Primary Project-Control Dashboard

Quantified Top-Level Critical Value-Objectives, A 'Lean' method to control Agile Financial Projects

By
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(copy of slides are here)

Unicom London, Thursday, 22 September 2011
Lean & Agile in Finance Sector

I disagree with Conventional 'Agile Manifesto' ! (ref. other lecturers here)
I rewrote it to my taste (Multi-Value driven, not function and code!)
These slides, and these papers, at Gilb.com/Downloads

2. **Agile Principles Revised -for stakeholder value focus**

http://www.gilb.com/tiki-download_file.php?fileId=431
Agile Principles in AgileRecord.com, no. 3, 2010

3. **Agile Values Revised - for stakeholder value focus**

http://www.gilb.com/tiki-download_file.php?fileId=448
Agile Values in AgileRecord.com, no. 4, 2010

7. **User Stories (why they are inadequate)**

http://www.gilb.com/tiki-download_file.php?fileId=461
User Stories paper by Tom and Kai Gilb
In Gilbs' Mythodology Column, Agilerecord.com March 2011. This appeared in RQNQ Newsletter 26 April 2011

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4. **What is Wrong with Requirements Methods?**

http://www.gilb.com/tiki-download_file.php?fileId=443

Journal Paper

http://www.gilb.com/tiki-download_file.php?fileId=475 (slides June 27 2011 London SPIN)

5.**Engineering Productivity**: some ways to measure and manage it.

http://www.gilb.com/tiki-download_file.php?fileId=144

Engineering Productivity Paper Engineering Productivity Paper Published www.coremag.eu Oct 2010

6. Our new paper **Agile Planguage** Just out, Jan 6 2011, in Agilerecord.com

http://www.gilb.com/tiki-download_file.php?fileId=39

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Primary Project-Control Dashboard: Quantified Top-Level Critical Value-Objectives

Overview of Topics

- **Why IT Projects Fail**: Poor Management of Primary Objectives
  - Unnecessarily vague objectives
  - Objectives that are really a 'means', not the critical 'ends'
  - Objectives that are not quantified, and not trackable during development

- **Ideal Management**:
  - How should we handle the top-level critical objectives?
  - How should we formulate the top-level objectives? Best practice standards
  - How should we review the top-level objectives? Measuring garbage In
  - How should we manage projects with respect to the objectives?
    - Hierarchies of objectives (for example, Business, Stakeholder and Technical)
    - Using the Impact Estimation method for value-for-money prioritisation.
    - A business-driven front-end to 'development' (for example, Scrum)
  - Ten principles for much smarter project management
  - The one summary principle: Get Value for Money – Quantitatively!

Why IT Projects Fail 1

Poor **Management** of *Primary* Objectives:

- *Unnecessarily* **Vague** Objectives
- Objectives that are really a '**means**', not the critical '**ends**'
- Objectives that are *not quantified*, and **not trackable** during development
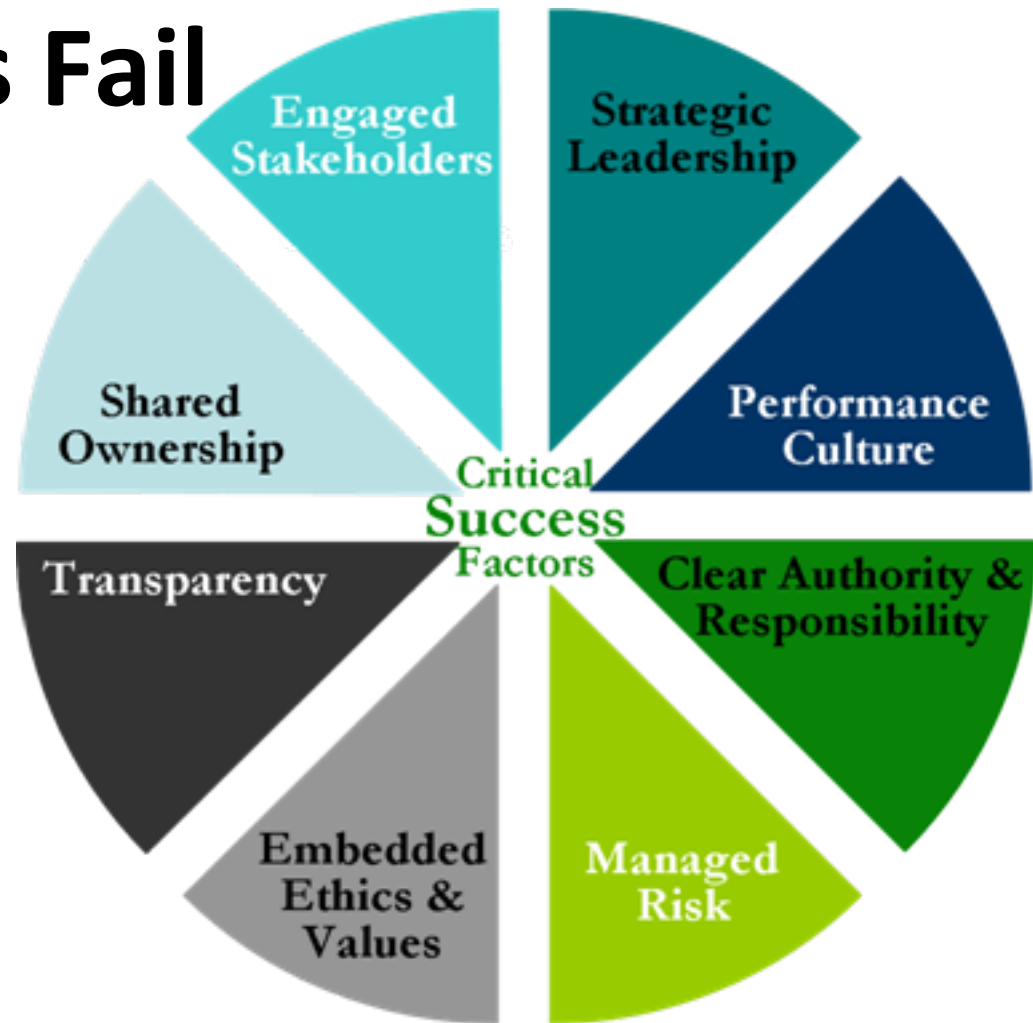
Why IT Projects Fail 2

The Problem:

Poor *Management* of Primary Objectives

- *Management* does not **make sure** that *real critical and primary* objectives

- are the ones the **project** is *primarily* responsible for

Engaged Stakeholders

Strategic Leadership

Shared Ownership

Performance Culture

Critical Success Factors

Transparency

Clear Authority & Responsibility

Embedded Ethics & Values

Managed Risk

© 2005 Ruth Armstrong & Linda Mollenhauer

Story: Mark
"This is such good common sense.
Why aren't we doing it Tom? 2011 London

Why IT Projects Fail. 3
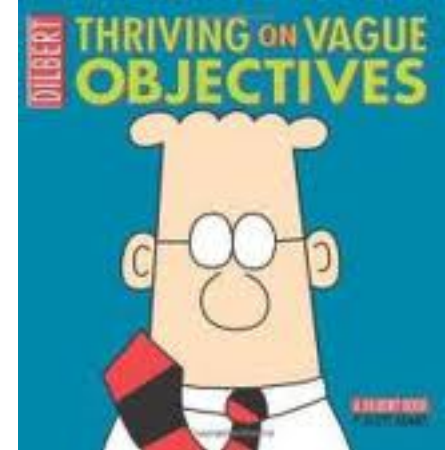
The Problem: **Unnecessarily Vague Objectives**

- Not **Quality Controlled** to a defined standard, like ….
  - Not unambiguously clear to intended readership
  - Not *testable* and not *trackable*
  - Not *quantified*
  - Not enough supporting *detail*
    - Specifying exactly what they apply to: tasks, people, environment, assumptions
  - And much more

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Initial CIO Objectives
($100m Bank IT Project, London, 200x)
Nothing delivered after 1 year deadline
We interviewed 50 employees to find out why

Benefits:

Reduce the costs associated with managing redundant / regionally disparate systems.

