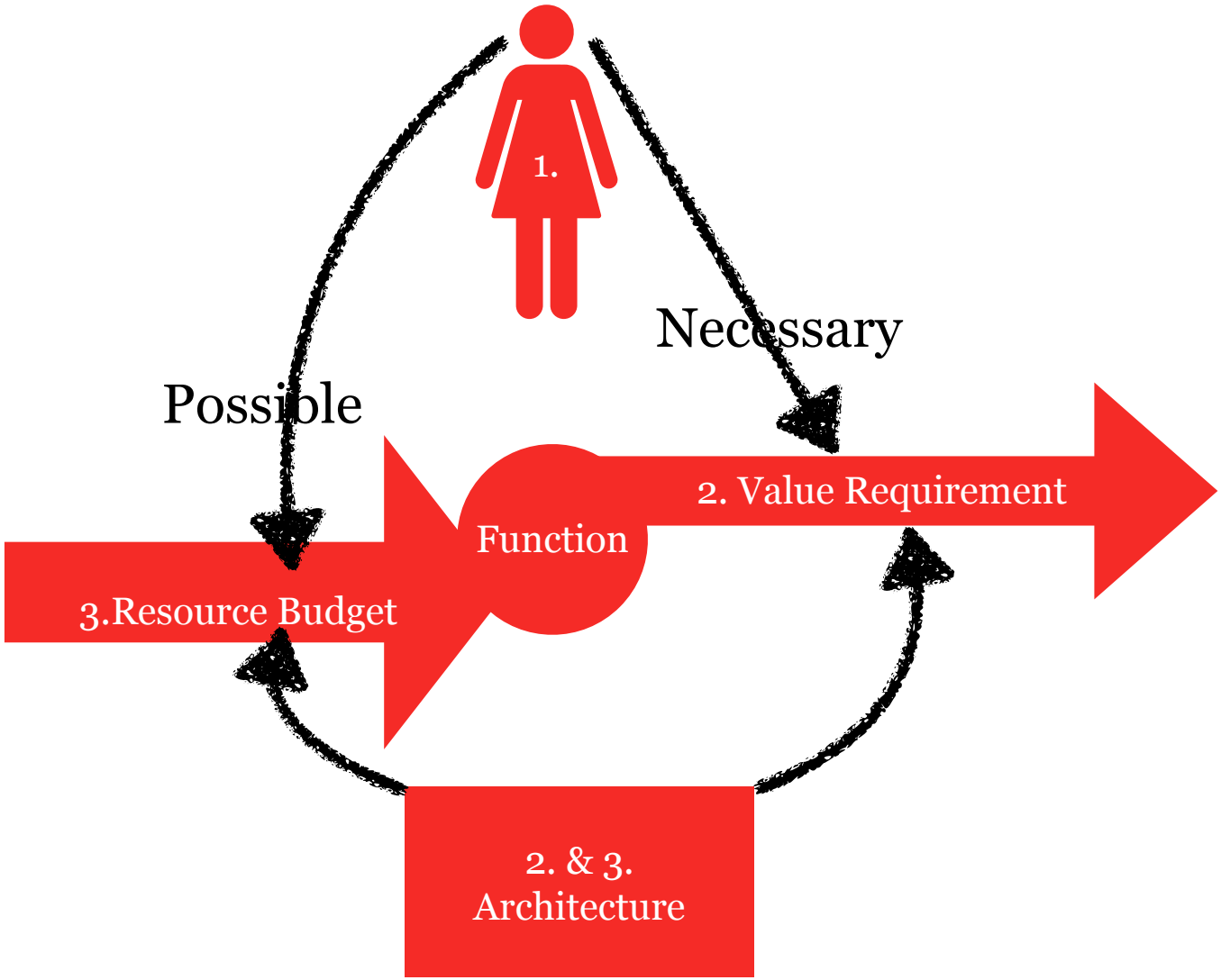
Selected Stakeholder slides Rough Collection

From Tom Gilb Collection
May 19 2018 added Poland Knowledge
MAY 5 2019 ADDED DATA ENGINEERING SLIDES FOR 6MAY
Oct 17 2019 added Loowatt 3 slides
6June 2020 added Stoughton's table from 2015
31Aug2020 added SEA stakeholder diagram


1.
Necessary
Possible
2. Value Requirement
Function
3.Resource Budget
2. & 3.
Architecture

Key stakeholders

Primary user stakeholders

Incubation service owners

Service managers

Incubatees (subjects)

Mentors

Coaches

Access and analysis users

Service investors/funders

Sponsors

Grant providers

Non user beneficiaries

- Angel investors
- VCs

Other stakeholders

- Audiences
- Employees
- Potential employees
- Society
- Environment
- Development agencies
- Economy

