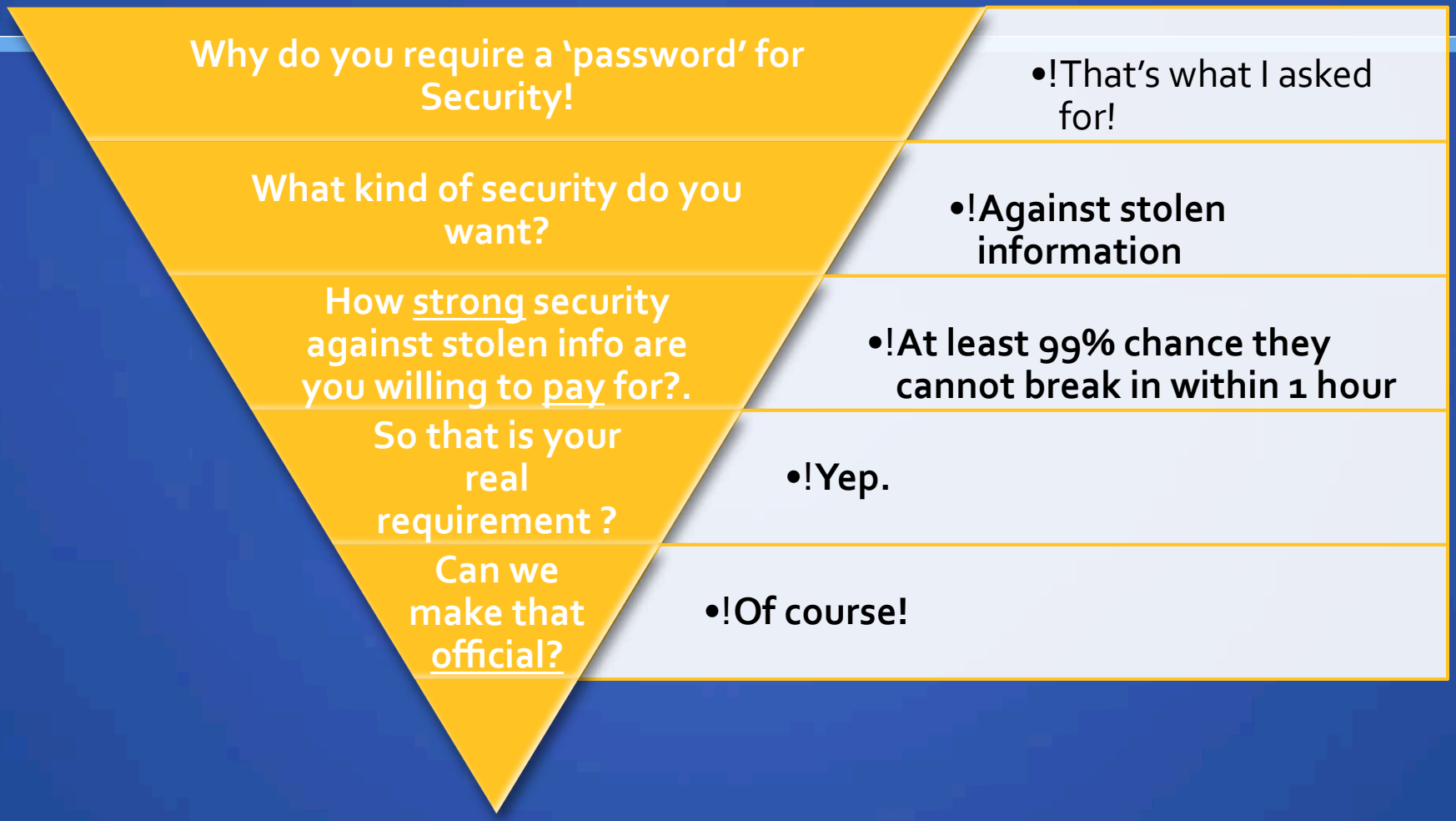
# Finding the right *level*



# Why?

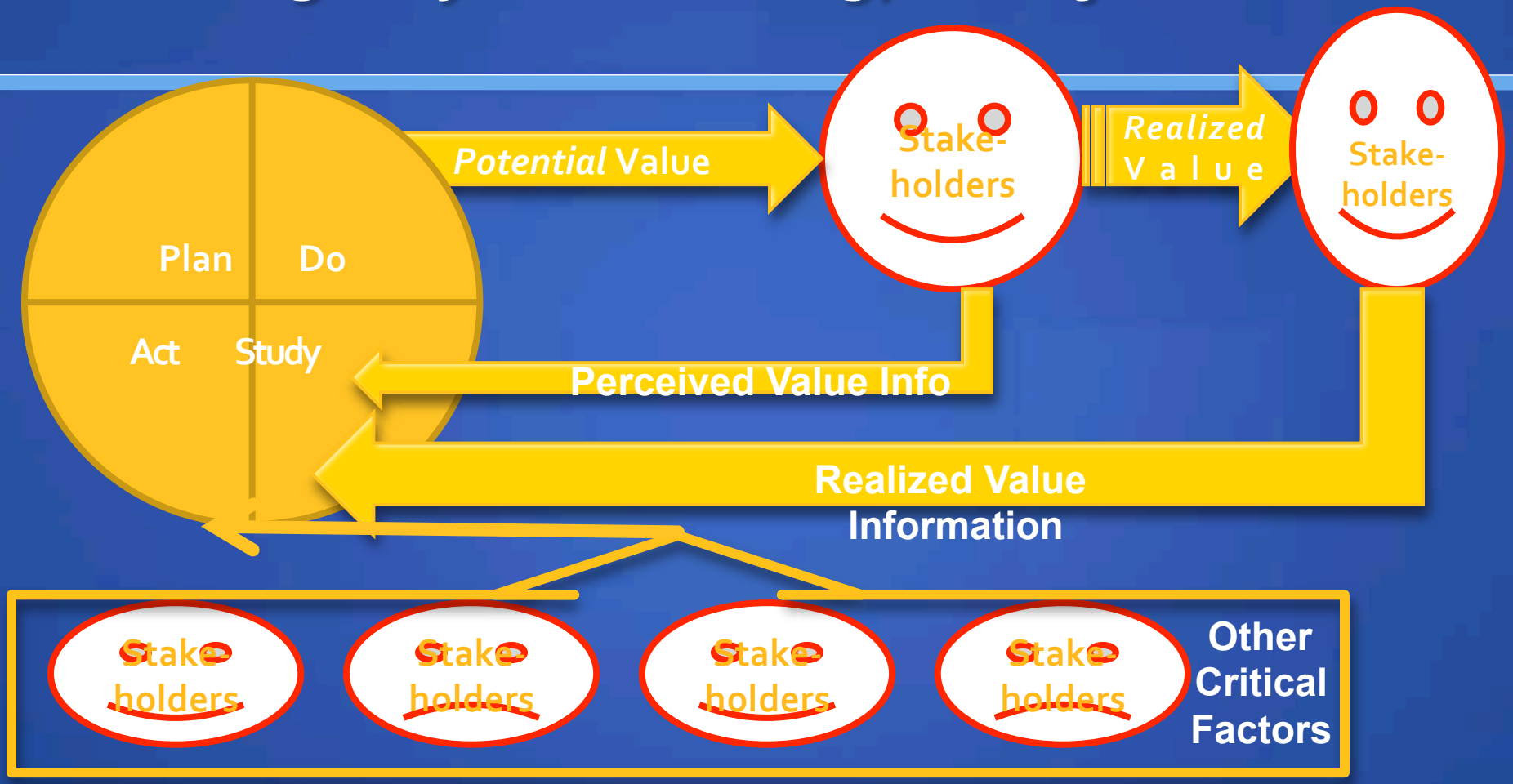
# Example


Why do you require a 'password' for Security!
•!That's what I asked for!
What kind of security do you want?
•!Against stolen information
How strong security against stolen info are you willing to pay for?.
•!At least 99% chance they cannot break in within 1 hour
So that is your real requirement ?
•!Yep.
Can we make that official?
•!Of course!

# Our Client, Real Results
# Real Immediate Stakeholder value

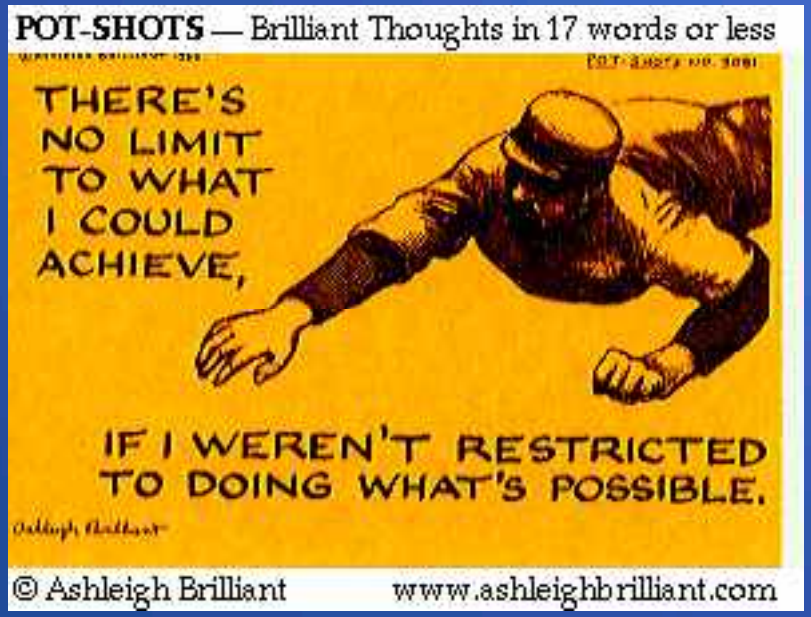
| Description of requirement/work task | Past | Status |
|---|---|---|
| Usability.Productivity: Time for the system to generate a survey | 7200 sec | 15 sec |
| Usability.Productivity: Time to set up a typical specified Market Research-report (MR) | 65 min | 20 min |
| Usability.Productivity: Time to grant a set of End-users access to a Report set and distribute report login info. | 80 min | 5 min |
| Usability.Intuitiveness: The time in minutes it takes a medium experienced programmer to define a complete and correct data transfer definition with Confirmit Web Services without any user documentation or any other aid | 15 min | 5 min |
| Performance.Runtime.Concurrency: Maximum number of simultaneous respondents executing a survey with a click rate of 20 sec and an response time<500 ms, given a defined [Survey-Complexity] and a defined [Server Configuration, Typical] | 250 users | 6000 |

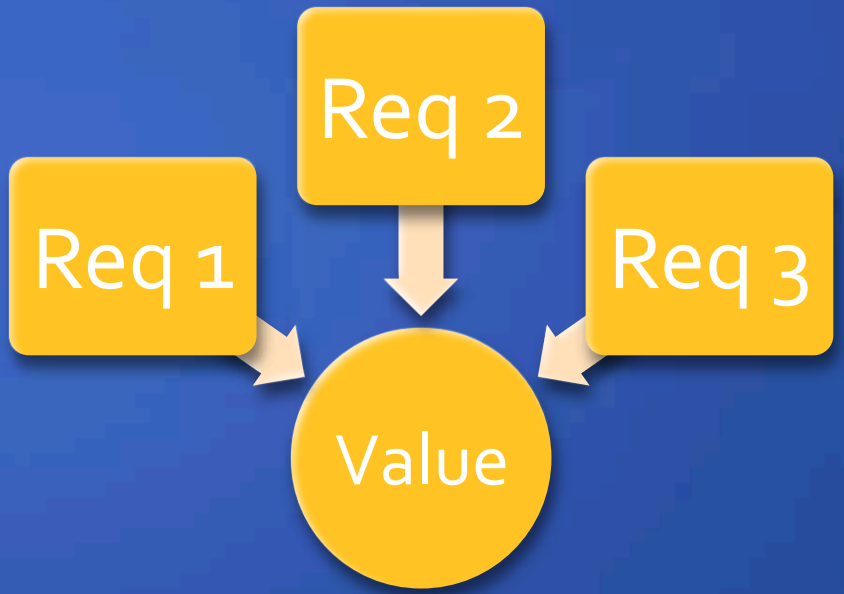
# Value Delivery:
# leading to *Systems Thinking*, not *Software Silos*



# Value Requirements

- ! If requirements are NOT closely tied to value then:
  - ! We risk failure to deliver the value expected, even if 'requirements' are satisfied.