Single global portfolio management system.

Reduce overall spending with a reduction in redundant initiatives.

Governance structures - system agnostic.

All projects in IT Portfolio system.

Reduce IT spend on low priority work with better alignment between IT and business demand.

IT Portfolio Framework, Business Value metrics for prioritization.

Reduction in cost over runs.

Definition criteria for project success.

Metrics and exception reporting for cost management.

Linkage of actual costs to forecast.

Increase revenue with a faster time to market.

Knowledge management, project ramp up templates.

Provide quantitative & qualitative benefits. State the consequences of project cancellation.

These need quantification, and then a plan for delivery and delivery measurement focus – on results not the process.

Real Examples of 'Value' Requirements (2004)
37-Page Detailed "Functional" (!) Requirement

Projected benefits of this include
- **reduced** time lost in planning
- **quicker** identification of actual and potential operational problems
- **reduced** time in vehicle tracking for customers and internal purposes
- **better** matching of operational costs and effort to sales contracts
- **better** information for future contract negotiations & renegotiation

----

The perceived benefits of better planning and management of high & heavy cargo are:
- **reduced** manual effort in planning movements
- **better** performance to target delivery dates for high & heavy
- **better** terminal planning for the cargo
- **better** terminal operation from better information about handling
- **better** customer management from **better** information on progress

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----

Consolidated, consistent and timely planning information will:
- **reduce** the incidence of wrong booking and loading of cargo
- **reduce** double handling and recording of information
- give **visibility** of planning data along the full distribution chain
- allow marketing to give **more accurate** information to customers
- **increase** utilization of COMPANY's own transport
- **reduce** the amount of emergency third party charter

(From Previous Slide) What is *wrong* with this picture?

Some more detail in the same 'functional' requirements: (*Is this a design?*)

It must be possible to select any cargo, including High & Heavy and MAFI, based on any of:

- VIN (either complete or a subset, typically the last 5, 6, 8 or 10 characters)
- tracking number
- serial number
- multiple VINs (eg cut & paste input),
- movement,
- customer's batch number,
- transport ID (rail wagon no or MAFI, lorry, vessel),
- customer code
- customer's sales order number
- customer's manufacturing order no (also called Commission or ED no)
- at location on date (by destination)
- dealer code
- model type & make

- **No *identification* of the main benefits (just bullet points)**
- **No definition of the *quantification* (no 'Scale' specification)**
- **No *benchmark* to help define 'better'**
- **No *target* to define 'better'**
- **No dates to define *when* 'better'**
- **No *evidence* that the 'designs' in the requirements will give any of the cited results**
- **No specification of the *long term value or costs* of the suggested designs (in the requirements)**
- **And many more problems:**
  - **No Sources**
  - **No Authority**
  - **No Risks**
  - **No Priorities**

Quantify for Realistic Judgments

"To leave [soft considerations] out of the analysis

   *–simply because they are **not readily quantifiable***

   –or to avoid introducing "personal judgments,"

   – clearly biases decisions against investments

   • *that are likely to have a significant impact on considerations*

   •*as **the quality of one's product**, delivery speed and reliability, and the rapidity with which new products can be introduced"*

R. H. Hayes et al

   "Dynamic Manufacturing", p77

   quoted in MINTZBERG94, p124

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Problem: Objectives that are really a 'means', not the critical 'ends'

The Problems:

– Unclear or unidentified objectives

  • Make **it logically impossible to decide on the means** (architecture, strategies)

– But if *top management* includes the '**means**' in their objectives

  • *The project team might be sheepish enough to deliver the means* (and not the real and critical ends)

Consequences:

– **You might get what you ask fo**r (means)

– But not what is really needed (ends)

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The 'Official' Forgotten CIO Objectives:
## ($60 Million was spent for this in 1 Year)
Notice: <Ends> through/by means of < Means>

- Achieve "One Bank" vision through globally integrated IT Portfolio Management, by implementation single toolset supporting existing (and consistent) processes across [   ] IT.

- Perform accurate measurement and tracking of project and non-project related IT expenses.

- Track and allocate human resources based on skills, level of work commitment and timing.

- Enable Business alignment through the ability to manage critical initiatives on a portfolio basis and support faster time to market, providing the potential for increase in revenues.

- Enable the business and SMT to make sound management decisions around the portfolio and op IT spend so as to effectively prioritize IT spend and maximize business value.

- Replace resource intensive and disparate Portfolio Management tools with industry "best in breed capabilities.

- Improvement in the time it takes IT to respond to business changes.

- Reduction in costs through eliminating redundant projects.

- Better planning and tracking capabilities so as to reduce project cost and time overruns.

Detailed Example (From Previous Slide)

Link words (*through, by, supporting*)

connect the **ends** and **means**

THE ENDS JUSTIFIES THE MEANS

NICCOLÒ MACHIAVELLI (1469 – 1527)
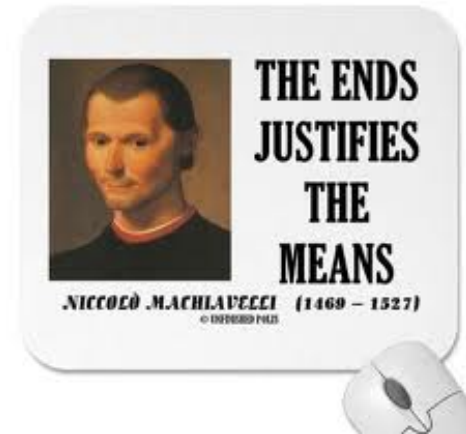
- "Achieve One Bank
  - *through* globally integrated portfolio management
  - *by* implementation of a single toolset
  - *supporting* existing and consistent processes across IT"

The Problem?
'Ends-by-Means' Statements

- We have prematurely decided the architecture solutions for badly defined objectives

- We have, as an analogy, decided to use a **Jet Plane** (a solution)
  - Even if our travel is
  - **"To A Nice Place"** from the City (Objective)
    - (Maybe Singapore)
    - (Maybe Hampstead)
    - (Maybe somewhere else, sometime)
  - Might be nice to have the objective clarified before we got on the plane?

