

A booklet with advice on how to analyze plans, and make them better

PLanalysis

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TOM@GILB.COM

(Feedback welcome)

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*The view from my cabin, where I often sit writing ,
on the Oslofjord. I plan to do my Summer writing here.*

One Page Overview of Subjects.

(THIS IS A DRAFT OF CONTENT IDEAS ONLY)

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Aug 12 2020 pause

I feel I have done enough PLanalysis. 62 pages. I am not sure what to add. I will wait for suggestions from readers. Most of the other ideas (part 4 to 6) are not analysis, but they are translation or re-specification. They are written about in many of my other books from CE to Governeering. But what is it that I should instruct on clarifying spec that I have not already written and referenced? Help!

4. Plan Analysis. Knowledge

The Headings: Objectives strategies references as Sources

5. Re Specification into Objects. Shall we assume ValPlan or allow a manual method?

Tagging
Ambition Level or Summary
Pictures, graphics

Keep in mind Trinity application:

6. Re specification of entire plans

into ValPlan
Word, see CE versional and templates
Rules CE

Some loose ideas

Core Principles of PLanalysis

Standards for
Rules
E /X CRITERIA
Policy for Planning

The One Page Plan
The Planning Week

Design Logic, SORT OF DONE BUT CAN DO THE DESIGN LOGIC I DID BEFORE TOO

Practical things to do t meetings, DONE 1.1 PARTLY, BUT NEED ESP FOR MEETINGS

Practical things you can do with your plan presentation slides

Practical things you can do if you are reviewing a plan.

Things you can do if you are discussing a government plan in social media

Agile and Planning

Examples of Bad or useless Planning Advice

<https://www.dummies.com/business/business-strategy/tips-for-better-strategic-planning/>

Logic Chain: bad plan to bad results

Summary: Most Planning sucks. I'll help you do a much better job, for free. You will help make the world a better place.

0.0 Introduction

Surely you have seen bad plans? Have you ever seen a really great and admirable plan? What are the criteria for judging plans, and for declaring they are great?

Most all plans I see are terrible. They are totally lacking in clear ideas about the most critical objectives. They are incomplete, missing critical elements everyone where. And they are 95% ambiguous words, with no attempt at clear definitions.

The problem is so wide-spread that I have guessed, almost nobody reacts to it. Nobody cries foul. Nobody does anything about it. We just *live* with bad plans.

Well, it worries me a lot. It destroys productivity of the whole world's organizations, private and public. Things cost much more. Results are years late.

But nobody seems to care. Not the leaders, the top politicians, the C-level executives, not the business schools. Hardly a voice is raised. These plans are 'they way it is'. This book is for 'managers', who want to manage.

I guess you are reading this book because you are more interested than most. So, I want to help you out.

This is a very practical book. I am going to show you how to analyze plans, and identify the bad stuff. Then how to do something about it in practice.

If you are leading an organization, or even just a project, then you can expect things to get measurably better, faster, less risky, more productive.

I have a theory that the bad planning methods in widespread use are planted there by our enemies, a sort of planning disinformation.

The comfortable thing about this book, is that you can try out the ideas, immediately, in small steps, and augment the methods as you see earlier efforts succeed.

You do not have to buy a new planning religion, or change your whole organization. Just try things quietly, diplomatically, and you and your colleagues judge for yourselves. The ideas are absolutely free, no permissions, no licenses, no certifications, no expensive training. See the references, with about 90% free downloads from me.

I do not want your money, but I would like to help you make the world a much better place

Clarity is Contagious. Unless you want to sabotage and hide reality. We do need leaders, and I hope that is YOU.

1.1: One-Page PLanalysis: Here are some basic questions for looking at a plan

1. **COUNT AMBIGUITIES:** on a page or less mark and count all ambiguous words. Anything about 5 ambiguities per 300 words is very bad, and a sign of unintelligible plans. They probably all need definition.
2. **LINK WORDS:** on a page, underline or mark all 'link words', like in order to, so as , by, thus giving, by means of. They indicate 2 levels of concern (ends and means). These need separation (clear agreed ends, before means is specified). And the claim of a relationship needs documentation, not a claim without evidence and source.
3. **AND:** The use of '&'et 'and' in sentences indicates several different considerations, which need separation, identification, quality control, and justification.
4. **BULLET POINTS:** bullet points ("*", and similar (dash (-)) and even simple numbering (1. 2. 3.) are indicators of no stable identity of the idea. No one single approved instance of that idea which can be referred to as the master definition. No followup, no responsibility. You need stable Name Tags, or at least a unique number.
5. **DEGREES:** look for and mark words like, increased, enhanced, reduced, better, excellent. They indicate degrees of improvement: but you need numbers not words.
6. **GENERALITIES:** non specific words like, people, cases, productivity, organization, team, security, are a type of ambiguity that needs definition into a set of interesting instances (not merely a good definition)
7. **NO EVIDENCE:** when claims are made for good strategies, look for any evidence for the claim, and a named source of the evidence. Maybe even who is responsible for the good results, or blame if not.
8. **NO SOURCE:** for every claim, look for a specific source (like a URL to a study). If not, assume this is high risk.
9. **CAUSALITY:** anything If we do X then Y will happen, is a claim and evidence and responsibility need to be there.
10. **SIDE EFFECTS:** if claims If X there Y, do not even mention all associated costs, and side effects for all objectives and stakeholders, then the point is poorly researched, and you are at great risk something will go wrong.

1.2 Here are some nice actions you can take when you discover plan defects: PlanFix

1. Do not personally attack the planner. Attack the plan. Who ever wrote it did their best, as they understood the job, and got trained to do it. If there is any fault, it is 'management'.
2. Before you ever announce a plan defect to anyone else, you should yourself draft a pretty good correction to the plan. Like define terms, quantify objectives, give sources.
3. Before announcing defects to a group (by email, or in a meeting) discuss confidentially with a sympathetic person. Tell them what you are thinking of doing. And ask if they agree and are your ally. Ask what they think you should do. Never walk into a room without an ally. (Trygve Lie principle)
4. Consider taking up the defects with the plan author directly and confidentially, and non-threateningly. Offer your help to make their plan look better.
5. Point out that there are no official rules or standards yet, for some of the defect types, and offer to develop them, starts ready and drafted. Rewrite part of the plan to show how they work.
6. At some point, make the point that the organization needs to improve their training and standards for planning, so as to reduce the plan defects. (Experiences says 'by 100x!'). Offer to make it happen (train, standards). Have your new
7. xxx
8. Yyy

1.3.1 Core beliefs about plans. The Logic of Planning © Gilb 2020

1. **FUTURE:** Plans are most critically about moving towards balanced-sets of stakeholder-value targets.
2. **CLARITY:** If stakeholder-value targets are unclear, we cannot reach them through planning.
3. **MULTIPLE:** All plans must deal with *multiple* targets, and multiple constraints, simultaneously.
4. **COMPLETENESS:** If we fail to deal with *any single* critical target or constraint, the entire plan can fail to deliver, any or all, of the desired future states, and/or the expected level of resource constraints needed.
5. **CONSTANT CHANGE:** all plan elements (like objectives, strategies, constraints, stakeholders) are continuously subject to change, to mirror real-world changes.
6. **CONSTANT UPDATES:** if the plan does not get updated frequently enough, with those critical changes, then it is risking some degree of failure of results.
7. **STAKEHOLDERS:** plan stakeholders are *many*, with *many* needs, not just for a *class* of stakeholders (like 'nurses'), but with *variations for individuals*; and the stakeholder needs picture is always changing.
8. **NEED CHANGE:** if we fail in our plans to plan for real critical-stakeholder needs, including their *need to change*, and to *be an individual*, then we risk undesirable results in the system being planned.
9. **CHANGING UNKNOWNS:** it is impossible to know all stakeholder needs, and all system requirements, in advance. They will be discovered gradually, and they will change.
10. **PLANNING ADAPTABILITY:** it is possible to plan any system, so that it can more-easily adapt to new changes during the system lifetime. Open-ended systems.