# How can we articulate and document notions of value in a requirement specification?
## Initial Definitions: to base levels requirement levels on
## (this is how the spec looks in 'Planguage')

- ! Usability.Intuitiveness:
- ! Type: Marketing Product Requirement.
- ! Stakeholders: Marketing Director, Support Manager, Training Center
- ! Impacts: Product Sales, Support Costs, Training Effort, Documentation Design.
- ! Supports: Corporate Quality Policy 2.3
- ! Ambition: Any potential user, any age, can immediately discover and correctly use all functions of the product, without training, help from friends, or external documentation
- ! Scale: % chance that defined [User] can successfully complete defined [Tasks] Immediately, with no External help.
- ! Meter [Consumer Reports] tests all tasks for all defined user types, and gives public report.

# How can we articulate and document notions of value in a single requirement specification?

Graphic of previous slide: here are some "Value relationships"

**Supports**: Corporate Quality Policy 2.3

**Impacts**: Product Sales, Support Costs, Training Effort, Documentation Design.

**Ambition**: Any potential user, any age, can immediately discover and correctly use all functions of the product, without training, help from friends, or external documentation

**Stakeholders**: Marketing Director, Support Manager, Training Center

**Scale**: % chance that defined [User] can successfully complete defined [Tasks] Immediately, with no External help.

**Type**: Marketing Product Requirement.

**Usability. Intuitive-ness**:

**Meter** [Consumer Reports] tests all tasks for all defined user types, and gives public report.

# More Requirement Info? What values are we competing against?

In 'Planguage'

- ! Analysis
  - ! Trend [Market = Asia, User = {Teenager, Early Adopters}, Product = Main Competitor, Projection = 2013] 95%±3% <- Market Analysis
  - ! Past [ Market = USA, User = Seniors, Product = Old Version, Task = Photo Tasks Set, When = 2010] 70% ±10% <- Our Labs Measures
  - ! Record [Market = Finland, User = {Android Mobile Phone, Teenagers}, Task = Phone+SMS Task Set, Record Set = January 2010] 98% ±1% <- Secret Report

# Graphic of previous slide "What values are we competing against?" (analysis)

**Past** [ Market = USA, User = Seniors, Product = Old Version, Task = Photo Tasks Set, When = 2010] 70% ±10% <- Our Labs Measures

**Trend** [Market = Asia, User = {Teenager, Early Adopters}, Product = Main Competitor, Projection = 2013] 95%±3% <- Market Analysis

**Record** [Market = Finland, User = {Android Mobile Phone, Teenagers}, Task = Phone+SMS Task Set, Record Set = January 2010] 98% ±1% <- Secret Report

**Analysis**

# Requirement-Level Priority Specs & who, where, when for 'Value'

**Tolerable** [Market = Asia, User = {Teenager, Early Adopters}, Product = Our New Version, Deadline = 2013] 97%±3% <- M… Dir. Speech

**Goal** [ Market = USA, User = Seniors, Product = New Version, Task = Photo Tasks Set, When = 2012] 80% ±10% <- Draft Marketing Plan

**Fail** [Market = Finland, User = {Android Mobile Phone, Teenagers}, Task = Phone +SMS Task Set, Product Release 9.0] Less Than 95%

**Our Product Plans**

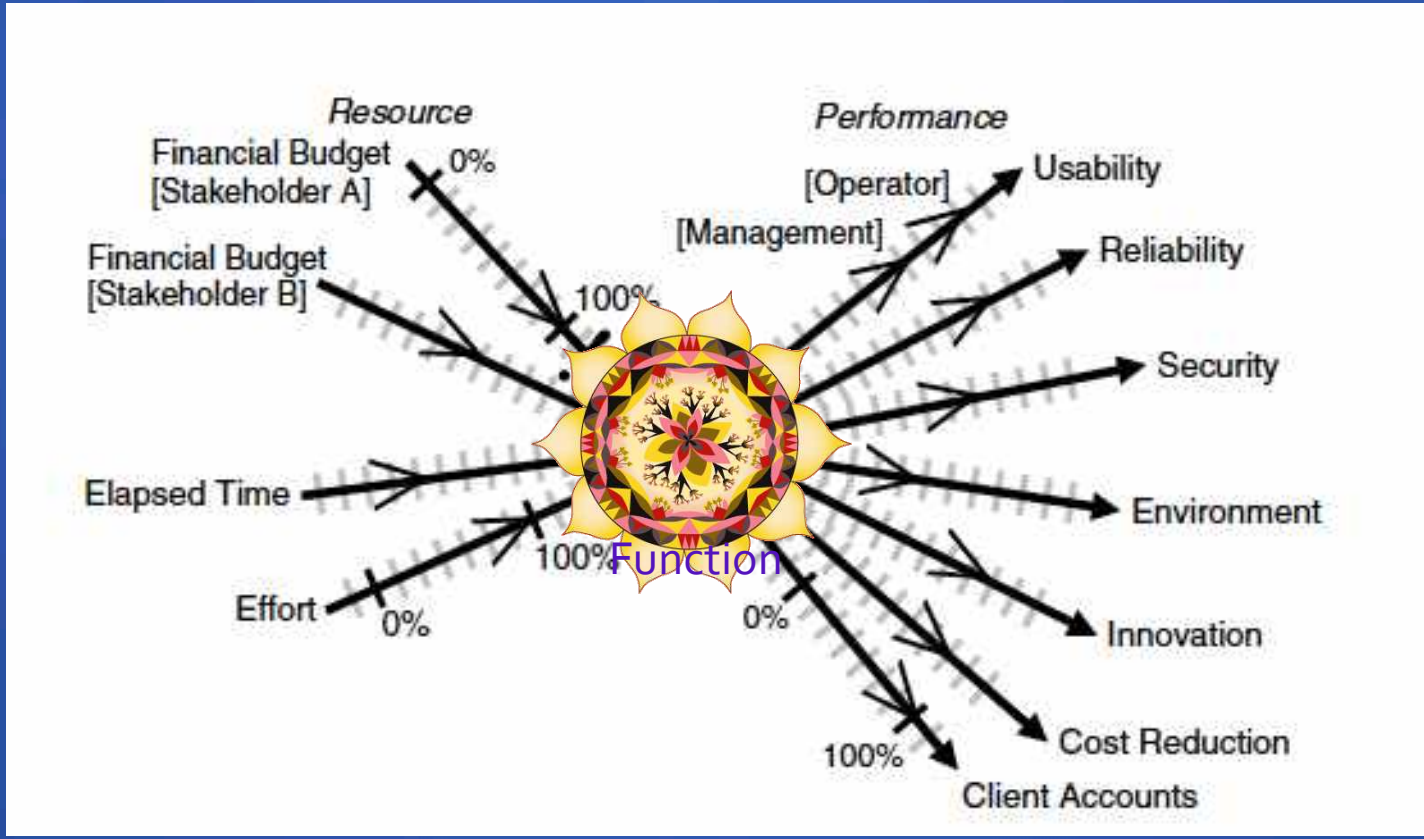
# Quantification: not 'Software Poetry' – a basis for real Software Engineering – not mere 'Softcrafting'

- In physical science the first essential step in the direction of learning any subject is to find principles of numerical reckoning and practicable methods for measuring some quality connected with it.
- I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it;
- but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind;
- it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of *Science*, whatever the matter may be."

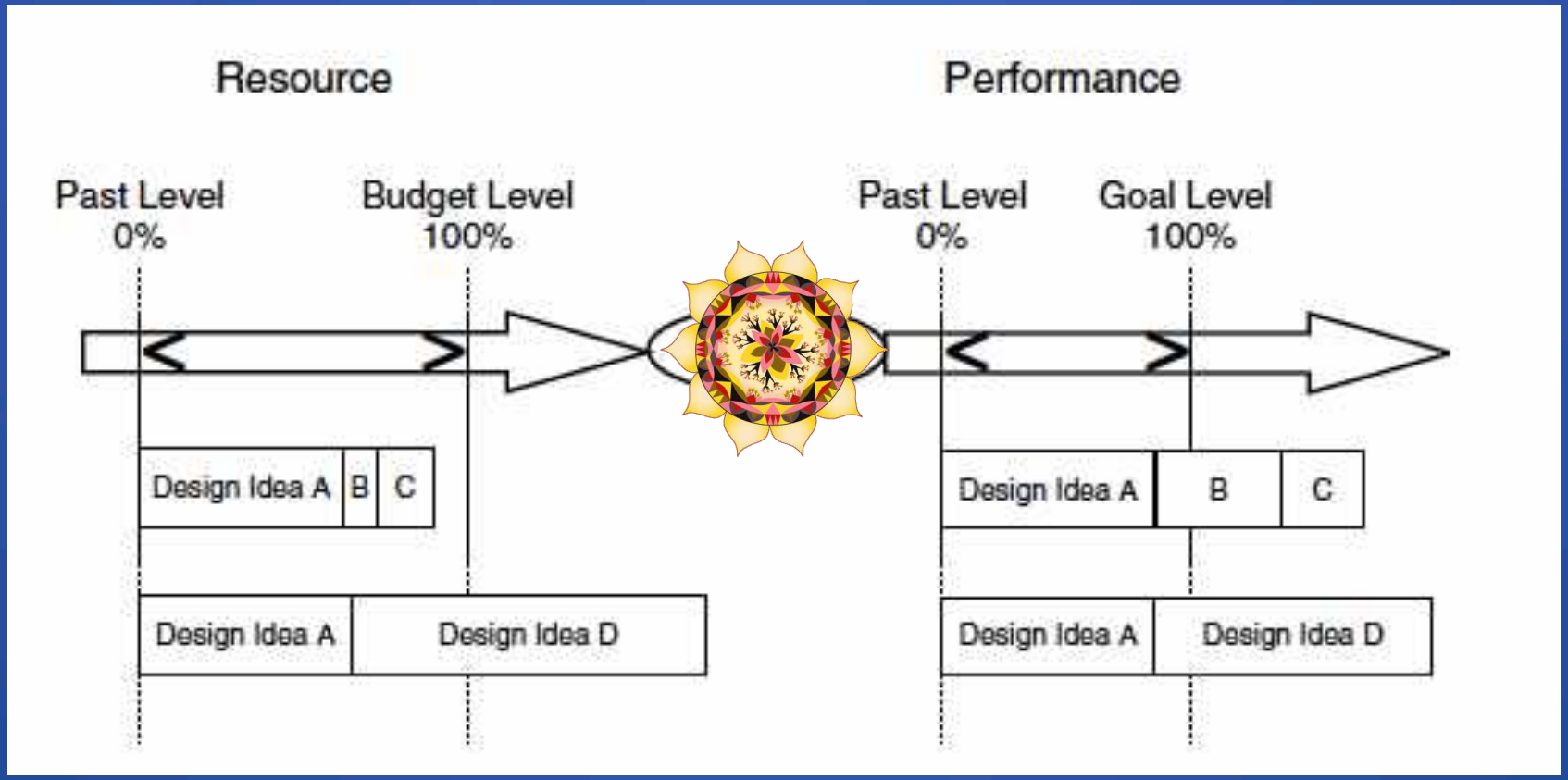
- [PLA, vol. 1, "Electrical Units of Measurement", 1883-05-03]
- Lord Kelvin, Sir William Thompson

# "If you can not measure it, you can not improve it."

# Many Qualities and costs



# Quantitative Design



# Quality Quantification in 'Planguage'

## Usability.Intuitiveness:

**Type: Marketing Product Quality Requirement.**

**Ambition: Any potential user, any age, can immediately discover and correctly use all functions of the product, without training, help from friends, or external documentation**