Managers as 'Architects'

- Have no valid business playing 'architect'
  - By prematurely deciding major architecture ideas

- When the objectives *(like security levels)* and constraints *(like resources, legal conditions)* for the architecture problem
  - are **not even *decided*** (and are unclear)

- Architecture is difficult enough without being done by 'amateurs'
  - *Amateur*: a manager who does not even realise that he does not have enough information to reasonably solve a problem
  - *Amateur*: project leaders and developers who let managers dictate technical strategies without a proper basis for such decisions

The Problem: Objectives that are *not quantified* and no*t trackable -* during development

Assertions:

– **All** critical improvement objectives can be specified **quantitatively**

– All quantitatively specified objectives

- can be **tracked**
- and **measured** gradually,
- as they are *incrementally* **delivered**.
- No exceptions
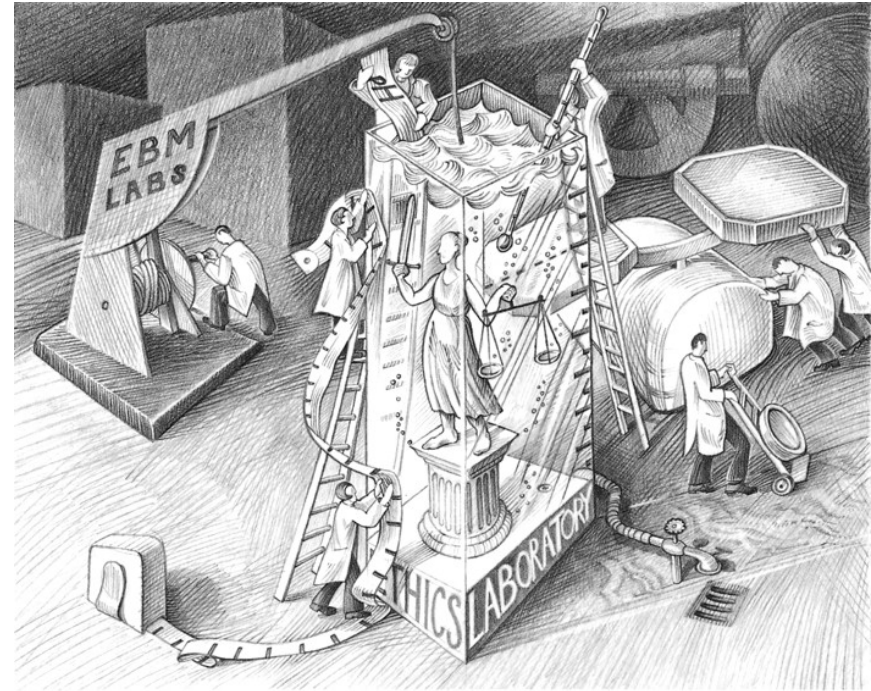
Lack of clear top level project objectives has seen real projects fail for $100+ million: personal experience, real case

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**.

Christopher Alexander
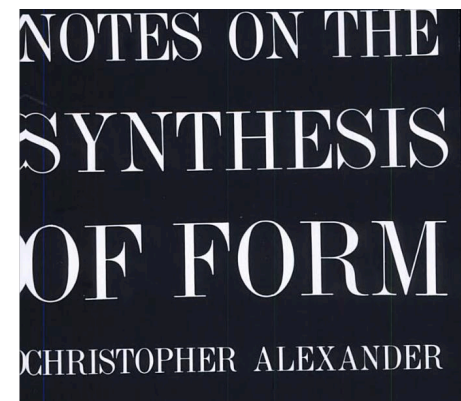
Quality Architecture

In his work on specifying the requirements for buildings, Christopher Alexander describes setting up a quality measure for each requirement"

Notes On The Synthesis Of Form

He says:

- *"The idea is for each requirement to have a quality measure*
  - that makes it possible to divide <u>all solutions</u> to the requirement into two classes:
- those for which we agree that they <u>fit</u> the requirement and
- those for which we agree that they do <u>not fit</u> the requirement."

Enthoven on Numbers

- "Numbers are a part of our **language**.
- Where a quantitative matter is being discussed,
  - the greatest **clarity of thought** is achieved by using numbers
  - instead of avoiding them,
  - *even when uncertainties are present.*
- *This is not to rule out judgment and insight.*
  - *Rather, it is to say, that*
  - *judgments and insights need,*
  - *like everything else,*
  - *to be **expressed with clarity***
  - *if they are to be **useful**."*

Alain Enthoven, June 1963, Naval War College,
Newport Rhode Island (Rescuing Prometheus, Hughes, 1998, p164)

The Principle of 'Quality Quantification'

All qualities can be expressed quantitatively, *'qualitative'* does *not* mean unmeasurable

"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."

Lord Kelvin, 1893

From http://zapatopi.net/kelvin/quotes.html
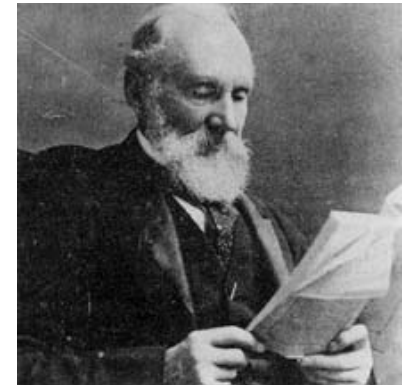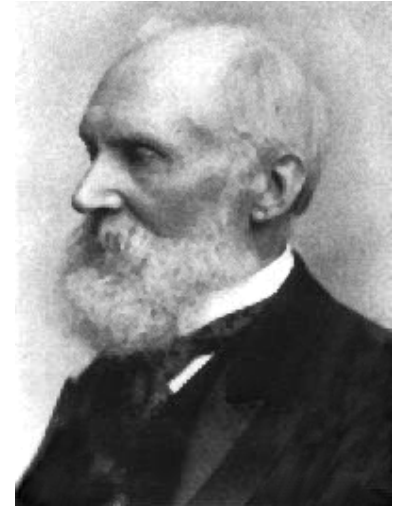
Ideal Management:
How Should the <u>Top-Level Critical Objectives</u> be Handled?

- Guard them with your life

- Stake your career on them

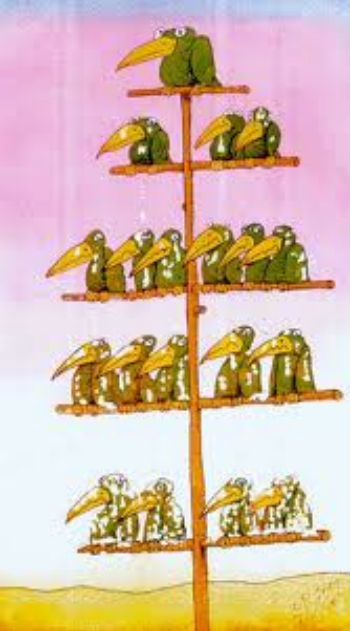Desirable attributes of a Project Manager

Experience and knowledge of educational organisations and systems

Conductor · Administrator · Manager · Negotiator · Conciliator · Politician · Communicator · Leader · Change Agent · Technician · Business Professional · Planner · Organiser · Coordinator

Project Management Methods and Tools
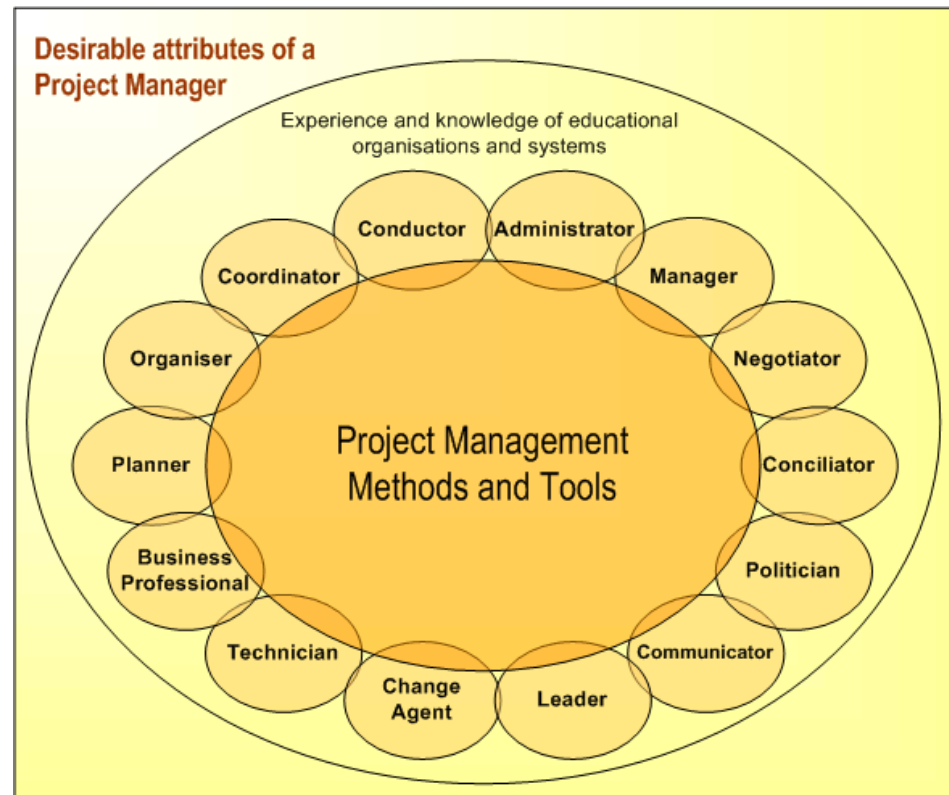
How Should We Formulate the Top-Level Objectives? Best Practice Standards