AGILIS AI
solving for x

Draft by David Stoughton, for GilbFest 2020, david@value-kinetics.com

Primary stakeholder values – working notes

Value Analysis incubators and accelerators

Stakeholders	Addressable concerns	Met by	Delivered by features	Financial impact	Quantifiable gain	Intangible impact	Concerns	Benefit
Service owners	Profitability/ occupancy	Proof of results over time	Audit trail	Potential higher return from pipeline of applicants	Calculable from business model	Confidence in the future	Concern of exposure outweighs visible success	Forecastable revenue stream
	Visible success	Transparent high performance	Pitch results	Shorter time to investment or commercialisation	Depends whether faster turnover delivers profits	Reputation	"	Higher numbers and quality of applicants
	Fears exposure for poor perfomance	Knowing where to improve	Gap analysis showing where help is needed	"	Lower failure rate repaid if service has shares	Reduced fear of exposure	"	Confidence in methods
Funders/sponsors/ grant providers	The long period before the value of donations is known	Leading indicators of success	Individual and aggregate incubatee assessments	(for service) continued willingness to donate (invest)	(for service) running costs assured	Confidence of continued involvement	Uncertainty about outcome resolved faster	Concern allieviated management time saved
	Tangible evidence of value from donation (or investment)	"	Audit trail	(for service) greater/new willingness to give (invest)	(for service) opportunity to increase funds and improve	Confidence that greater involvement will pay off	Commitment justified or reinforced	Emerging positive story to tell
	Six/seven year wait for results that may expose failure	"	Individual and aggregate incubatee assessments	(for service) continued willingness to donate (invest)	(for service) running costs assured	Confidence of continued involvement	Uncertainty about outcome resolved faster	Concern allieviated management time saved
Service Management	Evidence for performance/ contribution	Visibile progress of individual and aggregate incubatees	Individual and aggregate incubatee assessments	Keeps job may earn bonus	Success bonus	Improved confidence in ability	Initial concern of exposure overcome by visible success	Respect of incubatees, confidence of owners
	Ways to improve poor incubatee performance	Knowing which mentor/coach can help	Gap analysis showing where help is needed	"	"	Ability to improve methods	Confident intervention	Respect of incubatees, confidence of owners
	Fears exposure for poor perfomance	Knowing where to improve	"	"	"	Ability to improve methods	"	Respect of incubatees, confidence of owners
Incubatees	Uncertain whether/how much progress they're making	Progressive proof of achievement	Assured optimal expert feedback and audit trail	Shorter time to investment or commercialisation	Depends on business model and time to market	Confidence that the team is on track	Sense of achievement fostering a will to succeed	Faster commercialisation
	Not knowing where their shortfall in knowledge lies	Clarity sbout which topics and abilities to work on	Gap analysis showing where help is needed	"	"	Confidence they are addressing the right issues	Sense of learning and growing	"
	Concern that mentors and coaches are too specialist	Knowing that mentors are focusing on their weak skills	Gap analysis showing where help is needed	"	"	Confidence they are receiving the appropriate	"	"
Mentors/coaches	Knowing of the limited scope of indivual experience	Synthesising coherent advice from multiple perspectives	Audit trail	More focused use of time	Freed up hours for more productive woek	Increased assurance of adding value		Freed up hours for more productive woek
	Objectively prioritising the most significant shortfalls	Recent reference data indicating problem areas	"	"	"	"		"
	Knowing when the incubatee has absorbed the lesson	Recent data that shows high performance	"	"	"	"		"

Stakeholder Analysis of Value Entities (SAVE. !)

IS AI
ng for x

Draft by David Stoughton, for GilbFest 2020, david@value-kinetics.com

Top 10 stakeholder requirements

1. Library of attributes by domain and context of use to assemble customised rubrics
2. Full scalability of rubric and attribute generation
3. Quality (clarity) of distinctions between scoring levels
4. Minimally distracting interface
5. Scores given by different user groups comparable
6. Gap between assessor and subject score clearly distinguished
7. Real time display refresh
8. Equally usable on all input devices
9. Audit trails maintained
10. Anonymised aggregate results by cohort analysable over time

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solving for x

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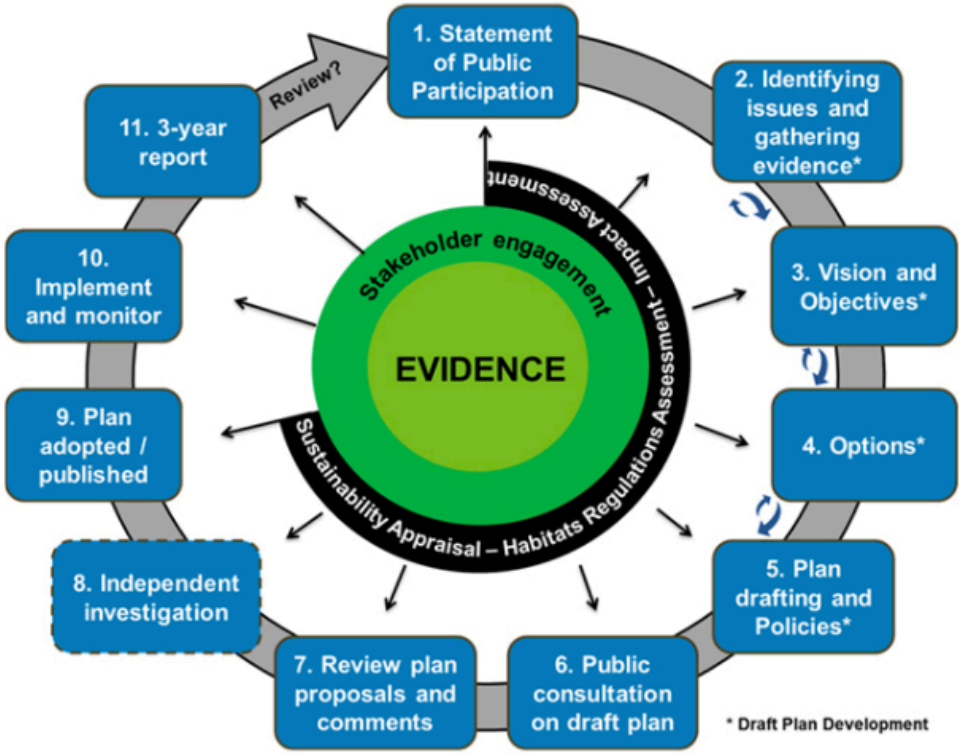
8. STAKEHOLDER MAPPING:
formal specification of acknowledged stakeholders and their acknowledged values is not complete enough, public enough, and connected explicitly enough to the plan.

we cannot easily see which stakeholders have been ignored
we cannot see which stakeholder concerns have been included, and considered.