**Scale: % chance that defined [User] can successfully complete defined [Tasks] Immediately, with no External help.**

**Meter [Consumer Reports] tests all tasks for all defined user types, and gives public report.**

**Goal [ Market = USA, User = Seniors, Product = New Version, Task = Photo Tasks Set, When = 2012] 80% ±10%** **<- Draft Marketing Plan**

# *Rich* Specification:
# Requirement specifications need far more info, than the 'requirement' *itself*!

**Rich Specification**

**Background**

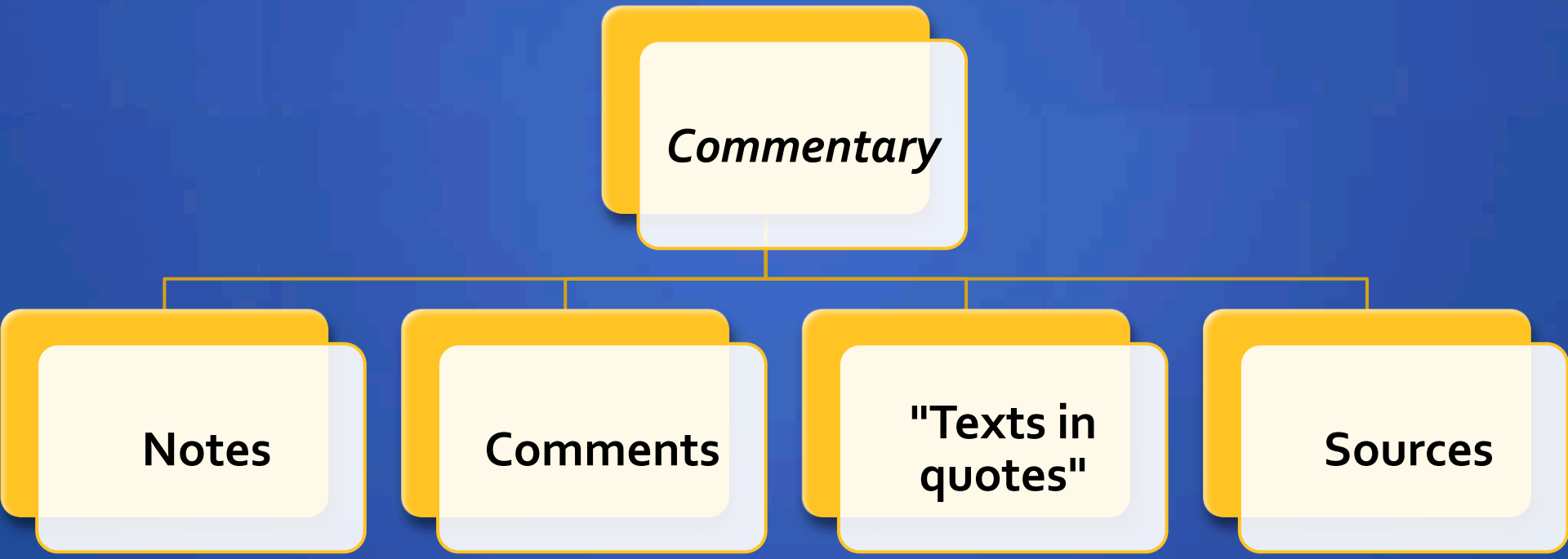
**Commentary**

**Core**

# Core Specs


Core Specification Parameters include:
Scale
Meter
Goal
Definitions
Constraint

# *Commentary* Specs



# "Background" Specs (often, "Relationships")

# Why do the background specification elements need to be included? Here are some functions of the background information:

| | | |
|---|---|---|
| 1. Value | 2. Prioritization | 3. Risks |
| 4. Detail Level | 5. Updating | 6. Level Synchro |
| 7. Quality Control | 8. Clarity | 9. etc. |

# Background for Core Specs

Reliability:
Type: Performance.Quality.
Owner: Quality Director
Author: John Engineer
Stakeholders: {Users, Shops, Repair Centers}.
Scale: Mean Time Between Failure.
Goal [Users]: 20,000 hours. <- Customer Survey, 2004
**Rationale: anything less would be uncompetitive.**
**Assumption: our main competitor does not improve more than 10%.**
**Issues: new competitors might appear.**
**Risks: the technology for reaching this level might have excessive costs.**
**Design Suggestion: triple redundant software and database system.**
Goal [Shops]: 30,000 hours. <- Dixons' Chain [Quality Director].
**Rationale: customer contract specification.**
**Assumption: this is technically possible today.**
**Issues: the necessary technology might cause undesired schedule delays.**
**Risks: the customer might merge with a competitor chain and leave us to foot the costs that they might no longer require.**
**Design Suggestion: Simplification and reusing known components.**

*Example: a requirement specification can be embellished with many background specifications that will help us to understand risks associated with one or more other requirement specification elements.*

# 10. Ten Principles for Successful Requirements Methods.

## Here is a summary of my advice for more successful requirement methods in the form of some principles, or 'admonishments':

- ! 1. Quality requirements must be quantified.
- ! 2. Requirement specifications must be rich with relevant background
- ! 3. Requirements must be finally developed based on incremental feedback from stakeholders, as to their real value
- ! 4. Requirements need to be accompanied by many types of signals about their priority, and value
- ! 5. Requirements must represent the stakeholders' real and core values, not a perceived means of delivering those values

# 10. Ten Principles for Successful Requirements Methods.

## Here is a summary of my advice for more successful requirement methods in the form of some principles, or 'admonishments':

- ! 6. The top-level most-critical-few project requirements, are the major focus; all others are supporting details
- ! 7. Requirements are not 'required': they are merely *valued*
- ! 8. The top ten critical requirements for any project can be quantified and put on a single page.
- ! 9. A good first draft of the top ten critical requirements for any project can be made in a day's work.
- ! 10. Requirements will forever change, because our world is changing, so don't ask to get final stable requirements from anyone ever.

# The Teachable Details


- Classic Ideas
  - Principles
  - Measures
  - Processes
  - Concept Glossary
- Cases
- Systems Engineering Level
- 60% of book is about Requirements

- Free digital copy?
  - Email Tom@Gilb.com
    - Request "BOOK"
    - And/or request "SLIDES"
    - And/or request "PAPER"

# End of SPIN lecture

- ! The following slides are included to give more realistic detail from recent work we have done in London (2010)
- ! We have no illusions of presenting them in the SPIN 30 minute time frame , unless a speaker falls away!

# Setting and Tracking Project Objectives The Tom Gilb Approach.


Tuesday 7 Dec 20xx
At BCS London
Reused for ACCU 15 April 2011
Included for SPIN 27 June 2011 London
as extra examples

# The entire talk, for those who like simple slides

1. Quantify all improvement requirements
2. Estimate quantified impact of all ´means´
3. Do the project in small 2% increments
    1. Highest value for stakeholder first
    2. Measure real value delivered (Goals reached)
    3. Learn from deviations and successes
    4. Modify all requirements and designs as experience and environment dictates

# The details

- If you like simplified slides and unfounded generalisations
  - Leave now, or fall asleep, or check messages and news on your phone.

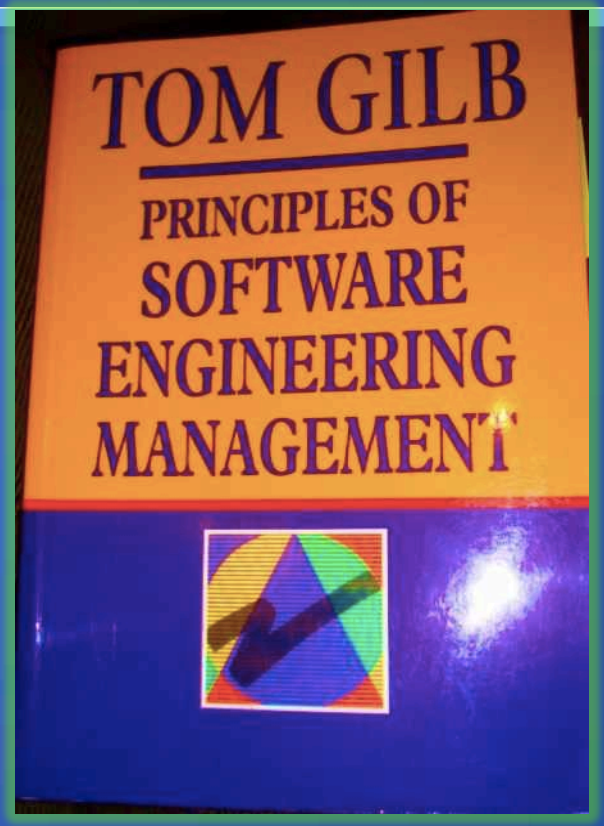
- I personally prefer concrete details, and real examples★
  - So if you choose to stay on, there is going to be a lot of detail
  - In fact – you will not be able to study and get explained all detail
  - But the slides are now at gilb-com/downloads
  - So, if they seem interesting you can study them at your leisure
  - In addition, if you need detailed explanation you will find it in the book Competitive Engineering. If you ask me at tom@gilb.com I´ll be happy to send you a free digital copy.
  - If you are too shy to ask, then copies can be acquired the usual way, and there is plenty of detail free at gilb.com

- Last chance to escape is NOW

- ★ I want to show examples as realistic as possible, but in order to maintain client confidentiality I have:
  - not revealed client names, person names, project names, site location, application names.
  - I have also randomly changed numbers. It is the principles of realistic use I want to share.