- Quantify them for clarify and adjustability
- Enrich them with background information
  - Sources
  - Impacts
  - Risks
  - Owner (of spec)
  - Constraints (Fail level)
  - Benchmarks
  - Comments
  - Parameters and Conditions for various levels required
    - Where, who, when, if

Ambition: *Maximize delivery speed, and satisfaction level, of currently prioritized business improvements, for 'key business goals'*

--------------- Measurement ------------------

Scale: % of Planned Value actually Delivered to the Business by defined [Time].

Past [Corp., Time = Deadline, 2007]: X% (guess X < 30%??) <- tg

Goal CS, Time = Deadline, 2009: < 50%, maybe much more?

Meter: <The Tool?>

Issue: can The Tool be exploited to track Value?

Business Result Alignment: BRA:

-------------- Relationships -------------

Type: IT COO Level Project Objective

Supports:

1. Portfolio Management Strategic Initiative {Management Framework, Change Drivers, Driving Issues, Results}. Not Quantified.

2. Business problem statement (PID 2.00. 9 areas. Not Quantified.

3. High Level Business Requirements: OMSC3 (Align Business Needs), OMSC6 (Resource Allocation), OMSC7 (Change Alignment). All quantified!

Supported By: <The Tool>, Planguage, Evo

--------- Objective Admin -------------

Version: 23 Sept 2007

Sponsor: CIO

Owner: , IT COO

Status: draft tg for COO? -> TS

Scope: : the 1/3 of IT spend for New Demand <- COO

---------- Definitions -------------------------

Planned Value:

The monetary benefit estimated for a given scope and duration, that we have formally estimated the organization would get as a result of meeting defined project requirements, at defined levels.

 For example if a project had a requirement to save 1 hour per employee of learning to use a new IT application, and that hour was measurably saved, then the <u>value</u> would be the cost of employee time and overheads saved for a defined period, for a set of employees that needed to learn to use the system. For example for 1,000 employees learning the system in one year, the value would be the cost saving of their 1,000 hours save that year.

Delivered:

'Delivered' means actually put into place; so that there are no restraints on obtaining the benefits (savings, productivity, and consequent value) that was formally planned in the project.

Business:

'Business' means a real defined set of stakeholders, that we need to give the improved systems to in order to derive benefits and consequent value, when they access or apply the improved system. These stakeholders can be any set of employees, contractors, or customers.

Planguage:

a Corp.Tailored planning language, for projects, that demands formal planning of Planned Value for all critical project performance (Improvement) requirements. *Planguage has been used in Corp. and is judged to a be a necessary supplement to Corp.requirements to deal with non-use case requirements.*

Evo:

a project management discipline that focuses on delivering measurable critical requirements and consequent value, to stakeholders, in practice, early and continuously. Evo is about value maximization for the business. The frequent measured

Some Real Objectives
from a Financial Organisation
($100 million project)

- The Ambition Level: What the European IT Director said

- The quantification we worked out together

Business Result Alignment: BRA:

Simplified extract! See detail before and after in slides

Ambition: Maximize delivery speed, and satisfaction level, of the Change the Bank Book of Work to achieve key business goals.

Scale: % of Planned Value actually Delivered to the Business by defined [Time].

Past [Corp., Time = Deadline, 2007]: X% (guess X < 30%??) <- tg.

Goal [Corp., Time = Deadline, 2009]: < 50%, maybe much more?

Issue: Can the tool be exploited to track value?

Avoid Duplication:

Ambition: Eliminate corporate efforts that duplicate other corporate efforts.

Scale: % of project investment that is duplicated.

Past [2007]: > 30%?? Wild guess.

Goal [2010]: < 5%   Hope.

Exploiting Existing Tools:

Ambition: Make use of existing tools, avoid reinventing the wheel.

Scale: % by Total Investment Value that Arguably could be avoided by Profitably making use of Existing Tools.

Past: 30% ±30% ?? Wild initial guess to start discussion <- tg.

Goal [2012?, Corp. Wide]: ~ 100%.

Results MIS:

Ambition: Deliver high-significance real-time metrics, on critical aspects, of project results and resources.

Scale: % of defined [Key Project Data] available to management in real time.

Key Project Data: default: {% of Goal Delivered to date, Stakeholder Satisfaction level, Value for Money}.

Past [Corp., 2007]: 0%.

Goal [Corp., 2010]: > 90%.

Bank Case of 'Evo'
(Gilb's Lean Agile method) NO REQUIREMENTS CHURN!

- **"The proof is in the pudding;**
- **I have used Evo (albeit in disguise sometimes) on two large, high-risk projects in front-office investment banking businesses, and several smaller tasks.**
- **On the largest critical project,**
  - **the original business functions & performance objective requirements document,**
  - **which *included no design*,**
  - **essentially remained unchanged over the 14 months the project took to deliver,**
- **but the detailed designs**
  - **(of the GUI, business logic, performance characteristics)**
  - **changed many many times,**
  - **guided by lessons learnt and feedback gained by delivering a succession of early deliveries to real users.**
- **In the end,**
  - **the new system responsible for 10s of USD billions of notional risk,**
  - **successfully went live over one weekend**
  - **for 800 users worldwide,**
  - **and was seen as a big success by the sponsoring stakeholders."**

- **Richard Smith, London,**
- **in his review of the Competitive Engineering book**
- **http://rsbatechnology.co.uk/blog:8**
- **Sept 10 2011**

2010 City Finance House
Extract of 'Top IT project Objectives'
Quantified on a single page (next slide)

- One week project start up
  - Monday: **Quantified top objectives (Bosses Main thing)**
  - Tuesday: **top set of strategies and architecture**
  - Wednesday: **Ends Means analysis: Impact Estimation Table**
  - Thursday**: identify next weeks value delivery step**
  - Friday: **Get the boss to say yes to next week**

VALUE CLARITY:
Quantify the most-critical project objectives on day 1 (non confidential view)

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%**

Risk.Low-latency Scale: number of times per day the intraday risk metrics is delayed by more than 0.5 sec. **Past** [April 20xx, NA] **1% Past** [April 20xx, EMEA] ??**% Past** [April 20xx, AP] 100**% Goal** [Dec. 20xy] **0%**
Risk.Accuracy

Risk. user-configurable Scale: ??? pretty binary – feature is there or not – how do we represent?
Past [April 20xx] **1% Goal** [Dec. 20xy] **0%**