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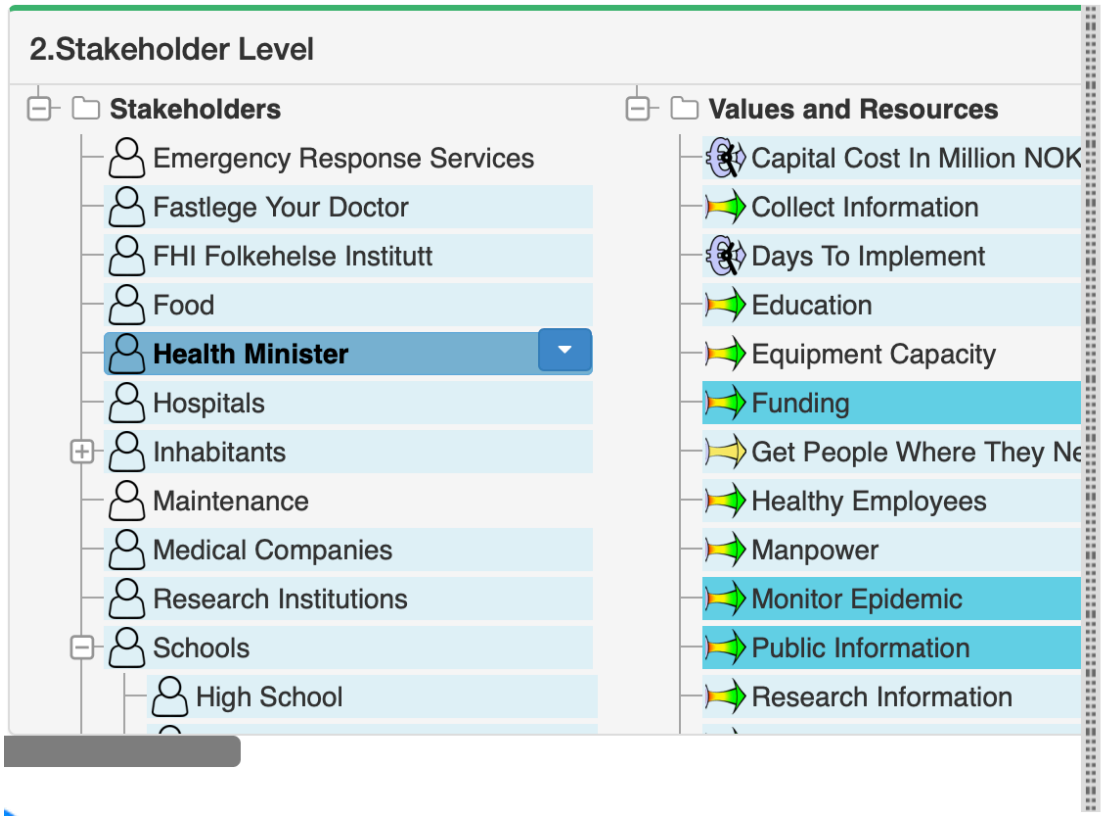
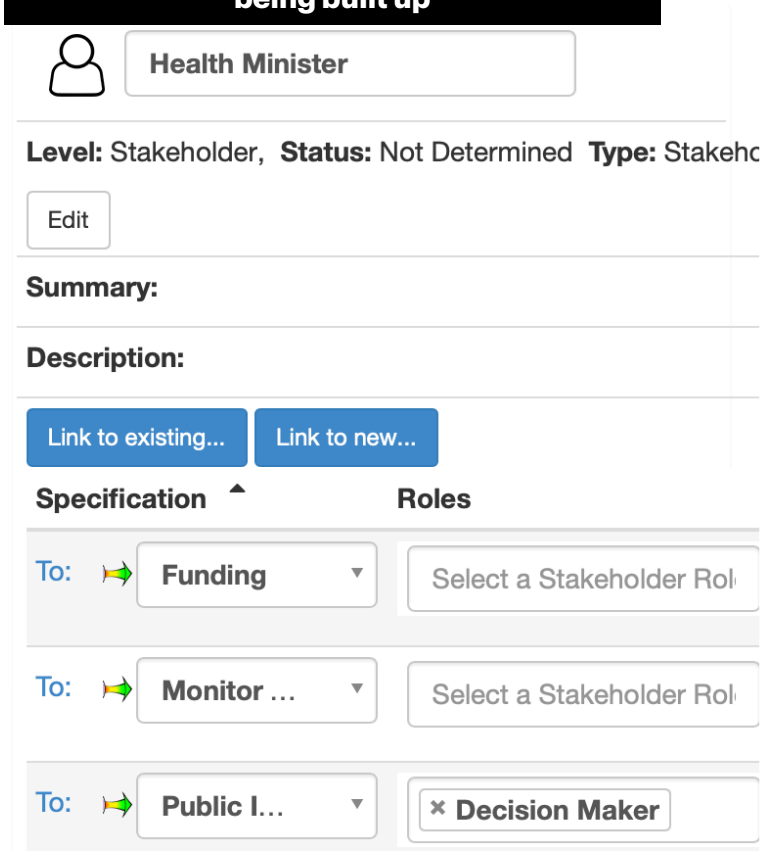
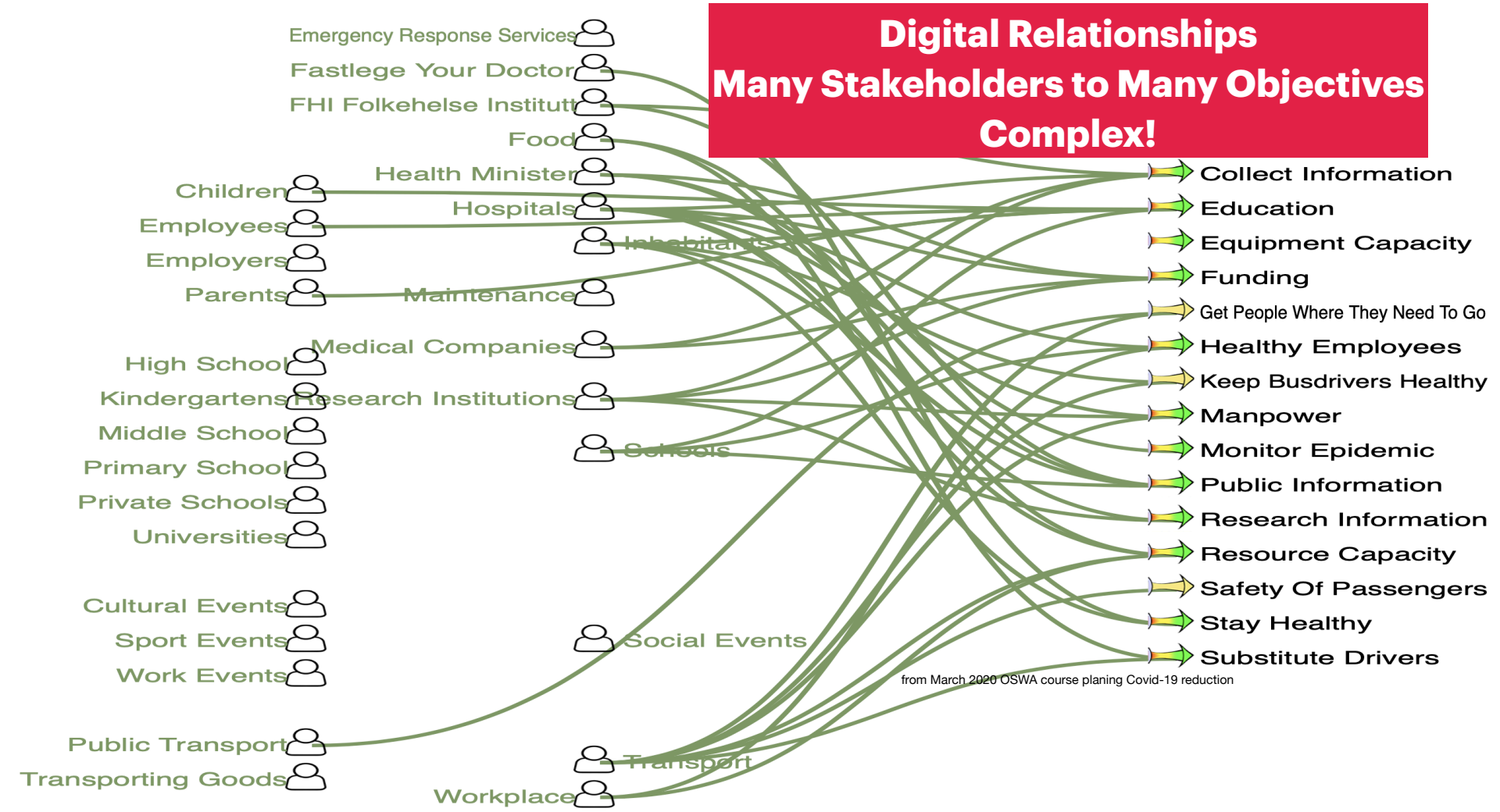
Stakeholder <-> Value Digital relation. Covid-19 Planning