1.3.2 Planning consequences of the Core Planning Beliefs (in 1.3.1)

1. **STAKEHOLDER PLANS:** Thorough analysis, and specification of all critical stakeholders, and their needs, is required.
2. **OBJECTIVES QUANTIFIED:** Absolutely all critical objectives must be specified *quantitatively*, for intelligibility.
3. **MULTIPLE RESOURCES:** All critical resources, *people, time, money, space; both short term and longer term*, must be budgeted, and managed, during *design and implementation*.
4. **STRATEGY VALUES ESTIMATION:** Potential strategies (*means, designs, architecture*) must be quantitatively evaluated, against the *quantified objectives* and constraints, together with strategy *risks and uncertainties*.
5. **STRATEGY DECOMPOSITION:** Large strategies, need to be decomposed into smaller strategies, and deployed incrementally: scaling up when proven, and modified when disappointing.
6. **DYNAMIC PRIORITIZATION:** Prioritization needs to be dynamic, in small increments, to cope with changes and new insights. It needs to be based on a selected policy; like 'best value for resources, and risks'.
7. **INCREMENTAL DETAIL:** It is sufficient to do *detailed planning* for the *near term* increments. It is premature to plan in detail, *too far ahead* (as in chess)
8. **CORE PLAN:** The main 'plan implementation controls' can be a one-page table, showing the most-critical objectives and resource budgets, together with current planned value progress, and resource consumption. Nothing else is essential. [P2, case]
9. **VALUE VALUES:** The essential planning question, at all times is: *how much progress have we made towards our planned value targets, in relation to remaining budgeted resources?*
10. **CONTRACT:** as far as legally and practically possible, all payments and rewards for plan implementation, should be based on the degree-of-measurable (and stable, locked in) delivery-of-values, within budgeted constraints.

1.3.3 Good Questions about plans

One way to identify good plans.

You can put these on the back of your business card. I did

Twelve Tough Questions

1. NUMBERS

Why isn't the improvement *quantified*?

2. RISK

What is degree of *risk* or uncertainty; and *why*?

3. DOUBT

Are you *sure*? If not, *why* not?

4. SOURCE

Where did you get *that* from? How can *I* check it out?

5. IMPACT

How does *your* idea affect *my goals*, measurably?

6. ALL CRITICAL FACTORS

Did we *forget anything critical* to survival?

7. EVIDENCE

How do you *know* it works that way? Did it 'ever'?

8. ENOUGH

Have we got a *complete* solution? Are *all* objectives satisfied?

9. PROFITABILITY FIRST

Are we planning to do the '*profitable* things' first?

10. COMMITMENT

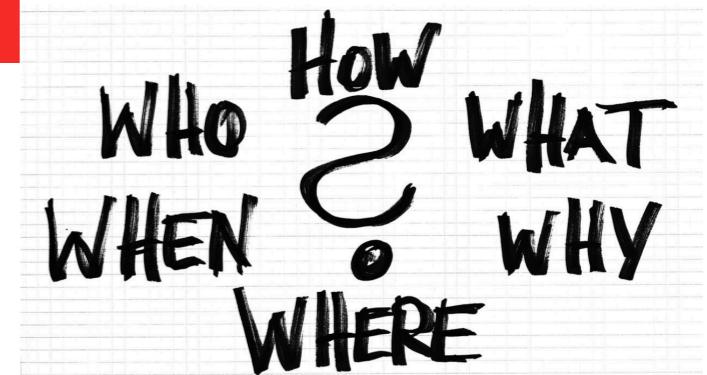
Who is responsible for failure, or success?

11. PROOF

How can we be *sure* the plan is working, *during* the project; *early*?

12. NO CURE

Is it *no cure, no pay*, in a contract? Why not?



PLanalysis Checklists

1.4. Plan Knowledge Verification

Making sure you can trust and use the knowledge

My basic ways of verifying knowledge:

1. **Search for case study facts, or research, on the internet.**
2. **Challenge the source, to supply *evidence*, facts, numbers, measures, references, studies, case studies.**
3. **Try it out, in your own work. If you are in my profession, you get your clients to try it for you, but make sure you get their results later.**
4. **Challenge people, maybe those with competing ideas, to 'show fault', in your evidence base, or to show *better* evidence, for *their* competing ideas. Notice I did not say 'argue with words'. I said 'show data'.**



Figure 1.4 Plan Knowledge Management & 'Accounting'

<https://www.semanticscholar.org/paper/Knowledge-management-and-measurement%3A-a-critical-Ragab-Arisha/f994db4aeffd79f92ef2ddc2c9b1eb20beaoddeb>

1.5 Technical Plans, Requirements

10 Tough Questions You can ask about *Plan Objectives*

1. Have you **agreed** a set of your top-10 critical-value objectives for the product?
2. Are those objectives **unambiguously clear**, to *all* who might *have to* understand them; the intended readership?
3. Is it clear *which* requirements the **stakeholders support**, and are interested in?
4. Are the requirements really **values, qualities and results: not the technology**, we *think* will get us results.
5. Is it clear - *what* the **worst acceptable value** delivery level is? (Tolerable level)
6. Is it clear - *what* the **Wish level** is, and that this is not a commitment *yet* (Goal level): until we find technology and resources, to reach a promised 'Goal' level?

7. Is it clear what the requirement's knock-on **value** is, for example 'economic', or in terms of higher-level objectives, if we reach the Wish or Goal level. What is it worth?
8. Do we know the **defect density** of our specifications? If you can see more than 10 unclear or ambiguous words on a requirements page, is this a threat to understanding your project? (See Terzakis, Intel, [D1])
9. Do we have other **major stakeholder levels that need a separate specification of requirements**? Like; Business Level, Stakeholder Level, Product Level or Sub-Product Level.
10. Is there any *requirement*, which is arguably **more-critical** than the top-ten, that we failed to include or specify? Now that we *think* we have a complete set: what is missing?

Intel has used my knowledge methods for over 20 years for over 20,000 trained engineers. This was part of an invited speech I held for them in 2016

The Keynote Slides: 'Power Planning Principles'
<http://concepts.gilb.com/dl874> (pptx version)

20 April 2016
'Accelerate Results' Intel Conference,
Hillsborough Oregon

The Video
<https://www.gilb.com/blog/power-planning-principles?cid=87f388e7-e0bc-4796-ab1a-c7faad2674d3>



3rd Gen Intel Xeon Scalable processor, dubbed 'Cooper Lake'

Image: Intel

Figure 1.5 Intel Product.