# The theory and practice of our `Evo' method for project management

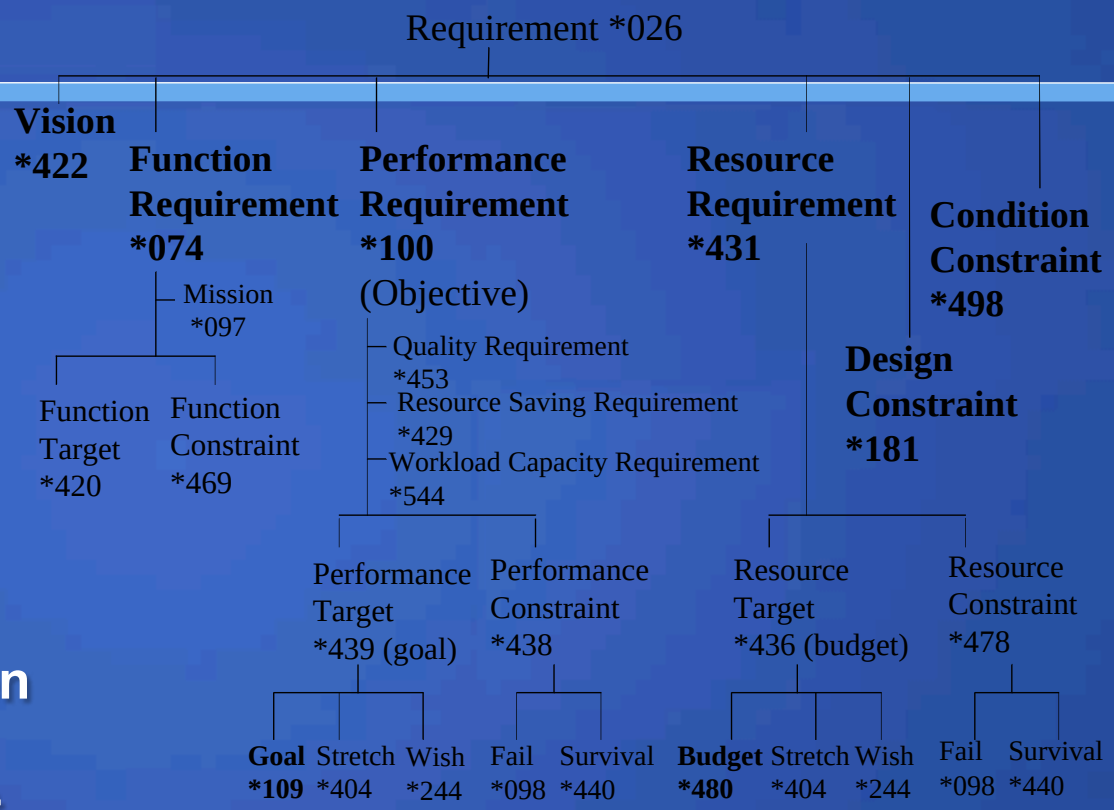

2005




1983

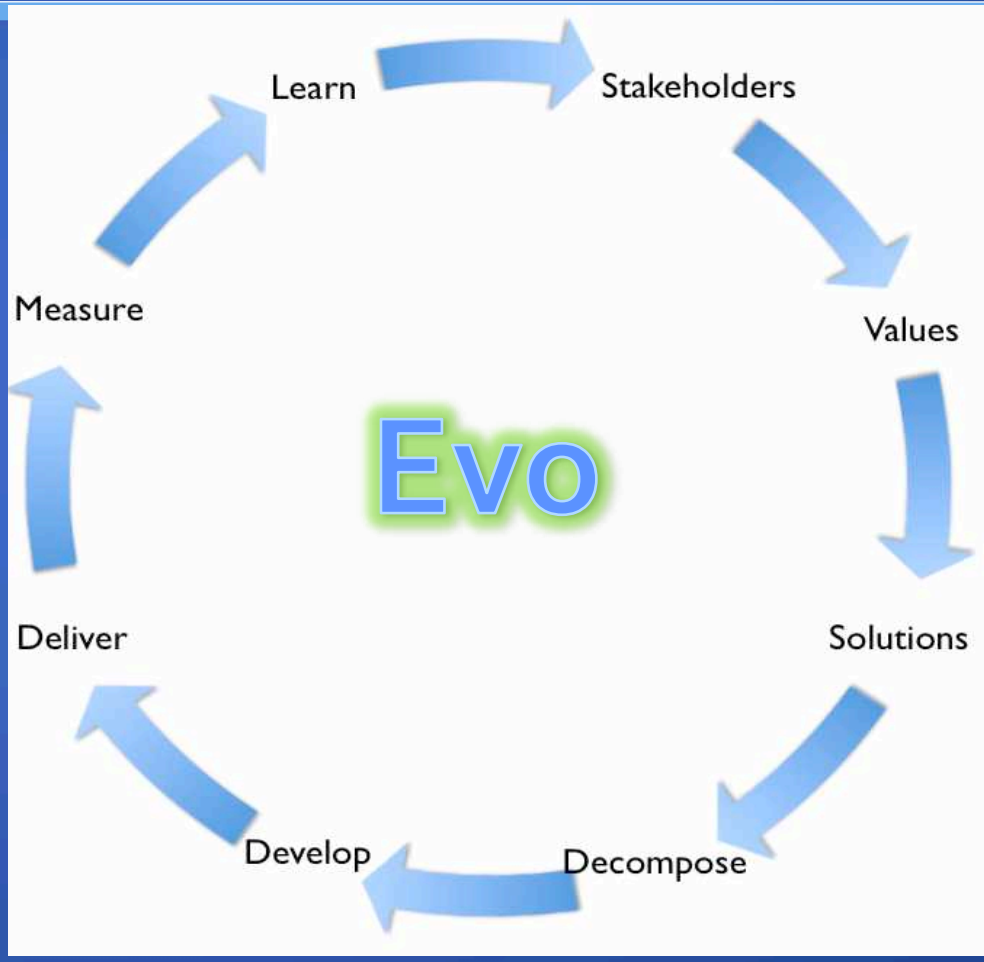
# Planguage (Planning Language).

- A Planning Language - an engineering language
- A systems engineering language (software, management)
- Concept Glossary
- Graphical Language
- Control of Multiple dimensions: Performance, Costs, Constraints
- Extendible, Tailorable, Open
- Rich views, traceability, configuration management
- Risk Management
- Priority Management



The Evo method (also known as Value Delivery Method VDM) is a radical simplification (Lean!) from a project management view.

- **VALUE CLARITY: Quantify the most-critical project objectives on day 1**
- **SOLUTION RESPONSIBILITY: Quantify impact of all suggested strategies, architectures, on all critical objectives, deadline, and budget.**
- **VALUE REPORTING: Measure project progress early, continuously, in terms of top ten objectives**
- **JUST-IN-TIME PLANNING: Dynamic intelligent do-next prioritisation: Value/cost based**




Original diagram by Kai Gilb

# Lack of clear top level project objectives has seen real projects fail for $100+ million: personal experience, real case

## Bad Objectives, for 8 years

1. *Central to The Corporations business strategy is to be the world's premier integrated_<domain> service provider.*

2. *Will provide a much more efficient user experience*

3. *Dramatically scale back the time frequently needed after the last data is acquired to time align, depth correct, splice, merge, recompute and/or do whatever else is needed to generate the desired products*

4. *Make the system much easier to understand and use than has been the case for previous system.*

5. *A primary goal is to provide a much more productive system development environment than was previously the case.*

6. *Will provide a richer set of functionality for supporting next-generation logging tools and applications.*

7. *Robustness is an essential system requirement (see partial rewrite in example at right)*

8. *Major improvements in data quality over current practice*

## Quantified Objectives (in Planguage),

**Robustness.Testability:**

**Type: Software Quality Requirement.**
**Version: 20 Oct 2006-10-20**
**Status: Demo draft,**
**Stakeholder: {Operator, Tester}.**
**Ambition: Rapid-duration automatic testing of <critical complex tests>, with extreme operator setup and initiation.**

**Scale: the duration of a defined [Volume] of testing, or a defined [Type], by a defined [Skill Level] of system operator, under defined [Operating Conditions].**

**Goal [All Customer Use, Volume = 1,000,000 data items, Type = WireXXXX Vs DXX, Skill = First Time Novice, Operating Conditions = Field, {Sea Or Desert}. <10 mins.**

# VALUE CLARITY:
# Quantify the most-critical project objectives on day 1

P&L-Consistency&T P&L: Scale: total adjustments btw Flash/Predict and Actual (T+1) signed off P&L. per day. Past 60 Goal: 15

Speed-To-Deliver: Scale: average Calendar days needed from New Idea Approved until Idea Operational, for given Tasks, on given Markets.
Past [2009, Market = EURex, Task =Bond Execution] 2-3 months ?
Goal [Deadline =End 20xz, Market = EURex, Task =Bond Execution] 5 days

Operational-Control: Scale: % of trades per day, where the calculated economic difference between OUR CO and Marketplace/ Clients, is less than "1 Yen"(or equivalent).
Past [April 20xx] 10% change this to 90% NH Goal [Dec. 20xy] 100%

Operational-Control.Consistent: Scale: % of defined [Trades] failing full STP across the transaction cycle. Past [April 20xx, Trades=Voice Trades] 95%
Past [April 20xx, Trades=eTrades] 93%
Goal [April 20xz, Trades=Voice Trades] <95 ± 2%>
Goal [April 20xz, Trades=eTrades] 98.5 ± 0.5 %

Operational-Control.Timely.End&OvernightP&L Scale: number of times, per quarter, the P&L information is not delivered timely to the defined [Bach-Run].
Past [April 20xx, Batch-Run=Overnight] 1 Goal [Dec. 20xy, Batch-Run=Overnight] <0.5> Past [April 20xx, Batch-Run= T+1] 1 Goal [Dec. 20xy, Batch-Run=End-Of-Day, Delay<1hour] 1

Operational-Control.Timely.IntradayP&L Scale: number of times per day the intraday P&L process is delayed more than 0.5 sec.

Operational-Control.Timely.Trade-Bookings Scale: number of trades per day that are not booked on trade date. Past [April 20xx] 20 ?

Front-Office-Trade-Management-Efficiency Scale: Time from Ticket Launch to trade updating real-time risk view
Past [20xx, Function = Risk Mgt, Region = Global] ~ 80s +/- 45s ??
Goal [End 20xz, Function = Risk Mgt, Region = Global] ~ 50% better?

Managing Risk – Accurate – Consolidated – Real Time

Risk.Cross-Product Scale: % of financial products that risk metrics can be displayed in a single position blotter in a way appropriate for the trader (i.e. – around a benchmark vs. across the curve).
Past [April 20xx] 0% 95%. Goal [Dec. 20xy] 100%

# Example of Estimating the Value of a Technical IT System Improvement (20xx)

| TIME.HEDGE - Time for hedge execution of average-sized trade | |
|---|---|
| **Ambition:** | Reduce the average time taken from verbal agreement ("done") to hedge execution of an <average-sized> trade |
| **Scale:** | Seconds |
| **Past:** | [2Q10; Region=NA] 30 seconds |
| **Goal:** | [2Q12; Region=ALL] 3 seconds |
| **Business Value:** | **[Type=Revenue; Reason=Improved Hedging P&L; Goal Scale=3 seconds; Region=Global] Revenue= +$1mm to +$2mm** |

| SPEED.CODE – Mean elapsed time for code changes | |
|---|---|
| **Ambition:** | Reduce the mean elapsed time for code changes from business request to end-user go live |
| **Scale:** | Mean time in calendar days over <three> months |
| **Past:** | [2009; Market=Eurex; Task=Bond execution] <60 - 90> days |
| **Goal:** | [2Q12; Market=Eurex; Task=Bond execution] 5 days |
| **Business Value:** | **[Type=Revenue; Reason=Earlier P&L from faster time to Market; Goal Scale=5 days; Region=Global] Revenue= +$2mm to +$5mm** |

This is an example made to reason about specification standards and is not supposed to be a real spec. Just realistic.

# Quantified Objective in Planguage Tool: notice Stakeholders

[redacted]

**Timeliness**

*Version* 1.12.
*Type:* Top Level Business Goal
*Quality*
*Owner:* Sam, Andy
Stakeho **Primary:** Front Office, Middle Office; **Secondary:** Senior Management, Product Control, Financial Control, Internal Audit
*Ambitio* *Consistently meet timeliness SLAs for the daily business process. E. g. Availability of SOD risk*

**Scale:** **average number of days per year that defined [SLA] is exceeded, due to the [System], for defined [Scope]**

| | | *Day & Time* | | *Conditions (Place, Defined, Stakeholder, etc.)* | ] | *number* | |
|---|---|---|---|---|---|---|---|
| Past | [at | | , | | ] | | ± |
| **Status** | [at | | , | Sum | ] | **0** | ± |
| **Tolerable** | [by | 2014 | , | Sum | ] | **3** | ± |
| **Goal** | [by | 2014 - j | ... , | Sum | ] | **100** | ± |
| Past | [ | | ... , | SLA=SOD risk by 7.30am, Scope=Exxxx Exxxxx, System=OXXXX | ] | 6 | ± |
| Status | [ | | , | SLA=SOD risk by 7.30am, Scope=Exxxx Exxxxx, System=OXXXX | ] | **6** | ± |
| Tolerable | [ | 2014 - j | ... , | SLA=SOD risk by 7.30am, Scope=Exxxx Exxxxx, System=TBD | ] | **2** | ± |
| Goal | [ | 2014 - j | , | SLA=SOD risk by 7.30am, Scope=Exxxx Exxxxx, System=TBD | ] | **0** | ± |
| | [ | | ... , | | ] | | ± |
| Past | | | ... | SLA=Initial EOD P/L within 5 mins of being avail. in Kxxxx, Scope=Exxxx Flo | | 252 | |
| Status | | | | SLA=Initial EOD P/L within 5 mins of being avail. in Kxxxx, Scope=Exxxx Flo | | **252** | |
| Tolerable | | 2014 - j | ... | SLA=Initial EOD P/L within 5 mins of being avail. in Kxxxx, Scope=Exxxx Flo | | **15** | |
| Goal | | 2014 - j | | SLA=Initial EOD P/L within 5 mins of being avail. in Kxxxx, Scope=Exxxx Flo | | **0** | |
| | | | ... | | | | |
| Past | | | ... | SLA=SOD risk by 7am, Scope=Exxxx Flow Options, System=Txxxx | | 1 | |
| Status | | | | SLA=SOD risk by 7am, Scope=Exxxx Flow Options, System=Txxxx | | 1 | |
| Tolerable | | 2014 - j | ... | SLA=SOD risk by 7am, Scope=Exxxx Flow Options, System=TBD | | 1 | |
| Goal | | 2014 - j | | SLA=SOD risk by 7am, Scope=Exxxx Flow Options, System=TBD | | 0 | |
| | | | ... | | | | |

# SOLUTION RESPONSIBILITY:
## Quantify impact of all suggested strategies, architectures, on all critical objectives, deadline, and budget.