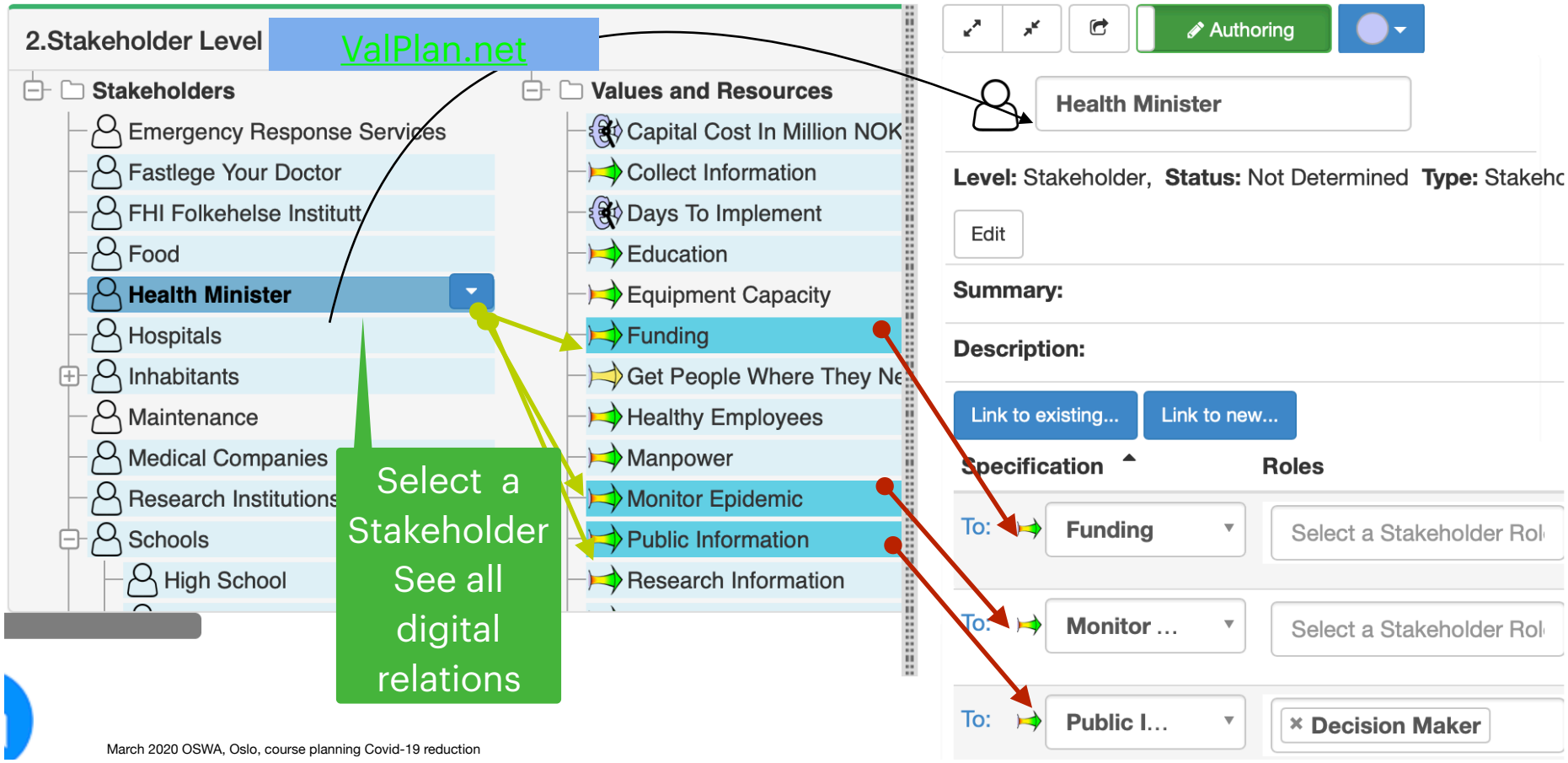


The Planning Object: The Stakeholder Spec, being built up



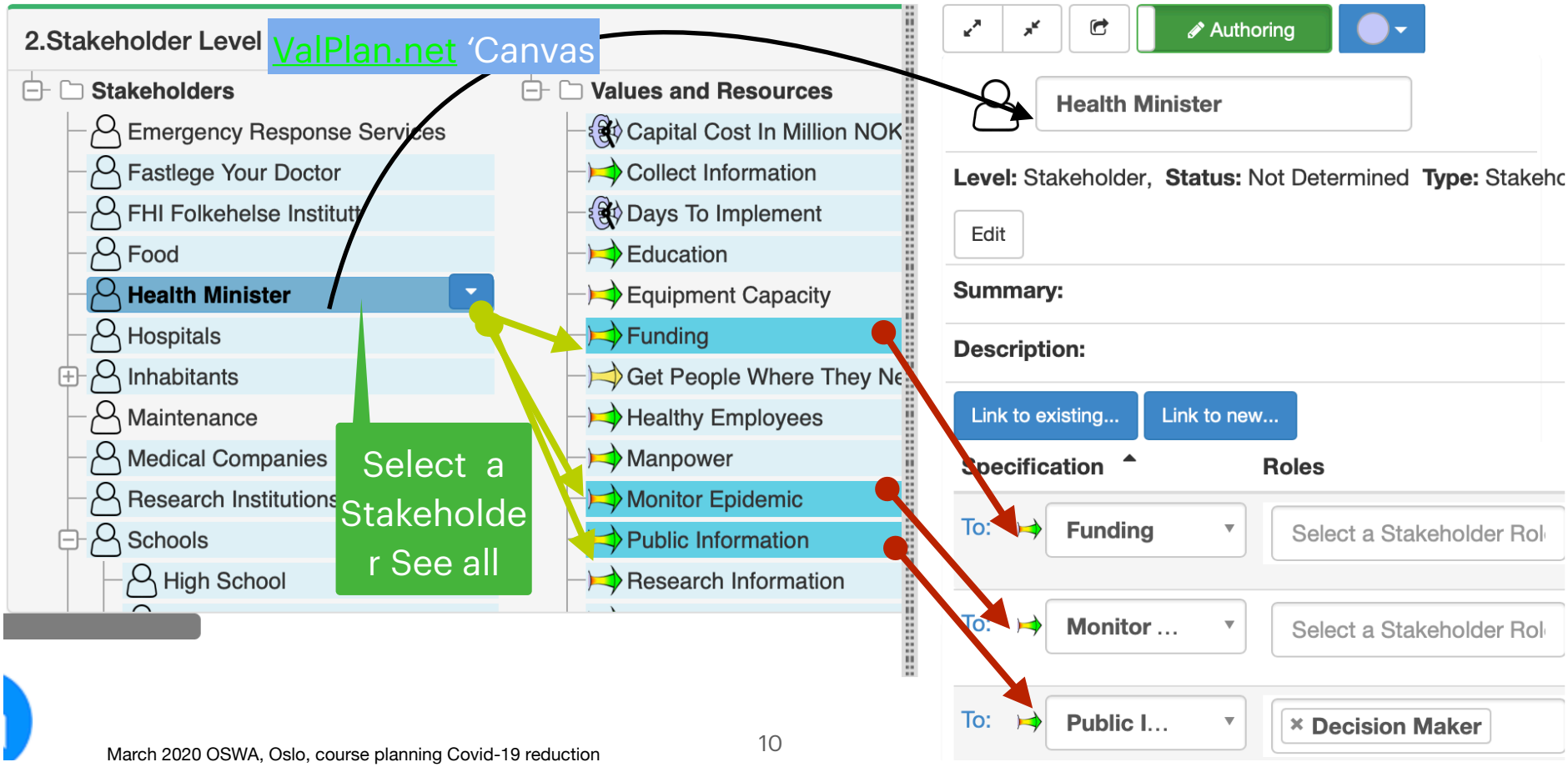

Digital Relationships
Many Stakeholders to Many Objectives
Complex!
Emergency Response Services
Fastlege Your Doctor
FHI Folkehelse Institutt
Food
Health Minister
Hospitals
Inhabitants
Maintenance
Medical Companies
Research Institutions
Schools
Social Events
Transport
Workplace
Children
Employees
Employers
Parents
High School
Kindergartens
Middle School
Primary School