1.6 Technical Plans: Designs & Architecture

10 Tough Questions You can ask about Solutions, Design & Architecture

These 20 Tough Questions (10+10) are not for beginners. They assume training and experience in my methods of knowledge (Planguage, Spec QC, Evo) which 20,000 Intel Engineers had been trained in, and used. Video is at <https://www.gilb.com/blog/power-planning-principles?cid=87f388e7-e0bc-4796-ab1a-c7faad2674d3>



Figure 1.6 Intel Logo

11. Are the **designs/solutions specified so unambiguously and clearly**, so that nobody can **inadvertently misunderstand them, including what to estimate and what to implement?**
12. Have you estimated the short-term and life-cycle **costs**, in both time and money, for **each** major strategy, design, or solution?
13. Have you looked at the ratio of solution-impacts over their costs (solution impacts/solution costs): so you can select the most **efficient solutions**?
14. Have you looked at the **worst-worst case** (for 'credibility' '±uncertainty') for all **value** impacts, and all **resource** impacts?
15. Can you consider implementing the most efficient (effects/costs) solutions **early, to get feedback**, learning, and possibly deliver *real value* to the field?
16. Can you *decompose any* design solution, into **smaller**, independently-implementable, sub-solutions? High-value sub-solutions can *then* be done *earlier*.
17. Have you invited **competitive imaginative engineers, to come up with far more cost-effective solutions** than you can show them, on your Impact Estimation Tables? Using the Impact Estimation Table as a *provocative baseline* for discussion.
18. Is it possible to improve **the Impact Estimates**, and improve *certainty*, by better research, on existing experience of the solutions, or by experiments, or pilots? Can you get better solution *credibility*, for 'deciding-what-to-do early'?
19. Can we conduct simple, short-term, this week, *A/B experiments*, to get better data and experience, on *some* of the solutions?
20. What can we do to **motivate the best design engineers (and architects)** to analyze our ideas, and **come up with better ones?** Both up front, and after delivery-cycle feedback?

2.0 Term Analysis

How to analyze terms into useful categories.

We are looking at terms in plans, 1 or more tightly related sequential words, for the following purposes:

1. CLARITY: To see if they are unambiguously clear, or need better definition
2. CLASS: To determine classification, as to planning object.
3. RELATION: To see if they are useful in defining other terms.
4. RULES: to see if they violate rules or standards
5. LINK WORDS: indicating a bad mix of ends and means.

Here are some simple examples.

Part of a typical plan, with many objectives.

What the NHS Long Term Plan will deliver for patients

These are just some of the ways that we want to improve care for patients over the next ten years:

Making sure everyone gets the best start in life

Delivering world-class care for major health problems

Supporting people to age well

- reducing stillbirths and mother and child deaths during birth by 50%
- ensuring most women can benefit from continuity of carer through and beyond their pregnancy, targeted towards those who will benefit most
- providing extra support for expectant mothers at risk of premature birth
- expanding support for perinatal mental health conditions
- taking further action on childhood obesity
- increasing funding for children and young people's mental health
- bringing down waiting times for autism assessments
- providing the right care for children with a learning disability
- delivering the best treatments available for children with cancer, including CAR-T and proton beam therapy.
- preventing 150,000 heart attacks, strokes and dementia cases
- providing education and exercise programmes to tens of thousands more patients with heart problems, preventing up to 14,000 premature deaths
- saving 55,000 more lives a year by diagnosing more cancers early
- investing in spotting and treating lung conditions early to prevent 80,000 stays in hospital
- spending at least £2.3bn more a year on mental health care
- helping 380,000 more people get therapy for depression and anxiety by 2023/24
- delivering community-based physical and mental care for 370,000 people with severe mental illness a year by 2023/24.
- increasing funding for primary and community care by at least £4.5bn
- bringing together different professionals to coordinate care better
- helping more people to live independently at home for longer
- developing more rapid community response teams to prevent unnecessary hospital spells, and speed up discharges home.
- upgrading NHS staff support to people living in care homes.
- improving the recognition of carers and support they receive
- making further progress on care for people with dementia
- giving more people more say about the care they receive and where they receive it, particularly towards the end of their lives.

Figure 2.0 Source: <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/01/the-nhs-long-term-plan-summary.pdf>

The full plan: <https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/>

2.1 Term Analysis, based on a set of 'Rules'

Observations: on Figure 2.0 NHS Objectives

1. The '•' is a term indicating, a new statement. But it also indicates that the statement has **no identity** (nameless), and cannot be cross referenced later ('bullet point 23' ?) and itself is not referencing any particular specification in the rest of the plan. This is probably also a rule violation ('All statements will have a unique Name Tag'), like T1 (Figure 2.1)
2. Notice the terms starting the statements, like '*reducing*', '*ensuring*', and '*preventing*'. Clearly these indicate a 'degree of improvement' for a stakeholder value. In many cases a *number* is specified. But in many cases *no* number is specified. Most of these statements, I would classify as an 'Ambition Level' (Mgt BS); and expect much-more-detailed specification *somewhere*, to explain this 'headline'.
3. There is a very large number of ambiguous terms ('*mother and child*', '*benefit*', '*further action*', '*support*'), in addition all the scalar terms (*increasing*, *expanding*). T3, T4.
4. There are no references to the **basis** for the decision (T6), or the **responsible** instance for the result (T8)
5. *There are no useful classifications of the nature of the statements. The heading says 'will deliver for patients' and some of them are indeed objectives. But some of them are clearly NOT,*

such as 'spending money', and 'diagnosing more cancers'

6. *There are many violations of T9, no 'Link Words ('preventing up to,,' 'by diagnosing', 'to prevent') these terms imply guaranteed causality. They choose and determine strategies, **before** we even have a 'clear objective', and without showing us, 'how a selection was made' of all possible strategies.*
7. *There is more, but the density of violations of clear planning rules is so pervasive here, both badly-specified things, and omissions of information, that the **plan defect** (rule violation) **density** exceeds any reasonable level. So the conclusion is not, to fix it up in bad spots. A total proper **rewrite** is required.*
8. *The obvious excuse that, 'this is just a summary', is invalid since there is no direct reference to clearer better plans. We cannot read **these** plans and understand them. We cannot review or QC them. Management and politicians **cannot make decisions** to do these things on this basis.*
9. *I looked at the detailed plan, and the level of 'objectives specification' is almost identical to these 'summaries', See 3.9 [T1.2]. As 'bad'*

SOME BASIC RULES OF PLAN SPECIFICATION; Which impact 'TERM ANALYSIS'

T1. TAG: All statements will have a Name Tag, for unique identity, or will refer to a Name Tag as its primary specification.

T2. STATEMENT TYPE: All statements will be proceeded by a declaration of the statement nature, using a defined Term (like Note, Goal, Scale)

T3. UNAMBIGUOUS: All terms will be unambiguous, or defined somehow in the plan glossary.

T4. CLEAR: All terms will be clear enough to be correctly interpreted, and tested, by the Intended Readership, and QC.

T5. QUANTIFY: All value improvement objectives will be specified quantitatively (Scale, Benchmark, Constraint, Target, Deadline).

T6. SOURCE: A reference to the source of the decision to specify this shall be included.

T7. SET TAGS: An unique Identity Name will be implied, or explicitly for every statement, and any referenced set of related statements. Often as a hierarchical set like 'Database.Quality.Scale'

T8. RESPONSIBILITY: An explicit or group of statements reference will be made to the entity responsible for delivering the results indicated. 'RESULT RESPONSIBLE: CTO'

T9: NO TYPE MIX: Link Words (Achieve X thru Y) are prohibited. Means and ends will be separated, and justified.

Figure 2.1 Some typical Rules that impact our planning specification, and term analysis [B1, P7]

It is amazing how many organizations do not actually have standards like these for planning. Do you?

2.2.1 Quantitative Plan Analysis by 'Defect Density' & 'Rules Violations'

Numeric Analysis of a plan. Plan QC.

If you would like a systematic, repeatable, *cheap* method of finding out if the terms violate too many rules, then you can use my Spec QC: Specification Quality Control [P5] and B1, B2]. Here is a report, with with long-term, large-scale successful use, at Intel.

The method is based on 'Rules for planning', very similar to those above [Fig. 2.1]. A small team (2 to 4 people) takes a representative sample (1 to 3 pages) and they count Rule violations. Every violation is a threat to the success of the plan.