Operational Cost Efficiency Scale: <Increased efficiency (Straight through processing STP Rates)>

Cost-Per-Trade Scale: % reduction in Cost-Per-Trade
Goal (EOY 20xy, cost type = I 1 – REGION = ALL) **Reduce cost by 60% (BW)**
Goal (EOY 20xy, cost type = I 2 – REGION = ALL) **Reduce cost by x %**
Goal (EOY 20xy, cost type = E1 – REGION = ALL) **Reduce cost by x %**
Goal (EOY 20xy, cost type = E 2 – REGION = ALL) **Reduce cost by 100%**
Goal (EOY 20xy, cost type = E 3 – REGION = ALL) **Reduce cost by x %**

How Should We *Review* Top-Level Objectives? Measuring Garbage In

- Top-Level Project Objectives usually, my experience, have a Major defect density of over **100 Majors/Page**
  - **Unintelligible words!**
- They need to be reviewed against a set of rules for good practice
- High levels of violation of the rules are unacceptable (50 to 250 majors/page)
  - 'No exit' to next process (if > 1 major/page)
    - Will drive us to practice much better
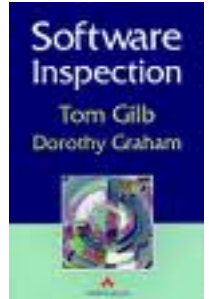
Bank IT Requirements Defect Rates
2003 Pilot (1ˢᵗ use Agile Spec QC), Citigroup
SQC/Extreme Inspection + Planguage Requirements (CE book!)

Across 18 Development Projects using the new requirements method, the average major defect rate on first inspection is 11.2 (majors/page).

4 of the 18 projects were re-inspected after failing to meet the Exit Criteria of 10 major defects per page.

A sample of 6 projects with requirements in the 'old' format were tested against the rules set of:
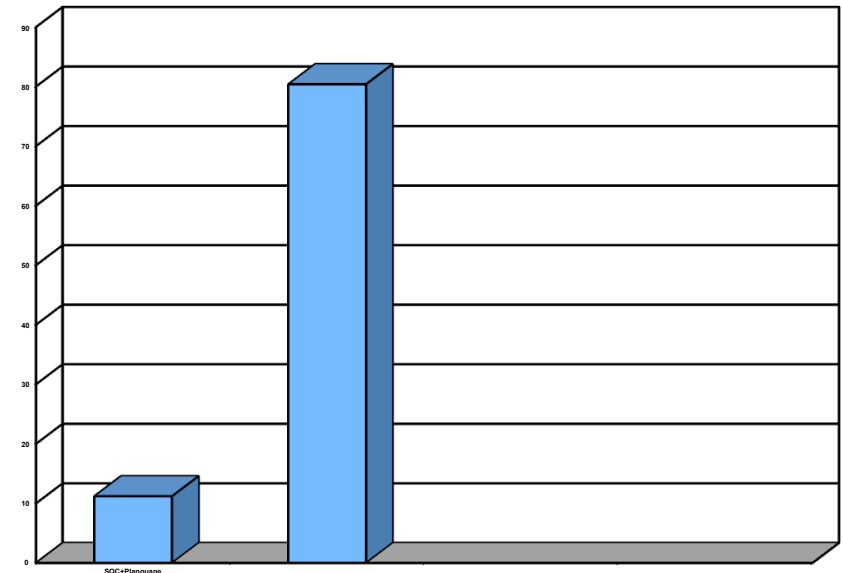- *The requirement is uniquely identifiable*
- *All stakeholders are identified.*
- *The content of the requirement is 'clear and unambiguous'*
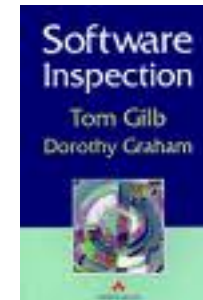- *A practical test can be applied to validate it's delivery.*

<u>The average major defect rate in this (old) sample was 80.4.</u>

11.2   80.4 (before)

Major defects/page on the first SQC

The quality measure of top level IT Objectives (Real UK case 2009)

- WHY are we doing this?
- Part of Platform Rationalisation Initiative, with below
- **Main Objectives.**
-

- **• Rationalize into a smaller number of core processing platforms.**
  - **This cuts technology spend on duplicate platforms, and creates the opportunity for operational saves.**
  - **Expected 60%-80% reduction in processing cost to Fixed Income Business levies.**

- **International Securities on one platform, Fixed Income and Equities (Institutional and PB).**
- **Global Processing consistency with single Operations In-Tray and associated workflow.**
- **• Consistent financial processing on one Accounting engine, feeding a single sub-ledger across products.**
- **• First step towards evolution of "Big Ideas" for Securities.**
- **• *Improved development environment*, leading to increased capacity to enhance functionality in future.**
- **• Removes duplicative spend on two back office platforms in support of mandatory message changes, etc.**

Quality Control Rules
for Top-Level Objectives

- **CLEAR: Every word and phrase should be clear enough to allow objective test of a delivery.** (we need to know exactly what is required and expected)

- **UNAMBIGUOUS: Every word and phrase should be unambiguous to all potential intended readers.** (no different than intended interpretations should be possible)

- **QUANTIFIED QUALITY**: all qualities (good things we want to improve) shall be expressed quantitatively.

- After we started the exercise I regretted not adding the usual rule:

- **NO DESIGN: objectives shall not be expressed in terms of a design or architecture** (a 'means' to reach the 'real' objective), when it is possible and is our real intent, to express the improvements in terms of quality, performance, and cost that are expected, instead.

Potential consequence of major defects in architecture specs

Agile SQC Results:
with above goals, and Rules

Reported Major Defects were = **15, 17, 21**

- Estimated Total Defects **found by a small tea**m (2-4 people)

$$= 2 \times 21 = \mathbf{42} \pm 7$$

(2x highest found)

- Estimated Total Majors in the 110 words

$$= \mathbf{126} \quad \pm 10$$

(3x group total. 30% effectiveness of team)

- Estimated **Total Defects** in normalized **page** (300 words)
$$= \text{approx. } \mathbf{300} \pm 50$$

Rewrite: 'Improved Development Environment '

Development Capacity:

Source: Cxx Sxxx Business Case Main Objectives

Version: 3 Sept 2009 16:26

Type: Main <Complex/Elementary> Objective for a project.

Ambition Level: radically increase the capacity for developers to do defined tasks. <- Tsg

Scale: the Calendar Time for defined [Developers] to Successfully carry out defined [Tasks].

Owner: Tim Fxxx

Calendar Time: defined as: full working days within the start to delivery time frame.

Past [2009, {Bxxxx, London, Gxxxx}, If QA Approved Processes used, Developer = Architect, **Task = Draft Architecture]** **15 days** ±4 ?? <- Rob

Goal [2011, {Bxxxxx, London, Gxxxx}, If QA Approved Processes used, Developer = Architect, Task = Draft Architecture] **1.5 days** ± 0.4 ?? <- Rob

Justification: Really good architects are very scarce so we need to optimize their use.

Risks: we use effort that should be directed to really high volume or even more critical areas (like Main Objective).

Mitigation: ....priority.

Stretch ?

Wish ?

========== Definitions =============

Developers: Set of: {Teams, Test Teams, QC Teams, Programmers, Project Managers, Architects, Programme Managers ,..... }

Successfully: defined as passed all required QC gates such as Inspection Exit level of a Spec.

Tasks: Set of: {Main Objectives, Business Case.... Test Planning }

Policy on Quantification, Clarification and Testability of Critical Objectives

"**All** critical factors or objectives
(quality, benefit, resource)
for any activity
(planning, engineering, management)
 shall be expressed clearly, measurably,
testably and unambiguously
at all stages of consideration, presentation,
 evaluation, construction and validation."