Private Schools
Universities
Cultural Events
Sport Events
Work Events
Public Transport
Transporting Goods
Collect Information
Education
Equipment Capacity
Funding
Get People Where They Need To Go
Healthy Employees
Keep Busdrivers Healthy
Manpower
Monitor Epidemic
Public Information
Research Information
Resource Capacity
Safety Of Passengers
Stay Healthy
Substitute Drivers
from March 2020 OSWA course planing Covid-19 reduction

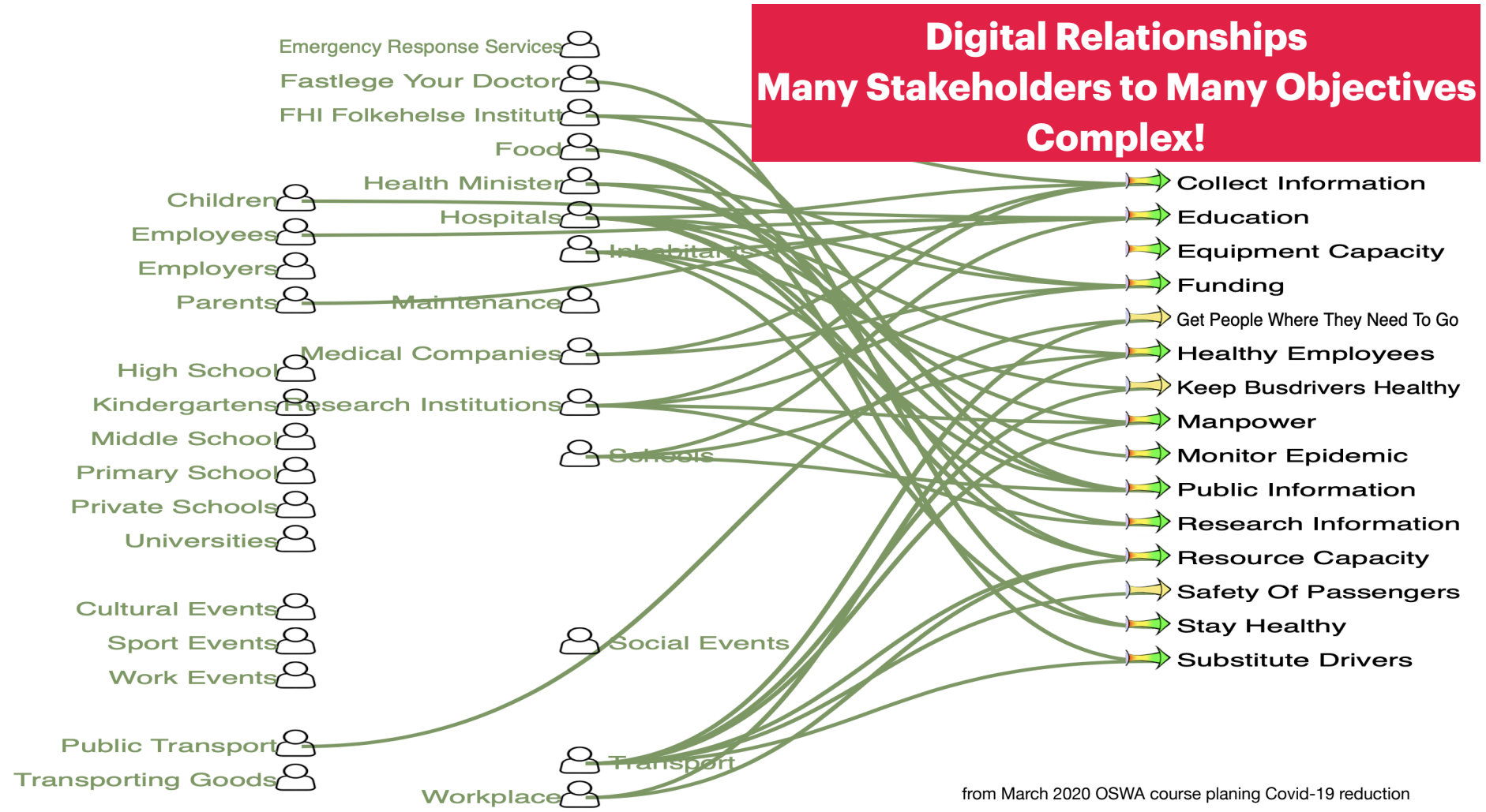
Stakeholder <-> Value Digital relation. Covid-19 Planning