If the density of 'Rule Violations' (defects per page) is too high (*would not pay off, would cost more if we used it, than if we fix it*), the plan is **refuse 'exit'** - to the next use of it (for example to *architecture* or *strategy planning*). The plan authors have to do, 'whatever it takes' to reduce defects. Sloppy planning is not tolerated.

In this case (Fig.2.2.1) it took 6 attempts. The defects were reduced by 98%. Planners learned to follow best practice rules, in *practice*. And their productivity went up 233%. In other words, it did **not** increase costs to do this, it increased value of professional work. 'This stuff works!' (Erik Simmons, Intel, [B1]).

Intel Measures of Gilb Methods 2013

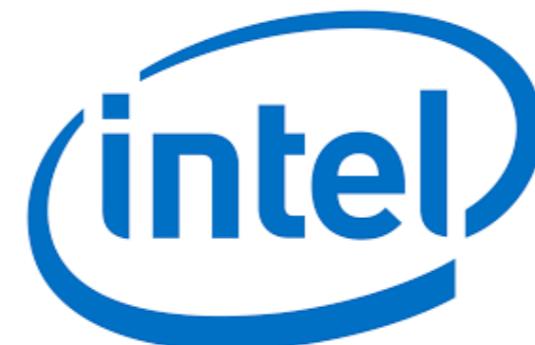


TABLE I: GEN 2 REQUIREMENTS DEFECT DENSITY

PRD Revision	# of Defects	# of Pages	Defects/ Page (DPP)	% Change in DPP
0.3	312	31	10.06	-
0.5	209	44	4.75	-53%
0.6	247	60	4.12	-13%
0.7	114	33	3.45	-16%
0.8	45	38	1.18	-66%
1.0	10	45	0.22	-81%
Overall % change in DPP revision 0.3 to 1.0: -98%				

Figure 2.2.1 [R1] TERZAKIS INTEL 2011 AND 2013.

Practical industrial cases. SQC and Planguage

https://selab.fbk.eu/re11_download/industry/Terzakis.pdf

The Impact of Requirements on Software Quality across Three Product Generations

John Terzakis
Intel Corporation, USA
john.terzakis@intel.com

II. PRODUCT BACKGROUNDS

The requirements for Gen 1 that existed were scattered across a variety of documents, spreadsheets, emails and websites and lacked a consistent syntax. They were under lax revision and change control, which made determining the most current set of requirements challenging. There was no overall requirements specification; hence reviews were sporadic and unstructured. Many of the legacy features were not documented. As a result, testing had many gaps due to missing and incorrect information.

The Gen 1 product was targeted to run on both desktop and laptop platforms running on an Intel processor (CPU). Code was developed across multiple sites in the United States and other countries. Integration of the code bases and testing occurred in the U.S. The Software Development Lifecycle (SDLC) was approximately two years.

After analyzing the software defect data from the Gen 1 release, the Gen 2 team identified requirements as a key improvement area. A requirements Subject Matter Expert (SME) was assigned to assist the team in the elicitation, analysis, writing, review and management of the requirements for the second generation product. The SME developed a plan to address three critical requirements areas: a central repository, training, and reviews. A commercial Requirements Management Tool (RMT) was used to store all product requirements in a database. The data model for the requirements was based on the Planguage keywords created by Tom Gilb [2]. The RMT was configured to generate a formatted Product Requirements Document (PRD) under revision control. Architecture specifications, design documents and test cases were developed from this PRD. The SME provided training on best practices for writing requirements, including a standardized syntax, attributes of well written requirements and Planguage to the primary authors (who were



3.0 Phrase Analysis.

Phrase Analysis: sentences and statements

The purpose of phrase analysis

Is to identify and separate significantly different types of specification (an Objective like those in Fig. 2.0 is a phrase).

So that they can get necessary respectful treatment, specification and evaluation

Unfortunately, it is common practice to mix together, even in one sentence, several very different types of planning object. For example 'Objectives + Strategies + Background Info'.

They 'phrases' need to be *separated*, so that they can be properly specified, and then *later* 'linked together', to show their relationships.

If we allow this customary 'sloppy mixture' of very different planning elements to persist, it will destroy the effectiveness of our plans. We will not get well-defined and clear objectives. We will be burdened with the wrong strategies, because they were 'born prematurely', and selected without respect to many other

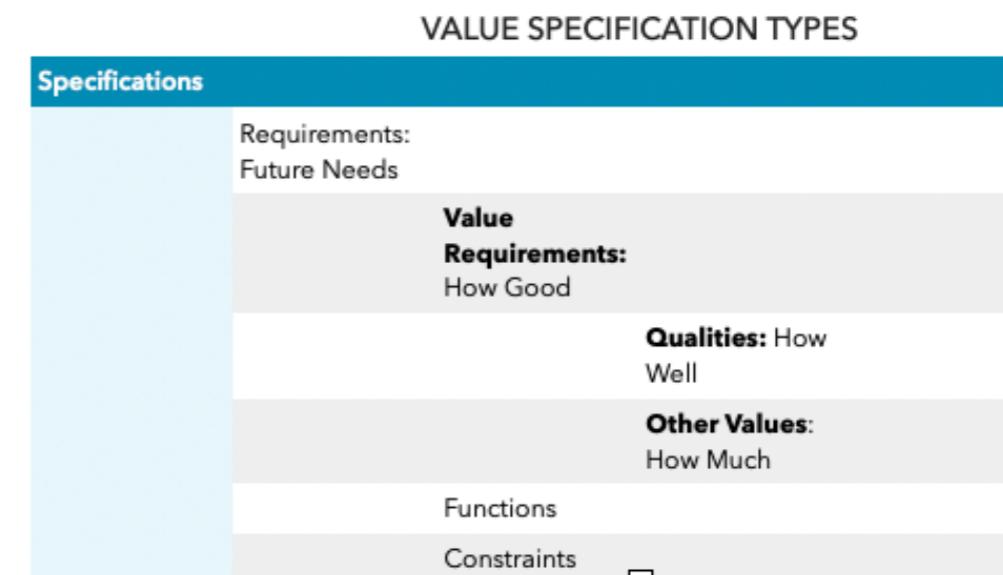


Figure 3.1 Stakeholder value types.

concurrent requirements. One-dimensional thinking is dangerous as a planning method.

Another persistent analysis problem, related to the 'ends **link word** means' problem, but not identical to it, is that the plans relate to very **different levels of concern** (as in organization hierarchy) and they are often not clearly separated. This leads directly to problems with *responsibility* and *traceability*.

3.1 Phrase Analysis. Basic Types

Basic Plan Elements

The basic types of plan elements we need to identify, to separate out, and to refine the specification of ,are

1. Requirements: **Future Desired States**
2. Solutions: **strategies, means, architecture to get to future states**
3. Background Information: **all kinds of useful specs related to the plans: responsibility, risks, priorities, issues, etc.**
4. Actions: **plans to do stuff, like invest, get sanction, implement.**

Why separate? So the plan will be clearer, and the planning process will produce more successful plans.

Planning elements and their relationships.