### NOT ☹

- Just *name* an idea/design
- Assert the design is good
- Fail to explain how you know
- Fail to take responsibility
- Fail to measure results
- Fail to consider all requirements
- Fail to even estimate costs
- *"Tool Simulators, Reverse Cracking Tool, Generation of simulated telemetry frames entirely in software, Application specific sophistication, for <our domain>– recorded mode simulation by playing back the dump file, Application test harness console" <-6.2.1 HFA*

### YES ! ☺

- Describe detail for estimation
- Estimate the impact on Goals
- Estimate the ± uncertainty
- Specify the estimate evidence
- Estimate all objectives
- Estimate all resources

# Don´t we need more detail to estimate costs and other attributes of a design?

## Simple design description

- ! Design Spec:
  - !Risk and P/L aggregation service

## Ask the following questions about such brief design descriptions

- ! What will it cost to develop?
- ! What will it cost to operate?
- ! Will we deliver any or all of the quality and performance Goal levels on time?
- ! What are the critical assumptions, that might fail or be untrue?
- ! What are the known risks?
- ! Do we actually understand anything of consequence from such a short design specification?

See enlarged view of this slide in following slides. This is a 1-page overview

# Defining a Design/Solution/Architecture/Strategy (Planguage, CE Design Template)
# 1. enough detail to estimate, 2. some impact assertion, 3. Assumptions, Risks, Issues

Orbit Application Base: (formal Cross reference Tag)

Type: Primary Architecture Option

========== Basic Information ==========

Version: Nov. 30 20xx 16:49, updated 2.Dec by telephone and in meeting. 14:34

Status: Draft

Owner: Brent Barclays

Expert: Raj Shell, London

Authority: for differentiating business environment characteristics, Raj Shell, Brent Barclays(for overview)

Source: <Source references for the information in this specification. Could include people>. Various, can be done later BB

Gist: risk and P/L aggregation service, which also provides work flow/adjustment and outbound and inbound feed support. Currently used by Rates ExtraBusiness, Front Office and Middle Office, USA & UK.

Description: <Describe the design idea in sufficient detail to support the estimated impacts and costs given below>.

D1: ETL Layer. Rules based highly configurable implementation of the ETL Pattern, which allows the data to be onboarded more quickly. Load and persist new data very quickly. With minimal development required. -> Business-Capability-Time-To-Market, Business Scalability

D2: high performance risk and P/L aggregation processing (Cube Building). -> Timeliness, P/L Explanation, Risk & P/L Understanding, Decision Support, Business Scalability, Responsiveness.

D3: Orbit supports BOTH Risk and P/L -> P/L Explanation, Risk & P/L Consistency, Risk & P/L Understanding, Decision Support.

D4: a flexible configurable workflow tool, which can be used to easily define new workflow processes -> Books/Records Consistency, Business Process Effectiveness, Business Capability Time to Market.

D5: a report definition language, which provides 90+% of the business logic contained with Orbit, allows a quick turnaround of new and enhanced reports with minimal regression testing and release procedure impact. -> P/L Explanation, Risk & P/L Understanding, Business Capability Time to Market, Business Scalability.

D6: Orbit GUI. Utilizes an Outlook Explorer metaphor for ease of use, and the Dxx Express Grid Control, to provide high performance Cube Interrogation Capability. -> Responsiveness, People Interchangeability, Decision Support, Risk & P/L Understanding.

D7: downstream feeds. A configurable event-driven data export service, which is used to generate feeds -> Business Process Effectiveness, Business

========== Priority and Risk Management ==========

Assumptions: <Any assumptions that have been made>.

A1: FCCP is assumed to be a part of Orbit. FCxx does not currently exist and is Dec 20xx 6 months into Requirements Spec. <- Picked up by TsG from dec 2 discussions AH MA JH EC.

Consequence: FCxx must be a part of the impact estimation and costs rating.

A2: Costs, the development costs will not be different. All will base on a budget of say $nn mm and 3 years. The o+

costs may differ slightly, like $n mm for hardware. MA AH 3 dec

A3:Boss X will continue to own Orbit. TSG DEC 2

A4: the schedule, 3 years, will constrained to a scope we can in fact deliver, OR we will be given additional budget. If not "I would have a problem" <- BB

A5: the cost of expanding Orbit will not be prohibitive. <- BB 2 dec

A6: we have made the assumption that we can integrate Oribit with PX+ in a sensible way, even in the short term <- BB

Dependencies: <State any dependencies for this design idea>.

D1: FCxx replaces Px+ in time. ? tsg 2.12

Risks: <Name or refer to tags of any factors, which could threaten your estimated impacts>.

R1. FCxx is delayed. Mitigation: continue to use Pxx <- tsg 2.12

R2: the technical integration of Px+ is not as easy as thought & we must redevelop Oribit

R3: the and or scalability and cost of coherence will not allow us to meet the delivery.

R4: scalability of Orbit team and infrastructure, first year especially <- BB. People, environments, etc.

R5: re Cross Desk reporting Requirement, major impact on technical design. Solution not currently known. Risk no solution allowing us to report all P/L

Issues: <Unresolved concerns or problems in the specification or the system>.

I1: Do we need to put the fact that we own Orbit into the objectives (Ownership). MA said, other agreed this is a huge differentiator. Dec 2.

I2: what are the time scales and scope now? Unclear now BB

I3: what will the success factors be? We don't know what we are actually being asked to do. BB 2 dec 20xx

I4: for the business other than flow options, there is still a lack of clarity as to what the requirements are and how they might differ from Extra and Flow Options. BB

# Design Spec Enlarged 1 of 2

## Spec Headers

Orbit Application Base: (formal Cross reference Tag)

Type: Primary Architecture Option

==== Basic Information ==========

Version: Nov. 30 20xx 16:49, updated 2.Dec by telephone and in meeting. 14:34

Status: Draft (PUBLIC EXAMPLE EDIT)

Owner: Brent Barclays

Expert: Raj Shell, London

Authority: for differentiating business environment characteristics, Raj Shell, Brent Barclays(for overview)

Source: <Source references for the information in this specification. Could include people>. Various, can be done later BB

Gist: risk and P/L aggregation service,
which also provides work flow/ adjustment and outbound and inbound feed support. Currently used by Rates Extra Business, Front Office and Middle Office, USA & UK.

## Detailed Description and -> Impacted Objectives

Description: <Describe the design idea in sufficient detail to support the estimated impacts and costs given below>.

D1: ETL Layer. Rules based highly configurable implementation of the ETL Pattern, which allows the data to be onboarded more quickly. Load and persist new data very quickly. With minimal development required. -> Business-Capability-Time-To-Market, Business Scalability

D2: high performance risk and P/L aggregation processing (Cube Building). -> Timeliness, P/L Explanation, Risk & P/L Understanding, Decision Support, Business Scalability, Responsiveness.

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D6: Orbit GUI. Utilizes an Outlook Explorer metaphor for ease of use, and the Dxx Express Grid Control, to provide high performance Cube Interrogation Capability. -> Responsiveness, People Interchangeability, Decision Support, Risk & P/L Understanding.

D7: downstream feeds. A configurable event-driven data export service, which is used to generate feeds . -> Business Process Effectiveness, Business Capability Time to Market.

# Design Spec Enlarged 2 of 2

==== Priority & Risk Management ========

Assumptions*: <Any assumptions that have been made>.*

A1: FCCP is assumed to be a part of Orbit. FCxx does not currently exist and is Dec 20xx 6 months into Requirements Spec. <- Picked up by TsG from dec 2 discussions AH MA JH EC.

Consequence: FCxx must be a part of the impact estimation and costs rating.

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A3:Boss X will continue to own Orbit. TSG DEC 2

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A5: the cost of expanding Orbit will not be prohibitive. <- BB 2 dec

A6: we have made the assumption that we can integrate Oribit with PX+ in a sensible way, even in the short term <- BB

Dependencies: *<State any dependencies for this design idea>.*

D1: FCxx replaces Px+ in time. ? tsg 2.12

Risks*: <Name or refer to tags of any factors, which could threaten your estimated impacts>.*

R1. FCxx is delayed. Mitigation: continue to use Pxx<- tsg 2.12

R2: the technical integration of Px+ is not as easy as thought & we must redevelop Oribit

R3: the and or scalability and cost of coherence will not allow us to meet the delivery.

R4: scalability of Orbit team and infrastructure, first year especially <- BB. People, environments, etc.

R5: re Cross Desk reporting Requirement, major impact on technical design. Solution not currently known. Risk no solution allowing us to report all P/L

Issues*: <Unresolved concerns or problems in the specification or the system>.*

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I2: what are the time scales and scope now? Unclear now BB

I3: what will the success factors be? We don't know what we are actually being asked to do. BB 2 dec 20xx

I4: for the business other than flow options, there is still a lack of clarity as to what the requirements are and how they might differ from Extra and Flow Options. BB

I5: the degree to which this option will be seen to be

# Value Delivery Cycle: Measure

# The impact of a solution, on a single improvement objective

Solution ABC

20 seconds

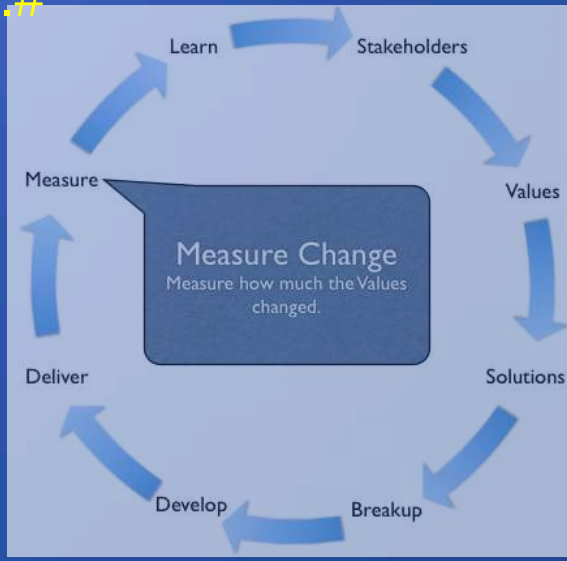
Function

Attribute

Past "
[Dec. 2010] "
50 sec.#

Tolerable "
[April 2015] "
40 sec.#

Goal "
[April 2016] "
15 sec.#



# Impact Estimation

Improvement

Tables

| Value Requirements Status when | Tolerable when | Goal when | Operating Model Consistency units | % of Goal |
|---|---|---|---|---|
| **P&L-Consistency&T P&L** | | | -20 | 44% |
| 60 | 0 | 15 | -10 | 22% |
| 0 | 0 | 0 | 0.1 | 4% |
| **Speed-To-Deliver** | | | -20 | 29% |
| 75 | 30 | 5 | -7 | 10% |
| 0 | 0 | 0 | 0.1 | 3% |
| **Operational-Control.Accurate** | | | 5 | 50% |
| 90 | 99 | 100 | 5 | 50% |
| 0 | 0 | 0 | 0.1 | 5% |
| **Operational-Control.Consistent** | | | 1 | 50% |
| 97 | 0 | 99 | 0.2 | 10% |
| 0 | 0 | 0 | 0.2 | 10% |
| **Operational-Control.Timely.End&Overnigh** | | | -1 | 200% |
| 1 | 1 | 0.5 | -0.5 | 100% |
| 0 | 0 | 0 | 0.2 | 40% |
| **Operational-Control.Timely.IntradayP&L** | | | | |
| 1 | 2 | 3 | | |
| 0 | 0 | 0 | | |
| **Operational-Control.Timely.Trade-Booking** | | | -15 | 75% |