March 2020 OSWA, Oslo, course planning Covid-19 reduction

Stakeholder <-> Value Digital relation. Covid-19 Planning



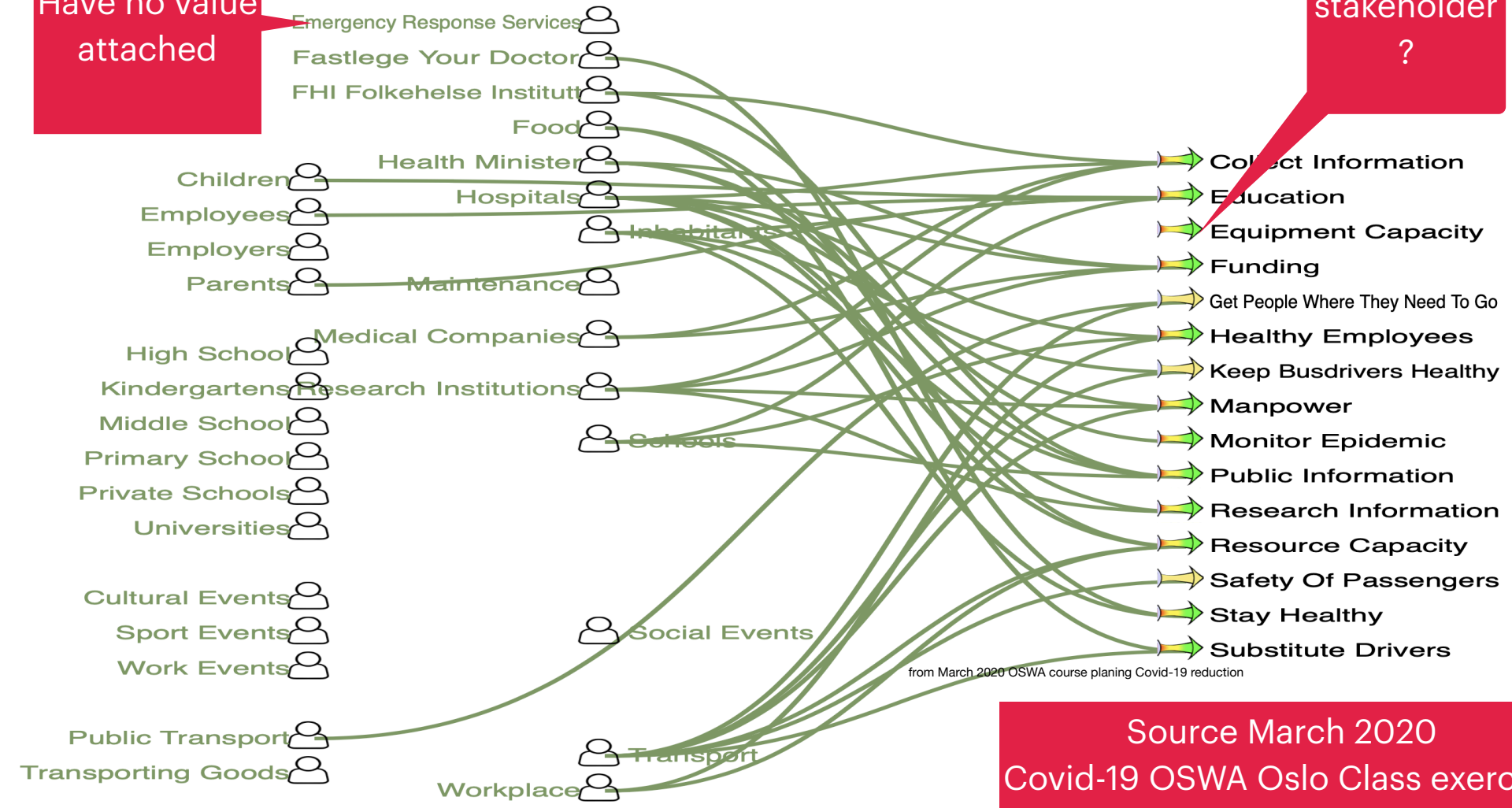


from March 2020 OSWA course planing Covid-19 reduction

Digital Relationships
Many Stakeholders to Many Objectives
Complex!

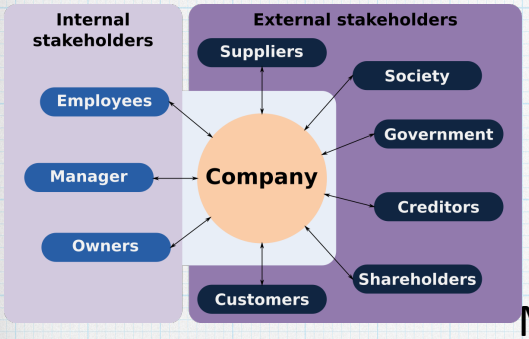
Why does this Stakeholder Have no value attached

Why no stakeholder ?



from March 2020 OSWA course planing Covid-19 reduction

Source March 2020
Covid-19 OSWA Oslo Class exerc



Identify Critical

Stakeholders

Who and what cares about the outcome of our project?