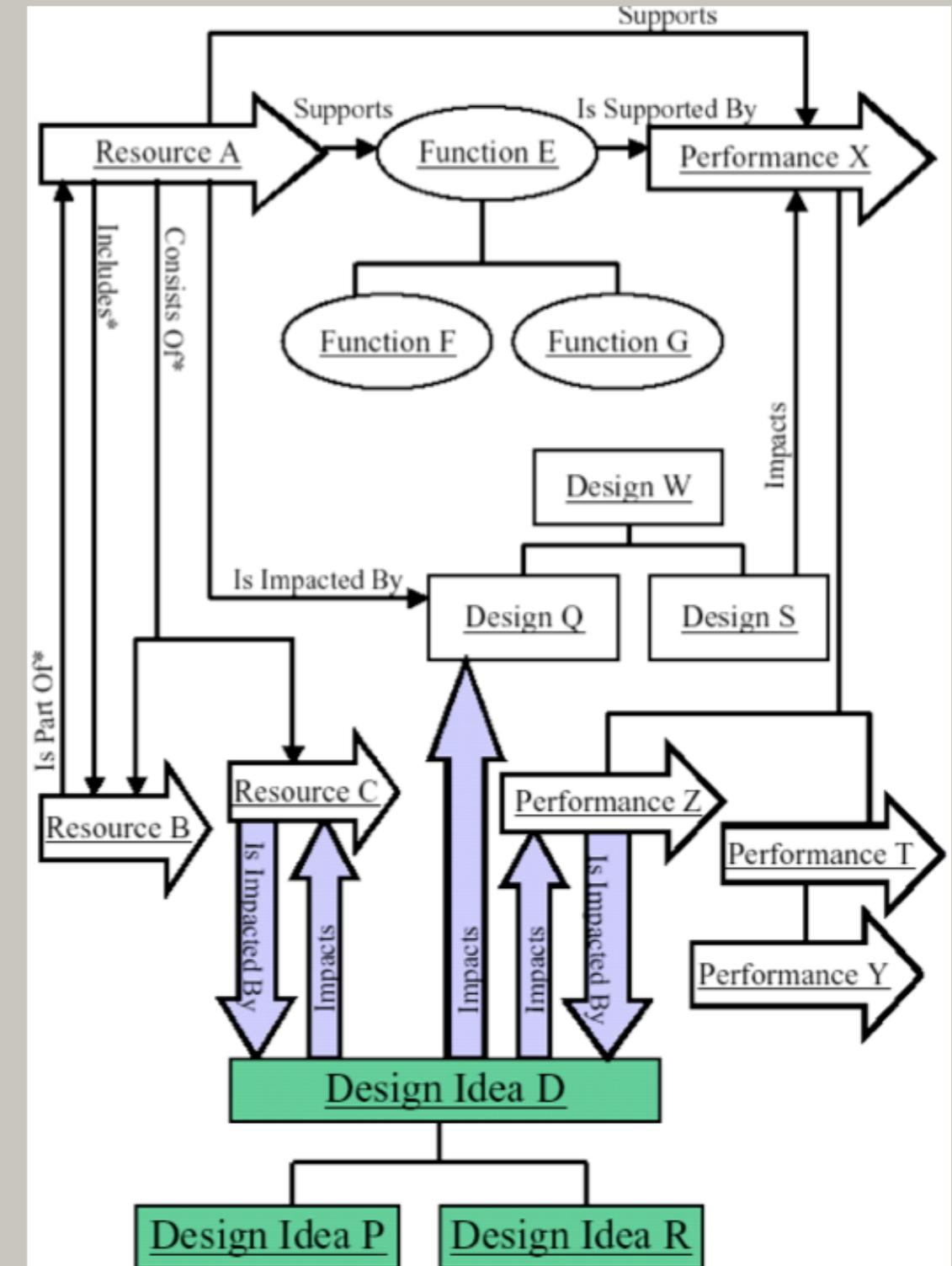


Figure 3.1. Source 'Competitive Engineering' [B1]

3.2.1 Phrase Analysis. More-detailed sub-classes of planning phrase types

Requirements

A requirement is something 'desired in the future'. But it is important to distinguish between different types of requirements. Figure 3.2.1 A.

A Function, is a binary, thing. Function is what a system **does**. It does not require quantification to specify it. But it does require enough precision and detail to *test* that it is there, and to *order it* from a supplier. You may not have to provide it, or build it, because it could *already be* in the older system, you are building on.

1. A Performance requirement; stakeholder **values** and **qualities**; are *always* a scalar variable. You must define them

quantitatively, and specify, in your plan *which level you want*; *when*, for *whom* and under which *conditions*. Most of your design (architecture, strategizing) is explicitly directed towards how to deliver these performance levels.

2. Constraints: are many types, some are binary ('use designs we have patents on') and some are variables ('no less than 18 degrees C'), some about resources (Budget = X). But they must be *respected*, when choosing strategies, and validating strategies.

Various types of requirements, Objectives, & Visions

Planguage Concept Glossary 401

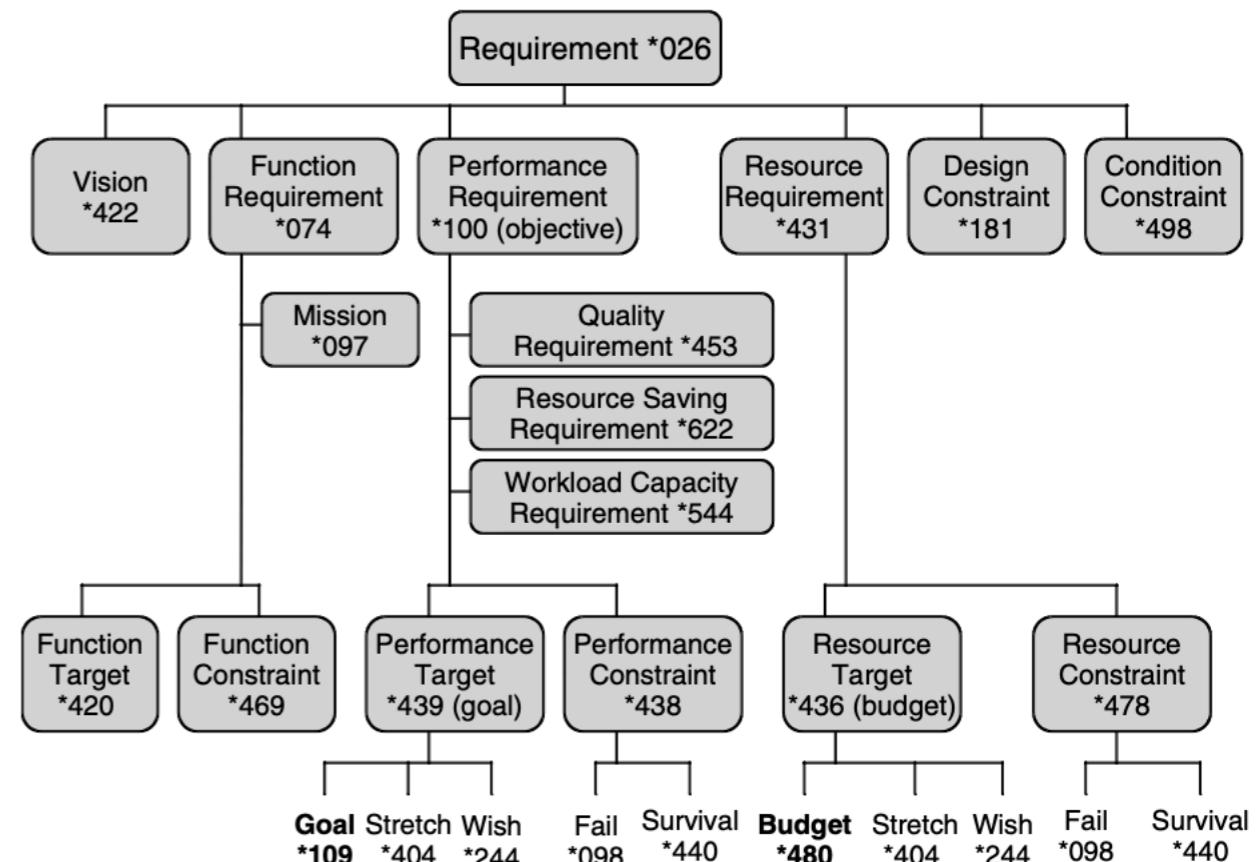


Figure G20
Requirement Concepts.