How Should We Manage Projects with Respect to the Objectives?

All development, architecture, testing, estimation, reporting:

- *Should be* **focussed on the quantified objectives**

- **Not** on

  - burn rates, stories, use cases, functions, features

Hierarchies of Objectives (Business, Stakeholder and Technical)

You need to carefully define, 3 levels of project objectives:

- – The **Business** Level

    For Example, Save money

- – The **Stakeholder** level

    For Example, Save time processing X type transactions

- – The **IT Product** Performance/Quality Level

    For Example, High *Usability* for the X type transaction processing interface

	Stakeholder Value 1	Stakeholder Value 2
Business Value 1	-10%	40%
Business Value 2	50%	10%
Resources	20%	10%

	Product Value 1	Product Value 2
Stakeholder Value 1	-10%	50 %
Stakeholder Value 2	10 %	10%
Resources	2 %	5 %

	Solution 1	Solution 2
Product Value 1	-10%	40%
Product Value 2	50%	80 %
Resources	1 %	2 %

Prioritized List
1. Solution 2
2. Solution 9
3. Solution 7

Scrum Develop
We measure improve
Learn and Repeat

Adding a Front End to Scrum
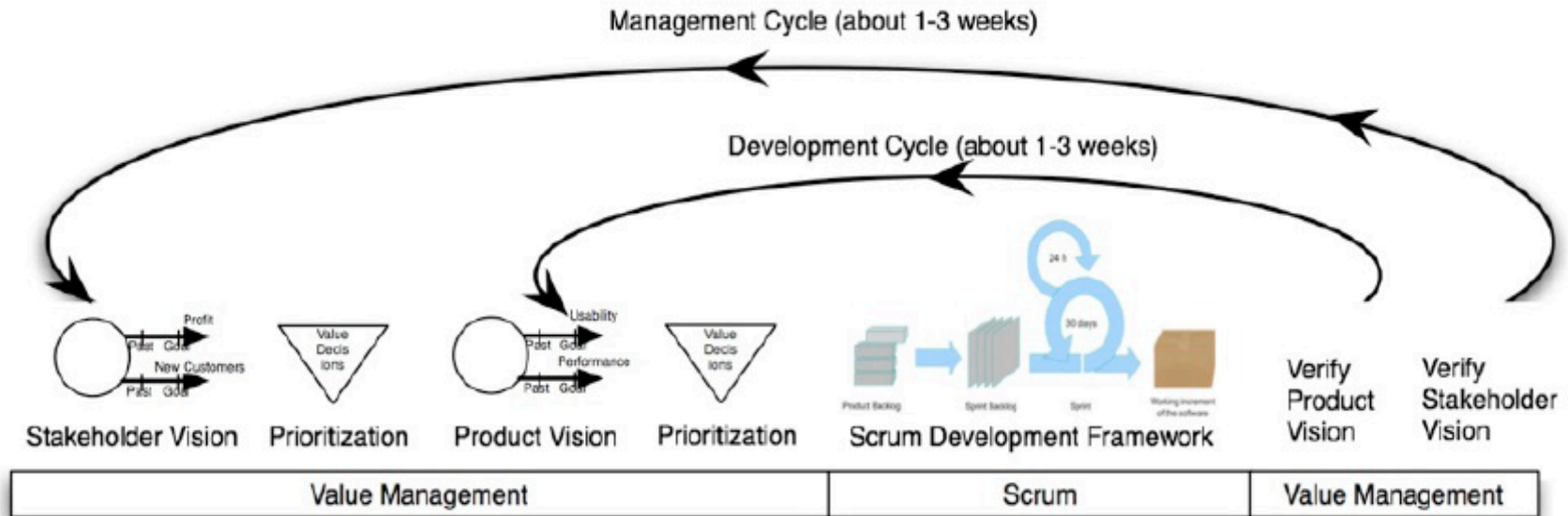
Jeff Sutherland: 'Very cool product backlog management' by Tom and Kai Gilb http://ad.vu/2h4d Sat 28 March 2009

"Kai has some excellent case studies where he has acted as Product Owner. He has done some of the most innovative things I have seen in the Scrum community." Jeff Sutherland, co-inventor of Scrum, 5 Feb 2010 in Scrum Alliance Email.

Kai Gilb's Value Delivery Cycle

http://gilb.com/Site+Content
+Overview
Animated version
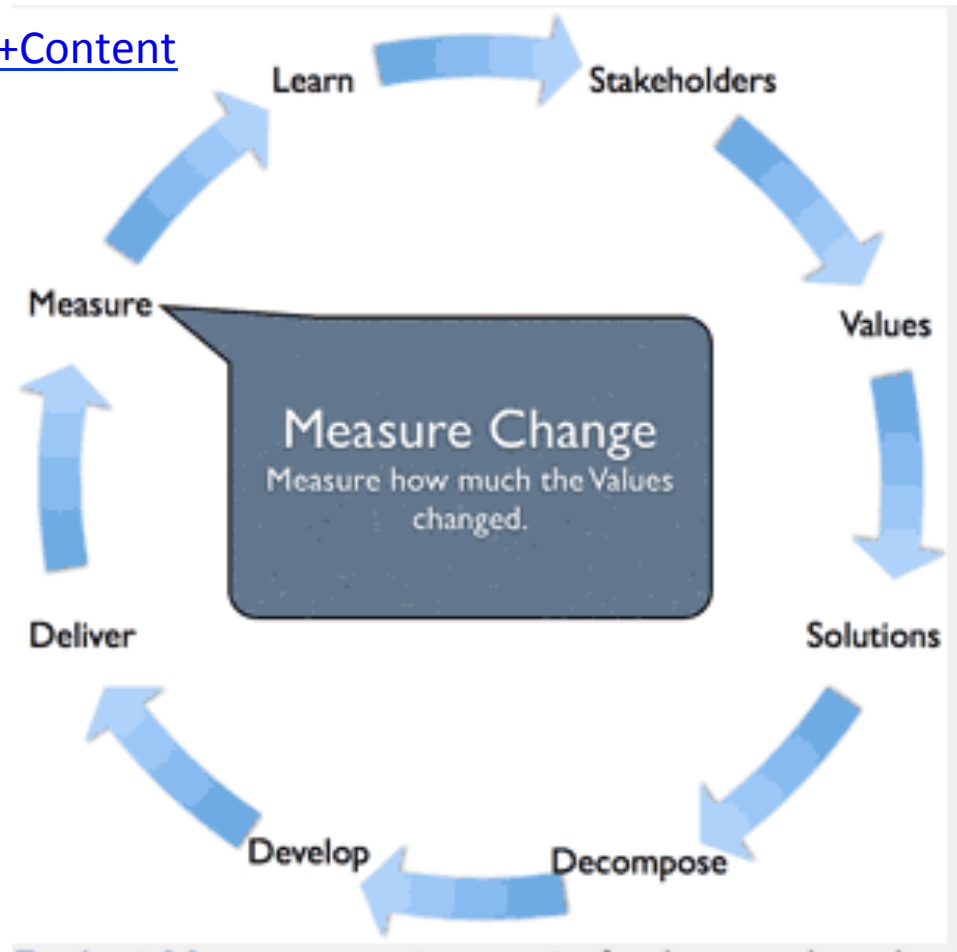
Three Levels of Management before telling a Scrum Team what to Program (Kai Gilb)