NOT just users and customers

Learn

Stakeholders

Values

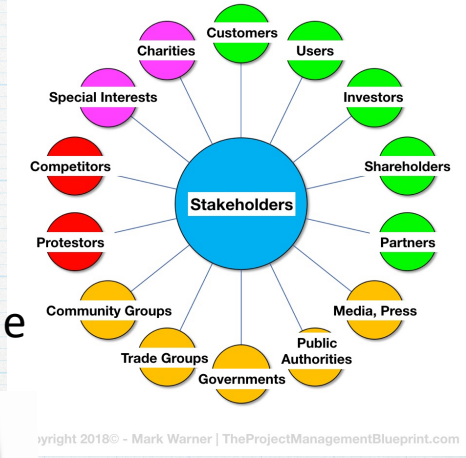
Solutions

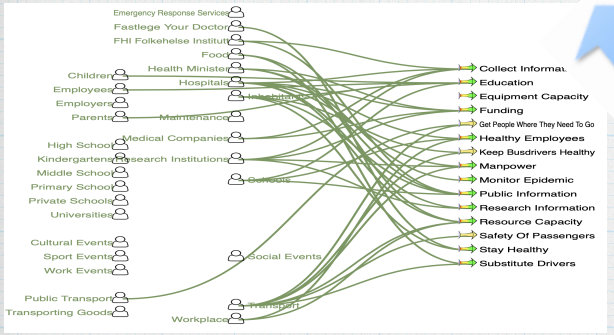
Decompose

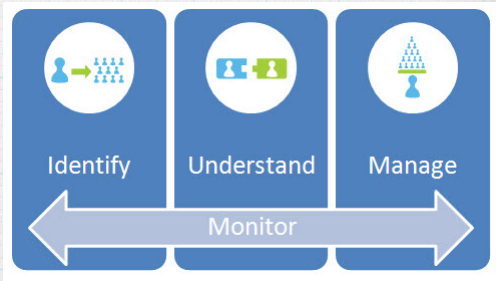
Develop

Deliver

Measure







5 Main Ideas

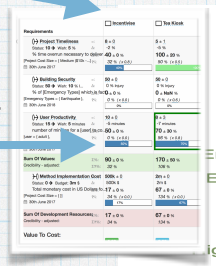
1. Stakeholders determine critical values

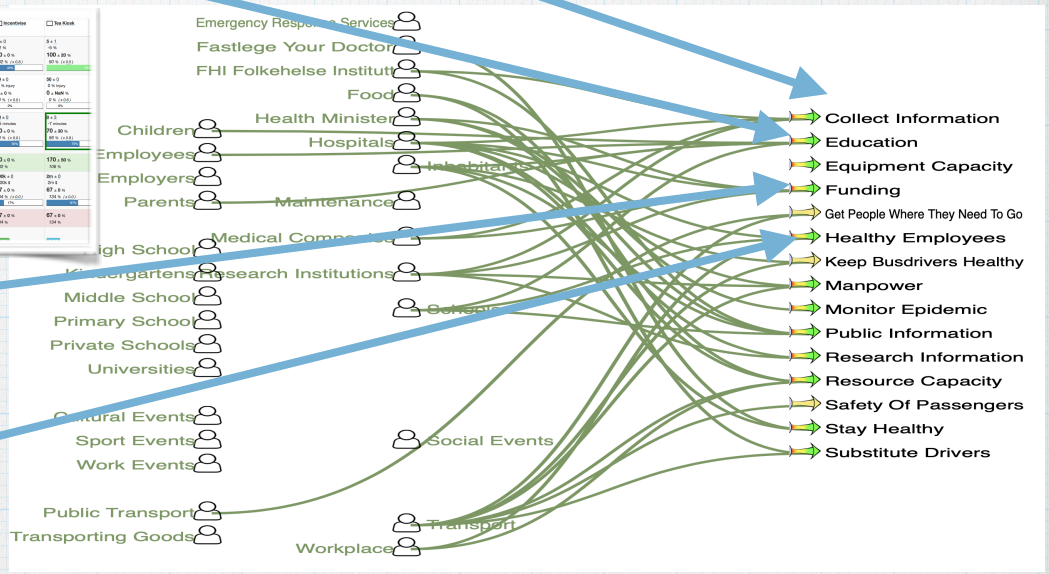
2. All critical values can be expressed as quantitatively as you do time or money

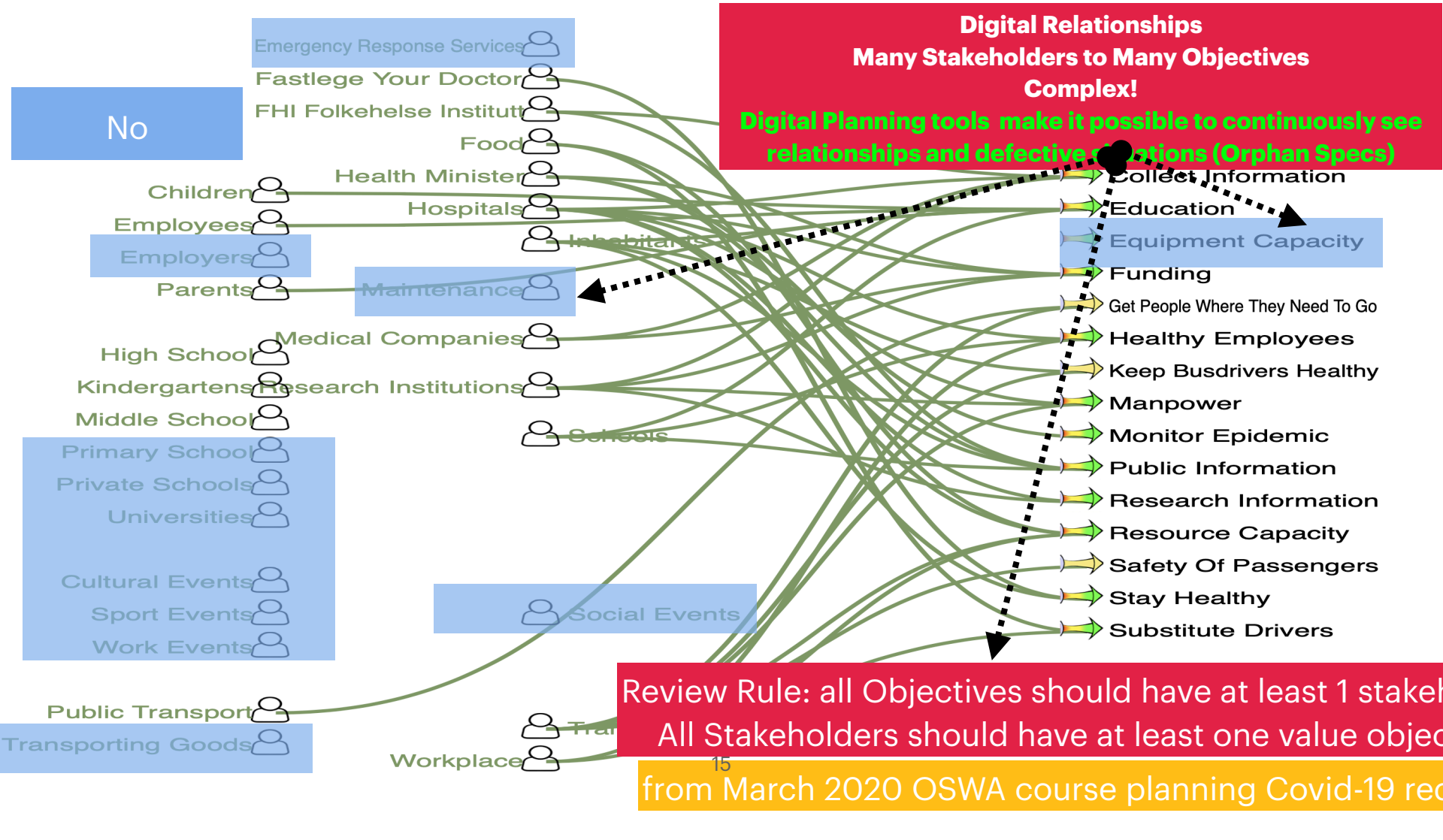
3. All strategies for delivering values can be estimated and measured for value and cost impacts.