Figure 3.2.1 A. Source CE book [B1]

The *-number, like *026 for Requirement, indicates that these concepts are formally defined in Planguage.

You can look them up in one of many **free glossaries**, like [B1,] and [P4], and [ValPlan.net](http://www.gilb.com/valplan)
<https://www.gilb.com/valplan> (free trial)

A 'Design Constraint' is interesting because it is **both** a requirement and a design.

3.2.1. Ok Let's take UN Sustainability Goals Poverty Target 1.5 as an example

“By 2030, build the resilience of the poor and those in **vulnerable situations** and reduce their **exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters**”

Quote source: [P2.4, <https://sdgs.un.org/goals/goal1>



Initial comment: this is a lot of words.
It is not clear at all.

NO Goal-level number for ‘Resilience’ building.

If we look at it in context (below) it is a sub-goal of UN Goal 1, End Poverty
What is it? A Goal, means objective, a strategy?

And how many ambiguous words do you find here, a simple count, a % of all words? I made them **bold** & underlined.

3.2.1 Phrase Analysis. More detailed sub-classes of planning types

Here is an exercise you can do, before you look at my analysis next page:

1. How many ambiguous terms can you find in 1.5, and then in 1.A. ? (in Figure 3,2,1 B here).
2. Do you think the statements are clean enough (defect density low) to publish internationally, and save the poor?
3. Goals 1.5 and 1.A are sub-Goals of UN Goal 1: End Poverty.
 1. Are they the main values, real goals or objectives?
 2. **Or** are they some selected ‘means objectives’ (a type of strategy) to support the main goal (end poverty)
3. If so, how many other Means Objectives are there, and why were these chosen by the UN?
4. Who selected these ‘means objectives’, and why?
5. What are these, what UN calls ‘targets’ (1.5.1,- 1.5.3, and 1.A1, 1.A.2) are they our real goals for ending poverty, are they KPIs (Key Performance Indicators)? Are they ‘Sub-Means Objectives? Are they just there to make it look measurable? Or because there might be some statistics at UN for these factors? It is OK to feel confused.

sustainabledevelopment.un.org

 **SUSTAINABLE DEVELOPMENT GOALS**
KNOWLEDGE PLATFORM

HOME SDGS HLPF STATES SIDS UN SYSTEM S1

ABOUT

1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

1.5.1 Number of deaths, missing persons and persons affected by disaster per 100,000 people

1.5.2 Direct disaster economic loss in relation to global gross domestic product (GDP)a

1.5.3 Number of countries with national and local disaster risk reduction strategies

1.A Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions

1.A.1 Proportion of resources allocated by the government directly to poverty reduction programmes

1.A.2 Proportion of total government spending on essential services (education, health and social protection)

Figure 3.2.1 B. Source [SustainableDevelopment.UN.org](https://sdgs.un.org/goals/goal1), <https://sdgs.un.org/goals/goal1>

3.2.1 My Analysis Is below

Let me spell it out, to leave no doubt in your mind.

1. Notice 1.5 and 1.A 20 and 28 pitfalls. By my rough count these statements contain 20 (1.5) and 28 (1.A) ambiguous and undefined words.

1. Like 'resilience', 'exposure', 'ensure', 'significant', 'dimensions'.

2. There is no hope of any 2 people on the planet understanding all such terms as intended by the author (UN).

3. Two 'Fuzzys' (1.5 and 1.A) do not make a Clear Idea (SDG1), (End Poverty).

4. If all (48+) ambiguous terms were somewhere defined, it might help reduce ambiguity.

5. But there is no hint or pointer to such a glossary in the UN material. But there are some glossaries! See later.

6. So everyone is on their own.

7. Dictionary definitions will not be helpful.

2. In a desperate attempt to clarify or define, they specify a few 'measures' (Indicators 1.5.1 etc, and 1.A.1 etc.).

But guess what? Same ambiguity problem! What is a 'disaster'? What are 'resources'?

If there were some UN statistics for these categories, they should be referenced, right here.

1. This is a messy mixture of ends and means, many levels of them.

2. Phrases like 'in order to' [1A] and 'to (end poverty)' [1A] are what I call 'link words'. They link a suggested means (strategy, solution) to a specified end.

3. The situation is that we have not defined 'end poverty' at all.

We have suggested some specific strategies ('mobilization of resources' (1.A), 'predictable means') (1.A) to reach a badly-defined goal ('end poverty').

Premature specification of strategies to solve badly-defined problems, is a bad planning idea.

4. We cannot know if these various nice-sounding ambiguous strategies are cost-effective, because we do not have a clear definition yet of 'end poverty', to judge them by.

UN-Clear Sustainability Goals

A selection of The UN 'Targets' and Indicators for SDG1 (End Poverty)

sustainabledevelopment.un.org

HOME SDGS HLPF STATES SIDS UN SYSTEM STAKEHOLDERS

ABOUT

1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

1.5.1 Number of deaths, missing persons and persons affected by disaster per 100,000 people

1.5.2 Direct disaster economic loss in relation to global gross domestic product (GDP)

1.5.3 Number of countries with national and local disaster risk reduction strategies

1.A Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions

1.A.1 Proportion of resources allocated by the government directly to poverty reduction programmes

1.A.2 Proportion of total government spending on essential services (education, health and social protection)

< 20 Pitfalls

< 28 Pitfalls

Figure 3.2.1 C.

A detailed treatment of 'Goal' 1.5 is in found in the Sustainability Planning book [B9] <https://tinyurl.com/UNGoalsGilb>, page 14, 18, 19, 22, 24, 28, 46-48, 51, 56-59
Including how to redefine it for clarity.
Apologies for the detailed analysis. Feel free to skip it if you are already convinced the goal specification needs a lot of help.

A discussion of Target 1.A will be found in the Sustainability Planning book [B9] <https://tinyurl.com/UNGoalsGilb>, page 33, "Target 1.A Resource Mobilization¹⁷. Analysis "The detail, at left might be worth studying, if you want to learn some tricks of plan analysis.

3.2.8 Specs case: Large Offshore-Built Transportation system

Value Planning Case 8.3: Failure in Supplier Communication: Both Ways

In Spring 2014 we were brought in by an offshore organization that was being paid £100 million per year to build public transport systems.

They were, after 2 years into the project, in **total failure** mode.

We analyzed the situation. Nothing surprising for us. It is so common.

The Customer had written very detailed system requirements. But in fact had no quality standards for clear unambiguous specification. They had no form of Specification Quality Control.

So the usual 100 unintelligible things per page were streaming towards the supplier.

The supplier swallowed these specs, very far offshore. Using about 100 intelligent well-educated engineers, who were fed Garbage In.

They had no direct communication with the customer, their final product, 2 years later, was the reverse communication, Garbage Out.

No quality control on the incoming specs. They just guessed at the meaning, and built an expensive system; the delivered system just did not work when delivered, on thousands of practical details.

The supplier claimed they were doing some kind of faddish cyclical delivery, but obviously, that was to themselves, not to the customer, so that real problems could be not detected a year-or-so earlier.

The supplier's own local tests just *confirmed their local misinterpretations* of the customers woolly specifications.



The supplier top management, we met, actually thought *everything was fine with the customer*. But the project management, in direct contact with the client, was left in no doubt by their customer: there was a catastrophe, from which recovery was, at best, expensive and painful.

The Supplier project manager finally gave up on his own management, and left the company.

We see this miscommunication all the time. But maybe only an independent consultant, not citing names of the parties, will tell what they have seen.

But, let me guess, this is the norm not the exception. There are plenty of studies of failed projects, and the numbers are overwhelmingly negative. Now to be fair, projects were failing long before outsourcing. But outsourcing did not improve the failure statistics.