Estimate Units & %

± Uncertainty Worst Case range

Credibility Adjustment 0.0 to 1.0

Based on tool built by Kai Gilb

# Impact Estimation Concepts

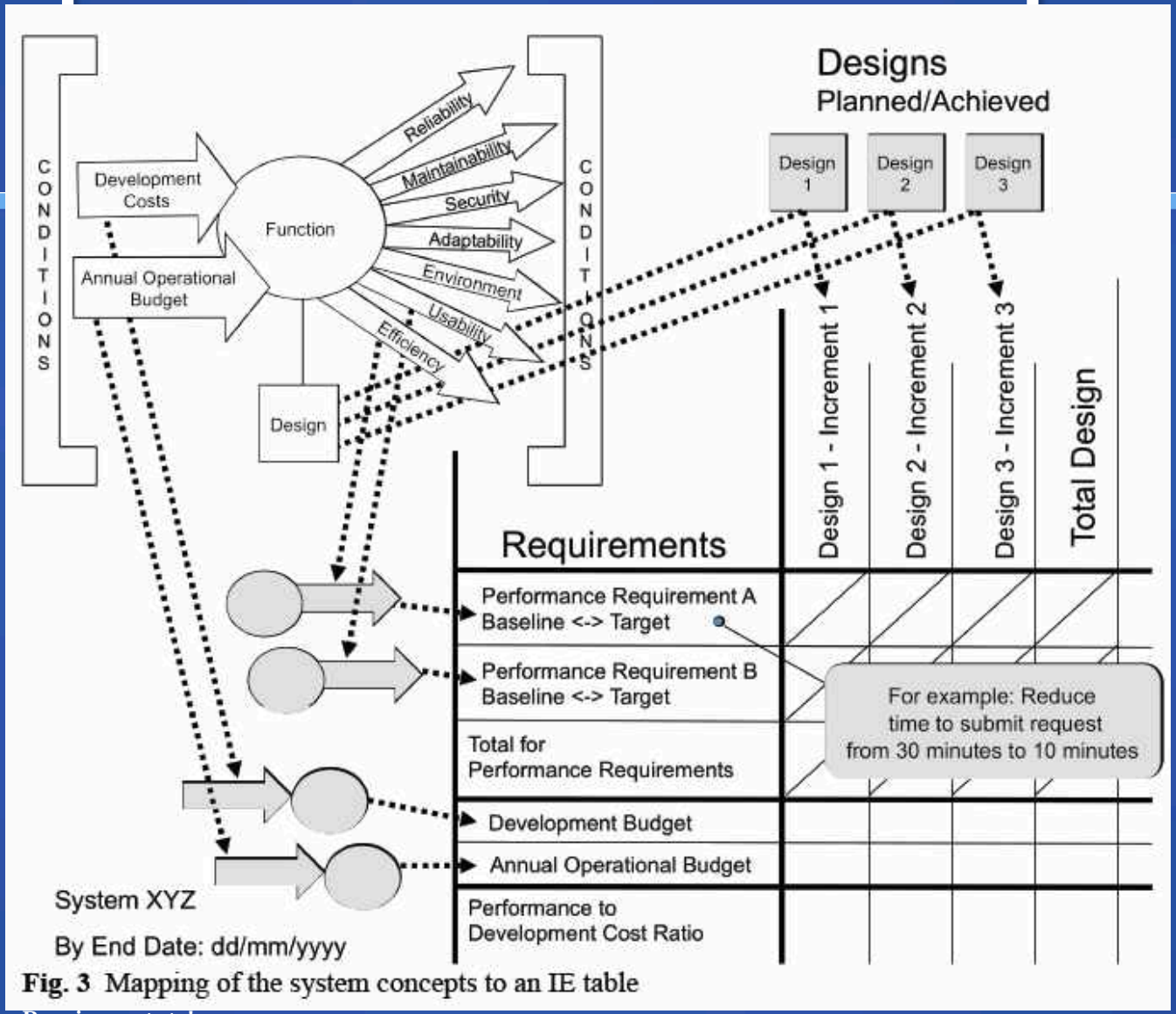



**Fig. 3** Mapping of the system concepts to an IE table

SOURCE !
**Using Metrics within System Requirements to!**
**Express Quality and Derive Stakeholder Value!**
Lindsey Brodie .

# Summary of Options wrt Risk (2010)

Sum
Conservative Impact
"worst worst case"

**Sum Impact
Of strategy on all
goals**


**Sum ±
Variation
or Range of
uncertainty**

Based on work done by Kai Gilb

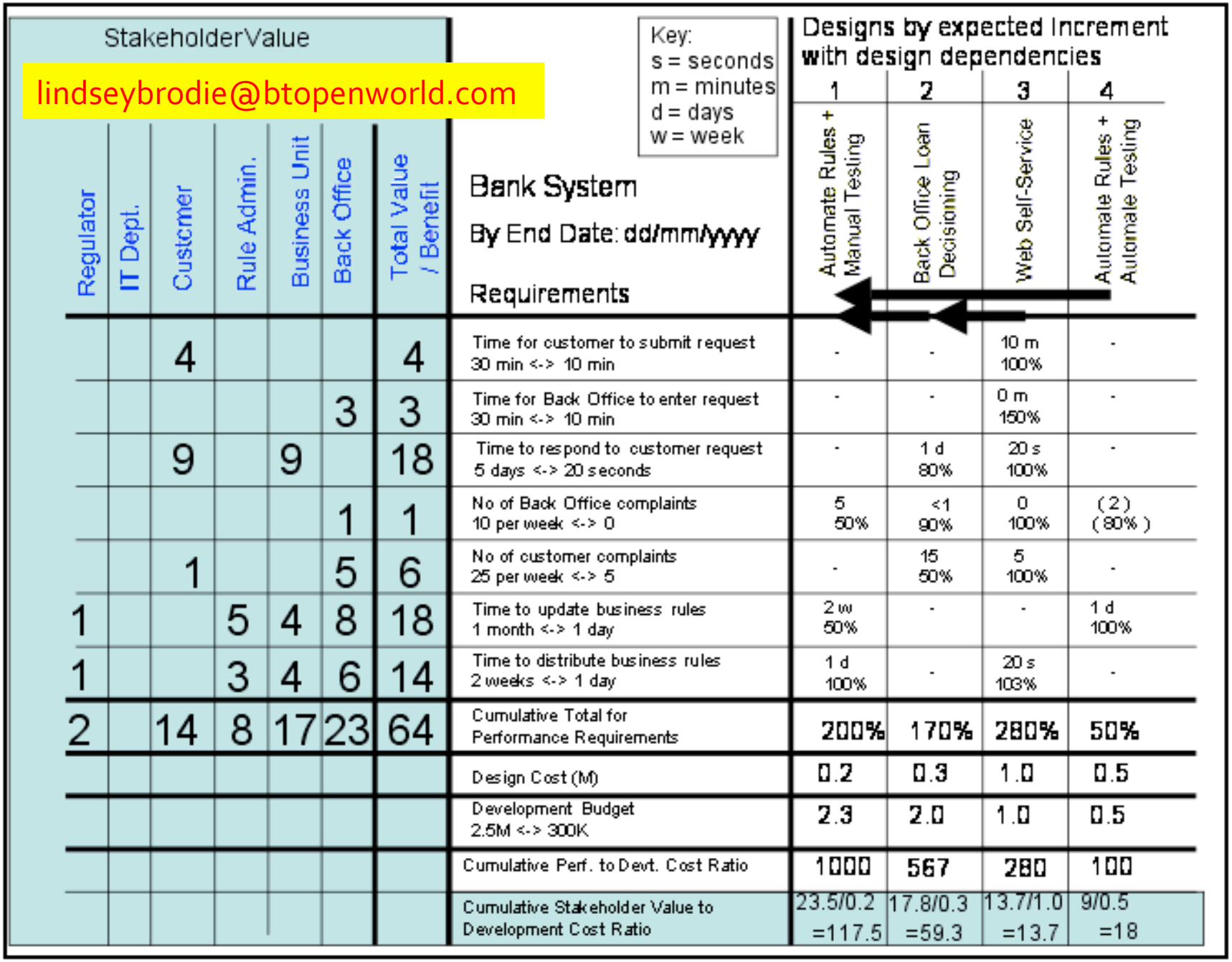
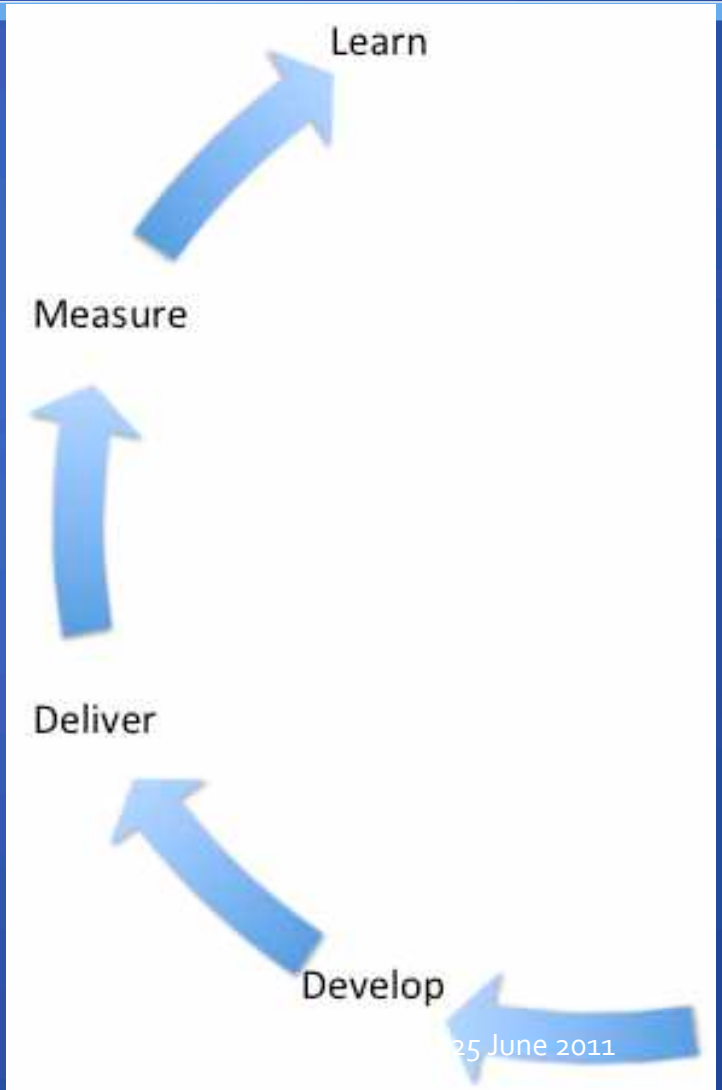



Figure 4: An IE table for the bank system. The shaded area represents the extensions to IE

# VALUE REPORTING:
# Measure project progress early, continuously, in terms of top ten objectives

- Basic idea
  - Estimate expected value next cycle
    - Based on a specific design for that increment
    - Design Hypothesis
  - Measure the actual effect, roughly, pilot,
    - Confirm or deny the effect hypothesis
  - If reasonable result compared to need and expectation, then take another cumulative cycle
  - Measure the cumulated value later, and better, before scaling up and major release
  - If bad result: learn change, try again