	Stakeholder Value 1	Stakeholder Value 2
Business Value 1	-10%	40%
Business Value 2	50%	10%
Resources	20%	10%

Business Level

	Product Value 1	Product Value 2
Stakeholder Value 1	-10%	50 %
Stakeholder Value 2	10 %	10%
Resources	2 %	5 %

Stakeholder level

	Solution 1	Solution 2
Product Value 1	-10%	40%
Product Value 2	50%	80 %
Resources	1 %	2 %

Product Level

Prioritized List
1. Solution 2
2. Solution 9
3. Solution 7

Scrum Develop
We measure improvements
Learn and Repeat

Value Decision Tables

Business Goals	Training Costs	User Productivity
Profit	-10%	40%
Market Share	50%	10%
Resources	20%	10%

Stakeholder Val.	Intuitiveness	Performance
Training Costs	-10%	50 %
User Productivity	10 %	10%
Resources	2 %	5 %

Product Values	GUI Style Rex	Code Optimize
Intuitiveness	-10%	40%
Performance	50%	80 %
Resources	1 %	2 %

Prioritized List
1. Code Optimize
2. Solution 9
3. Solution 7

Product Backlog

Scrum Develops

24 h

30 days

Sprint Backlog   Sprint   Working increment

We measure improvements
Learn and Repeat

© Kai@Gilb.com   © Gilb.com
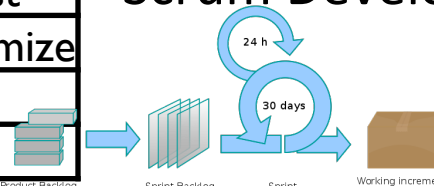
Using Impact Estimation (IE) for Value Prioritisation

- Extended IE to cater for **Stakeholder Viewpoints and explicit Stakeholder Value**
  - **(L. Brodie, Mddx U, PhD) Next slide**

- Consider the value of a requirement to a **specific stakeholder**

- **Calculate** Stakeholder Value/ Development Cost Ratio
  - Value for Money
  - Prioritisation rule (V/£)

Impact Estimation Tables are defined in this book (ask for free copy!)

Extended IE: Simplified Case Study of a Bank Loan System

Designs by expected Increment with design dependencies

Key:
s = seconds
m = minutes
d = days
w = week

By End Date: dd/mm/yyyy

Regulator	IT Dept.	Customer	Rule Admin.	Business Unit	Back Office	Total Value / Benefit	Requirements	1 — D1: Automate Rules + Manual Testing	2 — D2: Back Office Loan Decisioning	3 — D3: Web Self-Service	4 — D4: Automate Rules + Automate Testing
		4				4	R1: Time for customer to submit request 30 min <-> 10 min	-	-	10 m 100%	-
					3	3	R2: Time for Back Office to enter request 30 min <-> 10 min	-	-	0 m 150%	-
		9		9		18	R3: Time to respond to customer request 5 days <-> 20 seconds	-	1 d 80%	20 s 100%	-
					1	1	R4: No of Back Office complaints 10 per week <-> 0	5 50%	<1 90%	0 100%	(2) (80%)
		1			5	6	R5: No of customer complaints 25 per week <-> 5	-	15 50%	5 100%	-
1			5	4	8	18	R6: Time to update business rules 1 month <-> 1 day	2 w 50%	-	-	1 d 100%
1			3	4	6	14	R7: Time to distribute business rules 2 weeks <-> 1 day	1 d 100%	-	20 s 103%	-
2	14	8	17	23	64		Cumulative Total for Performance Requirements	200%	170%	280%	50%
							Design Cost (M)	0.2	0.3	1.0	0.5
							Development Budget 2.5M <-> 300K	2.3	2.0	1.0	0.5
							Cumulative Perf. to Devt. Cost Ratio	1000	567	280	100
							Cumulative Stakeholder Value to Development Cost Ratio	23.5/0.2 =117.5	17.8/0.3 =59.3	13.7/1.0 =13.7	9/0.5 =18

Stakeholder Value

Ten Principles for Much Smarter Finance Project Management

1. Quantify top-level critical objectives

2. Architecture based on top-level objectives

3. Progress reporting based on top objectives

   Value/cost = Profit is main reporting idea

4. Release and main testing based on top objectives

5. Rewards, Bonuses based on top objectives

6. External Contracts based on top objectives

7. Prioritisation based on top objectives

8. Connect Business, Stakeholder and Product Objectives quantitatively

9. Deliver Value (not code) early and often

10. Change Objectives asap
    - when you learn
    - when externals change

The One Summary Principle:

Get Value for Money –

Quantitatively!

That's All Folks!

- Questions?
- Remarks?
- For free digital copy of this book, and 4 of my Agile papers
- Email me subject "Book"
- Tom@Gilb.com

COMPETITIVE ENGINEERING

TOM GILB

A HANDBOOK FOR SYSTEMS ENGINEERING, REQUIREMENTS ENGINEERING, AND SOFTWARE ENGINEERING USING PLANGUAGE

DETAIL AS SUPPLEMENT TO PRESENTATION

© Gilb.com

DETAIL OF 4 CRITICAL OBJECTIVES SHOWN EARLIER

- Business Result Alignment: BRA
- Avoid Duplication
- Exploiting Existing Tools
- Results MIS

Ambition: ***Maximize delivery speed, and satisfaction level, of currently prioritized business improvements, for 'key business goals'***

--------------- *Measurement* -----------------

Scale: % of Planned Value actually Delivered to the Business by defined [Time].

Past [Corp., Time = Deadline, 2007]: X% (guess X < 30%??) <- tg

Goal CS, Time = Deadline, 2009: < 50%, maybe much more?

Meter: <The Tool?>

Issue: can The Tool be exploited to track Value?

-------------- *Relationships* -------------

Type: IT COO Level Project Objective

Business Result Alignment: BRA:

Supports:

1. Portfolio Management Strategic Initiative {Management Framework, Change Drivers, Driving Issues, Results}. Not Quantified.

2. Business problem statement (PID 2.00. 9 areas. Not Quantified.

3. High Level Business Requirements: OMSC3 (Align Business Needs), OMSC6 (Resource Allocation), OMSC7 (Change Alignment). All quantified!

Supported By: <The Tool>, Planguage, Evo

--------- *Objective Admin* -------------

Version: 23 Sept 2007

Sponsor: CIO

Owner: , IT COO

Status: draft tg for COO? -> TS

Scope: : the 1/3 of IT spend for New Demand <- COO

---------- *Definitions* ------------------------

Planned Value:

The monetary benefit estimated for a given scope and duration, that we have formally estimated the organization would get as a result of meeting defined project requirements, at defined levels.

 For example if a project had a requirement to save 1 hour per employee of learning to use a new IT application, and that hour was measurably saved, then the value would be the cost of employee time and overheads saved for a defined period, for a set of employees that needed to learn to use the system. For example for 1,000 employees learning the system in one year, the value would be the cost saving of their 1,000 hours save that year.

Delivered:

'Delivered' means actually put into place; so that there are no restraints on obtaining the benefits (savings, productivity, and consequent value) that was formally planned in the project.

Business:

'Business' means a real defined set of stakeholders, that we need to give the improved systems to in order to derive benefits and consequent value, when they access or apply the improved system. These stakeholders can be any set of employees, contractors, or customers.

Planguage:

a Corp.Tailored planning language, for projects, that demands formal planning of Planned Value for all critical project performance (Improvement) requirements. *Planguage has been used in Corp. and is judged to a be a necessary supplement to Corp.requirements to deal with non-use case requirements.*

Evo:

a project management discipline that focuses on delivering measurable critical requirements and consequent value, to stakeholders, in practice, early and continuously. Evo is about value maximization for the business. The frequent measured delivery of projects Business improvement, can be reported in terms of value delivery. It will keep projects and managers focussed on value delivery to the business.