Figure 3.2.8 Diagram in Value Planning 8.3 [B2]. The Case study in a nutshell.

Specs case: Large Offshore-Built Transportation system 3.2.8

Value Planning **Case 8.3 [B2]: Failure in Supplier Communication: Both Ways**

Here are my observations, conclusions, and advice in this Planning analysis case:

- 1. NO RULES:** There were absolutely no Rules for the specification. Things like unambiguous, complete, were ignored.
- 2. NO QC:** There was no quality control of the specifications as handed over to the offshore supplier. This might have prevented 98% of the defects from reaching the offshore supplier.
- 3. NO FEEDBACK:** There was no communication from the offshore supplier people, reading the plans, to the plan writers. They did not question the meaning or possible interpretation of the plan. They wrote software logic for airport operations, which did not correspond to customer intent, or airport reality. This occurred on a very large volume of specifications. These were classified as software bugs. It did not work. But they were not really 'coding errors'. They were management errors, and planning process errors.
- 4. MANAGEMENT DENIAL:** I sat through a meeting and listened to the offshore supplier director, in the country of the customer, who could have done everything to prevent these problems. He was told clearly by his own middle management (my client) and with evidence, that his customer was extremely upset about the catastrophic high long-term flow of problems. We were there with a plan for how to fix things, with better quality control and better specification. But both of us were amazed that he refused to listen, and denied there was a problem. The middle-manager quit in disgust at his boss' attitude, and saw no hope to get anything done.



5. CUSTOMER PLANNING FAILURE TOO: The customer, building airport systems, could have also solved the problem. They could have trained their own people to plan more clearly. They could have had Rules for clear complete specification. They could have quality control processes to make sure the rules were learned, and followed [R.Intel]. They could have opened up feedback channels with the offshore supplier, so that they could clarify the plan before coding and testing. They totally failed to manage their own planning. We put out feelers to them, to get changes, but it did not happen. There is an interesting problem here of managing all these incompetent managers. I suggest tight feedback loops. Forcing them to manage themselves better.

6. LACK OF QUICK FEEDBACK LOOPS: one problem was that over a year went by from plan specified, until software and system testing revealed it did not work in practice. Just imagine that the loop was shorter, a day or a week. This is generally always possible technically. But many people involved in these systems do not know that, and do not know how to decompose systems, and deliver in agile (fast feedback) increments. The supplier or the customer could have taken control here.



Figure 3.2.8 Diagram in Value Planning 8.3 [B3]. The Case study in a nutshell.

Xxx

Main Current Books Written by Tom Gilb. Supports this book with detail.

B0. **Governeering**: [Leanpub.com/Governeering](https://leanpub.com/Governeering)

A 64 Page pdf book. Aimed at demonstrating with examples how top management can communicate their 'visions' far more clearly.

B1. **Competitive Engineering** (paper or digital 2005).

The definition of the Planguage. A Handbook and a Planguage standard.

<https://www.gilb.com/p/competitive-engineering> (free pdf)

and paper via Amazon (Kindle and paper)

https://www.amazon.com/dp/0750665076/ref=rdr_ext_sb_ti_sims_2

B2. **Value Planning**

"Value Planning. Practical Tools for Clearer Management Communication"

Digital Only Book. 2016-2019, 893 pages, €10

<https://www.gilb.com/store/2W2zCX6z>

This book is aimed at management planning. It is based on the Planguage standards in 'Competitive Engineering' (2005). It contains detailed practical case studies and examples, as well as over 100 basic planning principles.

The 'Technoscopes' book (2018) is a condensed version of this with the 100 principles and some examples or quotes related to the principles.

The 'Vision Engineering' book is. Short (60 pages) top manager oriented overview of the ideas in Value Planning, and it is the front end (the real book) of the Value Planning book.

B3. **Vision Engineering**.

"Value Planning: Top Level Vision Engineering"

How to communicate critical visions and values quantitatively. Using The Planning Language.

<http://concepts.gilb.com/dl926>, and D2D July 2021

B4. **FREE LINK TO 5 NEW DIGITAL BOOKS (B5 to B9) WRITTEN SUMMER 2019**

https://www.dropbox.com/sh/adcrki52xo5zb36/AABMD_2GOX4rT6c-HRCmT-Qua?dl=0

B5. **Value Requirements** book

<https://www.dropbox.com/s/hxg1rx9rzesw2id/Value%20RequirementsPDF%20BEST%20%2070MBQ%20011019%202245%202.pdf?dl=0>

B6. **Value Design**

Book. July 2019

<https://www.dropbox.com/s/ldrofca89sfwzur/Value%20Design%20MASTER%20B2607%20V1408.pdf?dl=0>

B7. **Value Management**, book August 2019

<https://www.dropbox.com/s/7utbgxzcmahfj0c/Value%20Management%20MASTER%20B070819%20V160819.2252.pdf?dl=0>

B8. **Value Agile**, tinyurl.com/ValueAgile

B9. **Sustainability Planning**, <https://tinyurl.com/UNGoalsGilb>

BOOK, See slides **[P2.2]** <http://concepts.gilb.com/dl977>

B10. **KEN: The Knowledge Edu-Neering booklet**

2020. leanpub.com/KEN

The 2018 5 Books, Older Gilb Books

B10. **Life Design**, 2018

LIFE DESIGN Booklet €14

<https://www.gilb.com/store/kCBGcG6L>

B11. **Technoscopes**, 2018

Technoscopes:

Tools for understanding complex projects

<https://www.gilb.com/store/Pd4tqL8s>

Price €14

B12. **Clear Communication**, 2018

B13. **Innovative Creativity**, 2018

‘INNOVATIVE CREATIVITY’ 124 pages €14

<https://www.gilb.com/store/QMMQhn2g>

B14. **100 Practical Planning Principles**, 2018

Based on the same 100 **Value Planning** sub-sections and principles.

100 Practical Planning Principles. Booklet €14

<https://www.gilb.com/store/4vRbzX6X>

B15. **PoSEM 1988, Principles of Software Engineering Management**, 1988, Pearson.

Chapter 15 Deeper Perspectives on Evolutionary Delivery,
www.gilb.com/dl561,

Whole Book (Paper) <https://www.amazon.com/Principles-Software-Engineering-Management-Gilb/dp/0201192462>

B16. **Software Inspection**, 1993,

<https://www.amazon.com/Software-Inspection-Tom-Gilb/dp/0201631814>

B17. **CLEAR COMMUNICATION Booklet**

“Principles of Clear Communication”

By Tom Gilb

DIGITAL BOOKLET €14

Published 31 August 2018

<https://www.gilb.com/store/oJCCxtsM>

Free Downloadable Papers

P1. 'Agile Project Startup Week', gilb.com/dl568

P2. **Confirmit Case** .<http://www.gilb.com/DL32>, 'FROM WATERFALL TO... BY TROND AND TOM GILB

P3.1 Walston, C.E. and Felix, C.P. (1977) **A Method of Programming Measurement and Estimation**. IBM Systems Journal, 16, 54-73. <http://dx.doi.org/10.1147/sj.161.0054>, \$33 Paywall or IEEE., I have a paper copy of this. Tom Gilb, and some of their original data collection schemes they gave me.