**Real client example (Confirmit): weekly design impact estimates, and same-week measurement, Weekly Feedback to the development team about cumulative progress toward critical numeric performance and quality targets**

| | A | B | C | D | E | F | G | BX | BY | BZ | CA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | |
| 2 | | Current Status | Improvements | | Goals | | | Step9 | | | |
| 3 | | | | | | | | Recoding | | | |
| 4 | | | | | | | | ted impact | | Actual impact | |
| 5 | | Units | Units | % | Past | Tolerable | Goal | | % | | % |
| 6 | | | | | Usability.Replacability (feature count) | | | | | | |
| 7 | | 1,00 | 1,0 | 50,0 | 2 | 1 | 0 | | | | |
| 8 | | | | | Usability.Speed.NewFeaturesImpact (%) | | | | | | |
| 9 | | 5,00 | 5,0 | 100,0 | 0 | 15 | 5 | | | | |
| 10 | | 10,00 | 10,0 | 200,0 | 0 | 15 | 5 | | | | |
| 11 | | 0,00 | 0,0 | 0,0 | 0 | 30 | 10 | | | | |
| 12 | | | | | Usability.Intuitiveness (%) | | | | | | |
| 13 | | 0,00 | 0,0 | 0,0 | 0 | 60 | 80 | | | | |
| 14 | | | | | Usability.Productivity (minutes) | | | | | | |
| 15 | | 20,00 | 45,0 | 112,5 | 65 | 35 | 25 | 20,00 | 50,00 | 38,00 | 95,00 |
| 20 | | | | | Development resources | | | | | | |
| 21 | | | 101,0 | 91,8 | 0 | | 110 | 4,00 | 3,64 | 4,00 | 3,64 |

Estimates

Weekly

Testing

Priority

Next week

Warning

metrics based

Cumulative

weekly

progress

metric

Constraint

Target

# Evo Plan Confirmit 8.5

## 4 product areas were attacked in all: 25 Qualities concurrently, one quarter of a year. Total development staff = 13

**Sum impact after 9 deivery cycles**

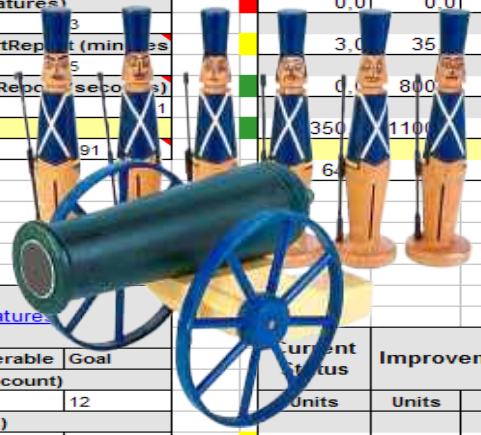
**Impact Estimation Table: Reportal codename "Hyggen"**

| Current Status | Improv | | Reportal - E-SAT features | | |
|---|---|---|---|---|---|
| Units | Units | % | ast | Tolerable | Goal |
| | | | sability.Intuitivness (%) | | |
| 75,0 | 25,0 | 62,5 | ) | 75 | 90 |
| | | | sability.Consistency.Visual (Elements) | | |
| 14,0 | 14,0 | 100,0 | | 0 | 11 | 14 |
| | | | sability.Consistency.Interaction (Components) | | |
| 15,0 | 15,0 | 107,1 | | 0 | 11 | 14 |
| | | | sability.Productivity (minutes) | | |
| 5,0 | 75,0 | 96,2 | ) | 5 | 2 |
| 5,0 | 45,0 | 95,7 | ) | 5 | 1 |
| | | | sability.Flexibility.OfflineReport.ExportFormats | | |
| 3,0 | 2,0 | 66,7 | | 3 | 4 |
| | | | sability.Robustness (errors) | | |
| 1,0 | 22,0 | 95,7 | | 1 | 0 |
| | | | sability.Replacability (nr of features) | | |
| 4,0 | 5,0 | 100,0 | | 5 | 3 |
| | | | sability.ResponseTime.ExportRep t (min es | | |
| 1,0 | 12,0 | 150,0 | ) | 13 | 5 |
| | | | sability.ResponseTime.ViewRepo seco s) | | |
| 1,0 | 14,0 | 100,0 | | 15 | 1 |
| | | | evelopment resources | | |
| 203,0 | | | | | 91 |

| Current Status | Improvements | | Survey Engine .NET | | |
|---|---|---|---|---|---|
| Units | Units | % | Past | Tolerable | Goal |
| | | | Backwards.Compatibility (%) | | |
| 83,0 | 48,0 | 80,0 | 40 | 85 | 95 |
| 0,0 | 67,0 | 100,0 | 67 | 0 | 0 |
| | | | Generate.WI.Time (small/medium/large seconds) | | |
| 4,0 | 59,0 | 100,0 | 63 | 8 | 4 |
| 10,0 | 397,0 | 100,0 | 407 | 100 | 10 |
| 94,0 | 2290,0 | 103,9 | 2384 | 500 | 180 |
| | | | Testability (%) | | |
| 10,0 | 10,0 | 13,3 | 0 | 100 | 100 |
| | | | Usability.Speed (seconds/user rating 1-10) | | |
| 774,0 | 507,0 | 51,7 | 1281 | 600 | 300 |
| 5,0 | 3,0 | 60,0 | 2 | 5 | 7 |
| | | | Runtime.ResourceUsage.Memory | | |
| 0,0 | 0,0 | 0,0 | | ? | ? |
| | | | Runtime.ResourceUsage.CPU | | |
| 3,0 | 35 | 97,2 | 38 | 3 | 2 |
| | | | Runtime.ResourceUsage.MemoryLeak | | |
| 0, | 800 | 100,0 | 800 | 0 | 0 |
| | | | Runtime.Concurrency (number of users) | | |
| 350 | 1100 | 146,7 | 150 | 500 | 1000 |
| 64 | | | Development resources | | |
| | | | 0 | | 84 |

| Current Status | Improvements | | Reportal - MR Features | | |
|---|---|---|---|---|---|
| Units | Units | % | Past | Tolerable | Goal |
| | | | Usability.Replacability (feature count) | | |
| 1,0 | 1,0 | 50,0 | 14 | 13 | 12 |
| | | | Usability.Productivity (minutes) | | |
| 20,0 | 45,0 | 112,5 | 65 | 35 | 25 |
| | | | Usability.ClientAcceptance (features count) | | |
| 4,4 | 4,4 | 36,7 | 0 | 4 | 12 |
| | | | Development resources | | |
| 101,0 | | | 0 | | 86 |

| Current Status | Improvements | | XML Web Services | | |
|---|---|---|---|---|---|
| Units | Units | % | Past | Tolerable | Goal |
| | | | TransferDefinition.Usability.Efficiency | | |
| 7,0 | 9,0 | 81,8 | 16 | 10 | 5 |
| 17,0 | 8,0 | 53,3 | 25 | 15 | 10 |
| | | | TransferDefinition.Usability.Response | | |
| 943,0 | -186,0 | ###### | 170 | 60 | 30 |
| | | | TransferDefinition.Usability.Intuitiveness | | |
| 5,0 | 10,0 | 95,2 | 15 | 7,5 | 4,5 |
| | | | Development resources | | |
| 2,0 | | | 0 | | 48 |



Trond Johansen

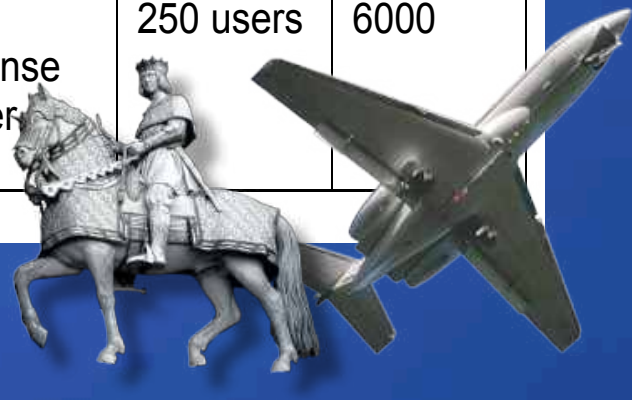
# Confirmit Evo-week cycle: Measure Progress Weekly

| | Development Team | Users (PMT, Pros, Doc writer, other) | CTO (Sys Arch, Process Mgr) | QA (Configuration Manager & Test Manager) |
|---|---|---|---|---|
| **Friday** | ✓ PM: Send Version N detail plan to CTO + prior to Project Mgmt meeting<br>✓ PM: Attend Project Mgmt meeting: 12.00-15.00<br>✓ Developers: Focus on genereal maintenance work, documentation. | | ✓ Approve/reject design & Step N<br>✓ Attend Project Mgmt meeting: 12-15 | ✓ Run final build and create setup for Version N-1.<br>✓ Install setup on test servers (external and internal)<br>✓ Perform initial crash test and then release Version N-1 |
| **Monday** | ✓ Develop test code & code for Version N | ✓ Use Version N-1 | | ✓ Follow up CI<br>✓ Review test plans, tests |
| **Tuesday** | ✓ Develop Test Code & Code for Version N<br>✓ Meet with users to Discuss Action Taken Regarding Feedback From Version N-1 | ✓ Meet with developers to give Feedback and Discuss Action Taken from previous actions | ✓ System Architect to review code and test code | ✓ Follow up CI<br>✓ Review test plans, tests |
| **Wednesday** | ✓ Develop test code & code for Version N | | | ✓ Review test plans, tests<br>✓ Follow up CI |
| **Thursday** | ✓ Complete Test Code & Code for Version N<br>✓ Complete GUI tests for Version N-2 | | | ✓ Review test plans, tests<br>✓ Follow up CI |

# Evo's impact on Confirmit product qualities

- ! Only 5 highlights of the 25 impacts are listed here

| Description of requirement/work task | Past | Status |
|---|---|---|
| Usability.Productivity: Time for the system to generate a survey | 7200 sec | 15 sec |
| Usability.Productivity: Time to set up a typical specified Market Research-report (MR) | 65 min | 20 min |
| Usability.Productivity: Time to grant a set of End-users access to a Report set and distribute report login info. | 80 min | 5 min |
| Usability.Intuitiveness: The time in minutes it takes a medium experienced programmer to define a complete and correct data transfer definition with Confirmit Web Services without any user documentation or any other aid | 15 min | 5 min |
| Performance.Runtime.Concurrency: Maximum number of simultaneous respondents executing a survey with a click rate of 20 sec and an response time<500 ms, given a defined [Survey-Complexity] and a defined [Server Configuration, Typical] | 250 users | 6000 |



confirmit

Release 8.5

# JUST-IN-TIME PLANNING: Dynamic intelligent do-next prioritisation: Value/cost based

- ! Can you buy into this planning policy?
  - ! Do, in the next value delivery cycle, that which is estimated to give most value, to all objectives, with regard to risk