Avoid Duplication:

Ambition: *eliminate corporate efforts that duplicate other corporate efforts.*

--------------- *Measurement* -----------------

Scale: % of project investment that is Duplicated

Past [2007]: > 30%?? Wild guess

Goal [2010] < 5%   hope

Meter: <manual estimate of all projects.>

-------------- *Relationships* -------------

Type: IT COO Level Project Objective

Supports:

1. Portfolio Management Strategic Initiative {Management Framework, Change Drivers, Driving Issues, Results}. Not Quantified.

2. Business problem statement (PID 2.00. 9 areas. Not Quantified.

3. High Level Business Requirements: OMSC1 (One IT), OMSC2 (Top Down), OMSC4 (Common Methods), OMSC6 (Resource Allocation). All quantified!

Supported By: <strategy not identified yet>. <-tg

--------- *Objective Admin* -------------

Version: 23 Sept 2007

Sponsor: CIO

Owner: -, IT COO

Status: draft tg for COO? -> TS

Scope: : the 1/3 of IT spend for New Demand <- COO

---------- *Definitions* ------------------------

Duplicated:

Work that could to a substantial degree (30% or more) be avoided and saved, by making use of another similar effort or investment – is 'duplicated'.

Exploiting Existing Tools:

Ambition: *make use of existing tools, avoid reinventing the wheel.*
--------------- *Measurement* ------------------
Scale: % by Total Investment Value that Arguably could be avoided by Profitably making use of Existing Tools
Past: 30%±30% ?? wild initial guess to start discussion tg
Goal [2012?, Corp. Wide] : ~ 100%
Meter: <human evaluation of case by case basis, possibly a sample>.
-------------- *Relationships* -------------
Type: IT COO Level Project Objective
Supports:
1. Portfolio Management Strategic Initiative {Management Framework, Change Drivers, Driving Issues, Results}. Not Quantified.
2. Business problem statement (PID 2.00. 9 areas. Not Quantified.
3. High Level Business Requirements: OMSC4 (Common Financial Mgt Methods). All quantified!
Supported By: <strategies not identified yet> <-tg
--------- *Objective Admin* -------------
Version: 23 Sept 2007
Sponsor: - CIO
Owner: COO, IT COO
Status: draft tg for COO? -> CIO
Scope: : the 1/3 of IT spend for New Demand <- COO
------------- *Definitions* --------------------------
Total Investment Value:
Entire IT budget, both new investments, and Run the Business costs.
Arguably:
A Corp. appointed human expert would argue that the cost could profitably be avoided if we reused some Existing Tool.
Existing Tools:
Tools {software, databases, hardware, contracts, development projects, methods, processes, and any other tool} for delivering/operating/
    maintaining an IT system for the business.

Results MIS:

- Ambition: ***deliver high-significance real-time Corp., on critical aspects, of project results and resources.***
- --------------- *Measurement* -----------------
- Scale: % of defined [Key Project Data] available to management in real time.
- Key Project Data: default: {% of Goal Delivered to date, Stakeholder Satisfaction level, Value for Money}
- Past [Corp., 2007]: 0%
- Goal [Corp., 2010]: > 90%
- Meter: < manual evaluation of projects not feeding a defined as useful set of data to The Tool, or another useful system for management>.
- -------------- *Relationships* -------------
- Type: IT COO Level Project Objective
- Supports:
- 1. Portfolio Management Strategic Initiative {Management Framework, Change Drivers, Driving Issues, Results}. Not Quantified.
- 2. Business problem statement (PID 2.00. 9 areas. Not Quantified.
- 3. High Level Business Requirements: OMSC1 (One IT), OMSC3 (Aligning the Business), OMSC4 (Financial Transparency), OMSC5 (IT Risk Control), OMSC6 (Resource Allocation), OMSC7 (Change Alignment). All quantified!
- Supported By:
- --------- *Objective Admin* -------------
- Version: 23 Sept 2007
- Sponsor: - CIO
- Owner: - IT COO
- Status: draft tg for COO? -> TS
- Scope: : the 1/3 of IT spend for New Demand <- COO
- ------------- *Definitions* --------------------
- Goal Delivered:
- defined as: *The Goal refers to a formally defined and approved quantified level of performance that a project is committed to delivering. Goal satisfaction is the primary priority of the project team. The Goal level is needed to enable or drive business performance. 100% of a goal means that the numeric goal is reached measurably in practice. 0% means that no progress from a benchmark level has been made.*
- Value for Money:
- defined as:
- Project Value is defined as the estimated (or measured) stakeholder consequence from the delivery of the main project objectives. This can be expressed in money terms. It will be for a defined set of assumptions and for a defined time period and scope. Money is the current real cost of getting that Value in place (investment and operational costs).
- Stakeholder Satisfaction Level:
- Defined as: a survey set of measures from defined stakeholders about satisfaction with a set of questions about current operational situation, and results of new technology implementation.

Exercise: Aspects of Love, or Love is a many splendored thing!

See note for Sutra

- Make a list of of love's many aspects
- Quantify a requirement for one of those aspects

Love Attributes:
Brainstormed By Dutch Engineers

- Kissed-ness
- Care
- Sharing
- Respect
- Comfort
- Friendship
- Sex
- Understandin
- Trust

- Support
- Attention
- Passion
- Satisfaction
- ...
- ...
-

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Trust [Caroline]

- **Love.Trust.Truthfulness**

  Ambition: No lies.

  Scale:

  Average Black lies/month from [defined sources].

  Meter:

  Independent confidential log from sample of the defined sources.

  Past Lie Level:

  Past [My Old Mate, 2004]: 42 <-Bart

  Goal

  [My Current Mate, Year = 2005]: Past Lie Level/2

  Black: Defined: Non White Lies

- **Other aspects of Trust:**

  – **Broken Agreements**

  – **Late Appointments**

  – **Late delivery**

  – **Gossiping to Others**

"Camaraderie" Quantified   (Real Case UK)

Ambition: To maintain an exceptionally high *sense of good personal feelings* and *co-operation* amongst all staff: family atmosphere, corporate patriotism. In spite of business change and pressures.

Scale: Probability that individuals enjoy the working atmosphere so much that they would not move to another company for less than 50% pay rise.

Meter: Apparently real offer via CD-S.

Past [September 2001]: 60+ % <- R & CD.

Goal [Mid 2002]: 10%,   [End 2002]: <1% <- R & CD.

Rationale:
Maintain staff number, and morale as core of business and business predictability for customers.

Love: Biblical Dimensions:
Bishop L Day, Boeing

The biblical citation (Book of First Corinthians I) **gives the quantification of the term "love" (agape in Greek).**

　　The 'quantification' for love would be as follows:　→

A person who loves acts the following way toward the person being loved:

1.　　　　suffereth long

2.　　　　is kind

3.　　　　envieth not

4.　　　　vaunteth not itself, vaunteth...:

　　　　　or, is not rash　(Vaunt = extravagant self praise)

5.　　　　is not puffed up

6.　　　　Doth not behave itself unseemly

7.　　　　seeketh not her own

8.　　　　is not easily provoked

9.　　　　thinketh no evil

10.　　　　Rejoiceth not in iniquity　(=an unjust act)

11.　　　　rejoiceth in the truth

12.　　　　Beareth all things

13.　　　　believeth all things

14.　　　　hopeth all things

15.　　　　endureth all things

16.　**never faileth**