P3.2 'Cleanroom Method', developed by IBM's Harlan Mills (IBM SJ No. 4/1980)http://trace.tennessee.edu/cgi/viewcontent.cgi?article=1004&context=utk_harlan

P3.3 Robert E. Quinnan, 'Software Engineering Management Practices' (Part V), IBM Systems Journal, Vol. 19, No. 4, 1980, pp. 466~77, https://trace.tennessee.edu/cgi/viewcontent.cgi?article=1004&context=utk_harlan (Quinnan is at end Part 5)

See also [S7] **Technoscopes: Meet the Challenge of Engineering Complexity**, <http://concepts.gilb.com/dl968> for Quinnan slides as used in Fig 3.2.4

P4. **Full Planguage Concept Glossary**, <http://www.gilb.com/dl830>

See also [B1] Glossary, and GILB.COM SITE GLOSSARY, http://concepts.gilb.com/A?structure=Glossary&page_ref_id=126 the digital glossary by Kai and company, and ValPlan.net, or other variations of glossary info.

P5. **Agile Specification QC**, in Testing Experience 2009, by Tom Gilb, <http://www.gilb.com/DL264>

P6. **Estimation: A Paradigm Shift Toward Dynamic Design-to Cost and Radical Management**

Volume 13 Issue 2 of SQP journal - the March 2011 version. <http://www.gilb.com/DL460>

P7. **Planguage Rules Collection from CE Book.docx**, <http://www.gilb.com/dl829>, 23 pages., See similar set S3

SS Slides by Gilb, Free Downloadable

S1: PPPP: **Proper Public Planning Principles:** 'Engineering Society', Responsibly

SLIDES = <http://concepts.gilb.com/dl980> (pdf) <https://tinyurl.com/PPPPslides>

Video = <https://youtu.be/mlaVLHvQOp0>

S2: 'An Agile Project Startup Week'. <http://www.gilb.com/dl812>

S3. **QC for Design Design Rules from Competitive Engineering**

MASTER.key.pdf GilbFest Slides 2015,

<http://concepts.gilb.com/dl84>, See similar set P7

S4. Most of videos (see below) have a link to their slide set on slide 1.

S5. **"Estimation: A Paradigm Shift Toward Dynamic Design-to Cost and Radical Management"**

Slides made for BCS SPA June 1 2011. <http://www.gilb.com/DL470>

S6. **IBM FSD MILs and Quinnan Slides.** <http://concepts.gilb.com/dl896> (see also P3.1 to .3)

S7. **Technoscopes: Meet the Challenge of Engineering Complexity**

SLIDES= <http://concepts.gilb.com/dl968>. (Several IBM Cleanroom and Quinnan slides here)

VIDEO = https://www.youtube.com/watch?v=920rCFYW3ZQ&list=PLKBhokJ0qd3_wlvr0j85YhmNfNj8ZJ8M-&index=2&t=0s

S8.1 **Using 'Evo' to Rapidly deliver measurable improvements to Aircraft Design Engineering Drawing QC"**

Douglas Aircraft 16 Slides (illustrations missing) Based on cut from paper DL254

<http://www.gilb.com/DL253>

S8.2 DAC Case Paper

"Using 'Evo' to Rapidly deliver measurable improvements to Aircraft Design Engineering Drawing QC"

McDonnell Douglas Aircraft

Gilb Experience Paper for INCOSE 2002

<http://www.gilb.com/DL254>

Boeing data is also here and in slides.

(the slides in DL253 are derived from this paper)

S8.3 **"Real Case Aircraft Company Top Level Decision Making for CAD CAM Support Systems"**

FOR McDonnell Douglas Aircraft

Gilb Experience SLIDES (14)

NICE SET WITH ILLUSTRATIONS

<http://www.gilb.com/DL255>

A good example of analysis of management BS

into Planguage. Reference from Harris for Productivity of Gilb methods.

S8.4 **Boeing Slides, '787'**

March 2008 from Tom and Kai presentation, not sure if on gilb.com, can be supplied by author.. Boeing, Renton studied application of my Inspection methods deeply, and adopted them.

VV Video Talks or Courses by Gilb

Videos with Free Links

V1. PPPP. **Proper Public Planning Principles**: 'Engineering Society', Responsibly

SLIDES = <http://concepts.gilb.com/dl980> (pdf, 230620 VERSION). Origin of much of this book.

Video (90 min.BCS Lecture, 23 June 2020) = <https://youtu.be/mlaVLHvQOp0>

V2. SP. **Sustainability Planning**

<https://tinyurl.com/UNGoalsGilbVideo>

V3. SA. **Sustainability and AI**. Video Podcast 24 mins., Oslo 2019 Aim

<https://www.youtube.com/watch?v=J70zf1gF2b8>

V4. **Technoscopes** BCS SPA 2020

https://www.youtube.com/watch?v=920rCFYW3ZQ&list=PLKBhokJ0qd3_wlvr0j85YhmNfNj8ZJ8M-&index=2&t=0s

V5. VA. **Value Agile** Video. <https://lnkd.in/dkyJpMZ>

V6. VR. **Value Requirements** video 22 April 2020, 3 hours.

https://www.youtube.com/watch?v=ZHrwQtG6IMw&list=PLKBhokJ0qd3_wlvr0j85YhmNfNj8ZJ8M-

V7. VD. Video **Value Design**, May 2020,

https://www.youtube.com/watch?v=y_FaiH5jt6E&list=PLKBhokJ0qd3_wlvr0j85YhmNfNj8ZJ8M-&index=4&t=0s

V8. VM. **Value Management** 2.5 hours, 13 May 2020, BCS <https://www.youtube.com/watch?v=mr9gUFWj4Jg>

V9. QQ. **Quantify the un-quantifiable: Tom Gilb at TEDxTrondheim** 17 minutes.

V10. **Generic** Gilb Videos. Search browser for 'Tom Gilb Videos', and hit the 'Videos' selection too.

V11. **gilb.com** has a large selection of videos, free and paid courses. <https://www.gilb.com/blog?tag=video>

V12. **DOOMSDAY: Is the world doomed because we cannot express our Sustainability and AI Goals**

clearly? TALK (SIMILAR TO V3) <https://youtu.be/BUXVJgWJSMI>, WUD Conference, Katowice, Poland.

Planguage, SOURCES OF PLANS USED AS EXAMPLES IN THIS BOOK

PL1.1 NHS PLANS, EASY READ VERSION <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/01/easy-read-long-term-plan-v2.pdf>

PL1.2 NHS PLANS, FULL PLAN: <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf>

PL1.3. NHS PLANS, TWO PAGE SUMMARY: <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/01/the-nhs-long-term-plan-summary.pdf>

PL2.1 UN Sustainability Goals, <https://www.un.org/sustainabledevelopment/economic-growth/>

PL2.2 Sustainability Planning slides, Gilb, <http://concepts.gilb.com/dl977>, see [V2] video.

PL2.3 SustainableDevelopment.UN.org,

PL2.4 UN Goal 1 Poverty. <https://sdgs.un.org/goals/goal1>

P4. And also ref.S8.3 “**Real Case Aircraft Company Top Level Decision Making for CAD CAM Support Systems”**

FOR McDonnell Douglas Aircraft

Gilb Experience SLIDES (14)

NICE SET WITH ILLUSTRATIONS

<http://www.gilb.com/DL255>

A good example of analysis of management BS

into Planguage. Reference from Harris for Productivity of Gilb methods.

R Other References

R.Intel: R1. INTEL 2011 AND 2013. Practical industrial cases. SQC and Planguage

https://selab.fbk.eu/re11_download/industry/Terzakis.pdf (Slides and experiences)

R.ValPlan: R2. VALPLAN INFO

<https://www.gilb.com/valplan>, actual app is at ValPlan.net

I should declare a personal interest in this company.

(Based on my ideas [B1]. Our company marketing it.

R.GraphMetrix: R3. GraphMetrix.com

I should declare a personal interest in this company.

(Advisory Board, Investor, Using my Ideas [B1].)

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In document click document body to get a text processing layout

If the Document Body checkbox is selected, it's a word-processing document. If not, it's a page layout document.

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