# Notice the automatically computed priority colours, after each delivery and measurement cycle

**Sum impact after NINE deivery cycles**

9

8

3

3

**Impact Estimation Table: Reportal c… "Hyggen"**

| Current Status | Improvements | | Reportal - E-SAT features | | |
|---|---|---|---|---|---|
| Units | Units | % | Past | Tolerable | Goal |
| | | | Usability.Intuitivness (%) | | |
| 75,0 | 25,0 | 62,5 | 50 | 75 | 90 |
| | | | Usability.Consistency.Visual (Elements) | | |
| 14,0 | 14,0 | 100,0 | 0 | 11 | 14 |
| | | | Usability.Consistency.Interaction (Components) | | |
| 15,0 | 15,0 | 107,1 | 0 | 11 | 14 |
| | | | Usability.Productivity (minutes) | | |
| 5,0 | 75,0 | 96,2 | 80 | 5 | 2 |
| 5,0 | 45,0 | 95,7 | 50 | 5 | 1 |
| | | | Usability.Flexibility.OfflineReport.ExportFormats | | |
| 3,0 | 2,0 | 66,7 | 1 | 3 | 4 |
| | | | Usability.Robustness (errors) | | |
| 1,0 | 22,0 | 95,7 | 7 | 1 | 0 |
| | | | Usability.Replacability (nr of features) | | |
| 4,0 | 5,0 | 100,0 | 8 | 5 | 3 |
| | | | Usability.ResponseTime.ExportReport (minutes | | |
| 1,0 | 12,0 | 150,0 | 13 | 13 | 5 |
| | | | Usability.ResponseTime.ViewReport (seconds) | | |
| 1,0 | 14,0 | 100,0 | 15 | 3 | 1 |
| | | | Development resources | | |
| 203,0 | | | 0 | | 191 |

| Current Status | Improvements | | Reportal - MR Features | | |
|---|---|---|---|---|---|
| Units | Units | % | Past | Tolerable | Goal |
| | | | Usability.Replacability (feature count) | | |
| 1,0 | 1,0 | 50,0 | 14 | 13 | 12 |
| | | | Usability.Productivity (minutes) | | |
| 20,0 | 45,0 | 112,5 | 65 | 35 | 25 |
| | | | Usability.ClientAcceptance (features count) | | |
| 4,4 | 4,4 | 36,7 | 0 | 4 | 12 |
| | | | Development resources | | |
| 101,0 | | | 0 | | 86 |

| Current Status | Improvements | | Survey Engine .NET | | |
|---|---|---|---|---|---|
| Units | Units | % | Past | Tolerable | Goal |
| 83,0 | 48,0 | 80,0 | Backwards.Compatibility (%) | | |
| | | | 40 | 85 | 95 |
| 0,0 | 67,0 | 100,0 | 67 | 0 | 0 |
| | | | Generate.WI.Time (small/medium/large seconds) | | |
| 4,0 | 59,0 | 100,0 | 63 | 8 | 4 |
| 10,0 | 397,0 | 100,0 | 407 | 100 | 10 |
| 94,0 | 2290,0 | 103,9 | 2384 | 500 | 180 |
| | | | Testability (%) | | |
| 10,0 | 10,0 | 13,3 | 0 | 100 | 100 |
| | | | Usability.Speed (seconds/user rating 1-10) | | |
| 774,0 | 507,0 | 51,7 | 1281 | 600 | 300 |
| 5,0 | 3,0 | 60,0 | 2 | 5 | 7 |
| | | | Runtime.ResourceUsage.Memory | | |
| 0,0 | 0,0 | 0,0 | | ? | ? |
| | | | Runtime.ResourceUsage.CPU | | |
| 3,0 | 35,0 | 97,2 | 38 | 3 | 2 |
| | | | Runtime.ResourceUsage.MemoryLeak | | |
| 0,0 | 800,0 | 100,0 | 800 | 0 | 0 |
| | | | Runtime.Concurrency (number of users) | | |
| 350,0 | 1100,0 | 146,7 | 150 | 500 | 1000 |
| | | | Development resources | | |
| 64,0 | | | 0 | | 84 |

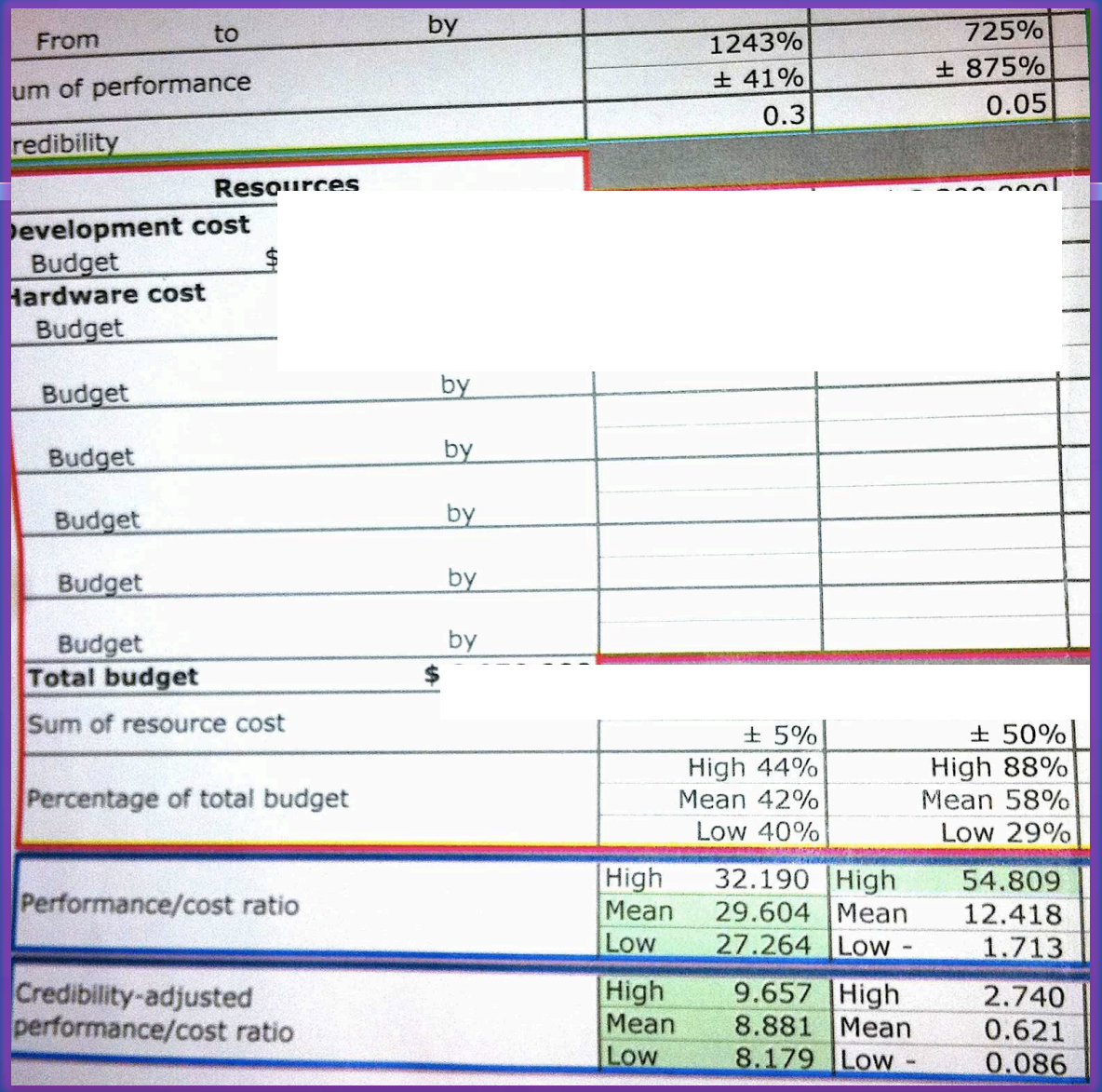
| Current Status | Improvements | | XML Web Services | | |
|---|---|---|---|---|---|
| Units | Units | % | Past | Tolerable | Goal |
| | | | TransferDefinition.Usability.Efficiency | | |
| 7,0 | 9,0 | 81,8 | 16 | 10 | 5 |
| 17,0 | 8,0 | 53,3 | 25 | 15 | 10 |
| | | | TransferDefinition.Usability.Response | | |
| 943,0 | -186,0 | ###### | 170 | 60 | 30 |
| | | | TransferDefinition.Usability.Intuitiveness | | |
| 5,0 | 10,0 | 95,2 | 15 | 7,5 | 4,5 |
| | | | Development resources | | |
| 2,0 | | | 0 | | 48 |

Trond Johansen

# Example: Impact Estimations
# B was, as you see, done with *great* uncertainty

| Requirements | | | | | Opt A | Opt B |
|---|---|---|---|---|---|---|
| TIME.TRADE | | | | | 100% | ± 60% |
| From | 10 | to | 4 | by Dec-11 | | |
| TIME.HEDGE | | | | | 100% | 75% |
| From | 30 | to | 3 | by Dec-11 | | ± 60% |
| SPEED.CODE | | | | | 100% | 65% |
| From | 60 | to | 5 | by Dec-11 | | ± 10% |
| PNL.ADJUST | | | | | 90% | 85% |
| From | 60 | to | 15 | by Dec-11 | ± 10% | ± 100% |
| CAP.TXNS | | | | | 100% | 50% |
| From | 62000 | to | 500000 | by Dec-11 | | ± 100% |
| CAP.PEAK | | | | | 100% | 25% |
| From | 6000 | to | 100000 | by Dec-11 | | ± 100% |
| CAP.BURST | | | | | 75% | 0% |
| From | 20 | to | 200 | by Dec-11 | ± 10% | ± 100% |
| CAP.POSNS | | | | | 100% | 100% |
| From | 4000 | to | 40000 | by Dec-11 | | ± 40% |
| CAP.TRADERS | | | | | 90% | 100% |
| From | 180 | to | 270 | by Dec-11 | ± 10% | ± 30% |
| AVAIL.P1 | | | | | 90% | 50% |
| From | 100 | to | 20 | by Dec-11 | ± 10% | ± 75% |
| RISK.MANAGE | | | | | 100% | 50% |
| From | 0 | to | 100 | by Dec-11 | | ± 50% |
| RISK.TIME | | | | | 100% | 0% |
| From | 99 | to | 100 | by Dec-11 | | ± 100% |
| RISK.REFRESH | | | | | 98% | 50% |
| From | 500 | to | 200 | by Dec-11 | ± 1% | ± 50% |

# The Bottom Line



| From | to | by | | |
|---|---|---|---|---|
| | | | 1243% | 725% |
| um of performance | | | ± 41% | ± 875% |
| redibility | | | 0.3 | 0.05 |
| **Resources** | | | | |
| **evelopment cost** | | | | |
| Budget | $ | | | |
| **Hardware cost** | | | | |
| Budget | | | | |
| Budget | | by | | |
| Budget | | by | | |
| Budget | | by | | |
| Budget | | by | | |
| Budget | | by | | |
| **Total budget** | $ | | | |
| Sum of resource cost | | | ± 5% | ± 50% |
| Percentage of total budget | | | High 44%<br>Mean 42%<br>Low 40% | High 88%<br>Mean 58%<br>Low 29% |
| Performance/cost ratio | | | High 32.190<br>Mean 29.604<br>Low 27.264 | High 54.809<br>Mean 12.418<br>Low - 1.713 |
| Credibility-adjusted performance/cost ratio | | | High 9.657<br>Mean 8.881<br>Low 8.179 | High 2.740<br>Mean 0.621<br>Low - 0.086 |

# Tracking 3 delivery-steps, for 2 Objectives

(teaching example, not real)

| Delivery steps | 1 | 2 | 3 |
|---|---|---|---|
| | 25-Nov-10 | 23-Dec-10 | 20-Jan-11 |
| **Objectives** | | | |
| **Actuals** | 50 | 100 | 350 |
| 0 -> 10000 Things [Dec-11] | 0.5% | 1.0% | 3.5% |
| **Delivery step targets** | 25 | 50 | 150 |
| Actual step performance | 200.0% | 200.0% | 233.3% |
| Cumulative target business value | $ 3 | $ 5 | $ 15 |
| Cumulative actual business value | $ 5 | $ 10 | $ 35 |
| **Actuals** | 5 | 10 | 35 |
| 0 -> 1000 Other things [Dec-11] | 0.5% | 1.0% | 3.5% |
| **Delivery step targets** | 3 | 5 | 15 |
| Actual step performance | 200.0% | 200.0% | 233.3% |
| Cumulative target business value | $ 3 | $ 5 | $ 15 |
| Cumulative actual business value | $ 5 | $ 10 | $ 35 |

**It is fascinating how focused and creative the dialogue becomes between domain experts when they are guided by quantified goal sets, the need to estimate , give evidence, state uncertainty and assign credibility. All culminating in decision documentation which is auditable reviewable. Improvable and transparent! <- TG 12-20xx**

# Make friends by delivering results.

- ! Get out of the Nerd Mode of delivering functions/stories to a user
- ! Get into the mode of delivering real measurable results, the highest value, to stakeholders

# Shock your boss!

- ! **Insist on being stakeholder-value oriented, rather than IT oriented**

# The end

- ! What is wrong with requirements