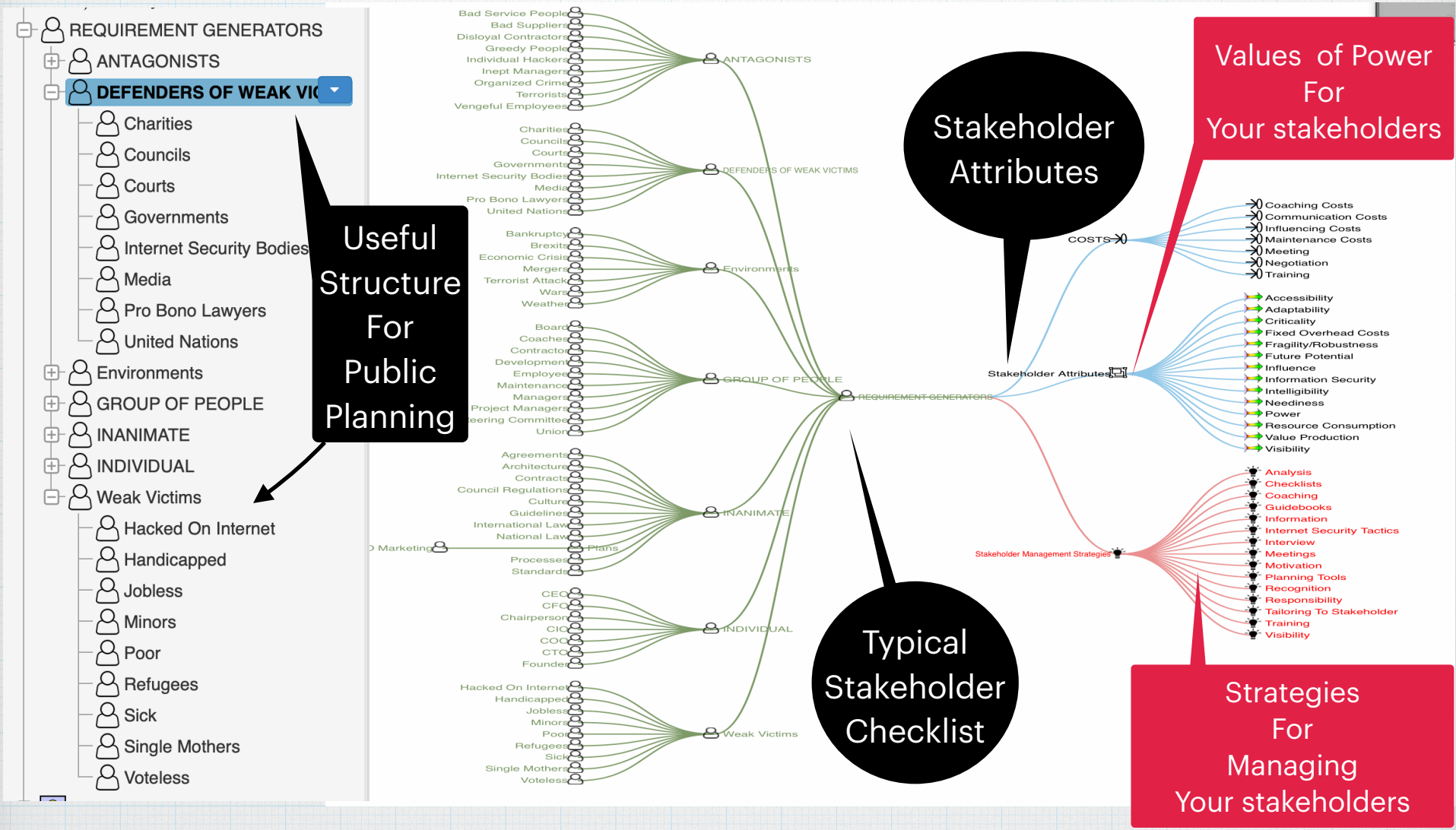
5. Contracting can be based on real incremental delivery of useful value improvements

7. Motivation and responsibility can be value driven






Digital Relationships
Many Stakeholders to Many Objectives
Complex!
Digital Planning tools make it possible to continuously see relationships and defective relations (Orphan Specs)
No
Emergency Response Services
Fastlege Your Doctor
FHI Folkehelse Institutt
Food
Health Minister
Hospitals
Inhabitants
Children
Employees
Employers
Parents
Maintenance
Medical Companies
Research Institutions
Schools
High School
Kindergartens
Middle School
Primary School
Private Schools
Universities
Cultural Events
Sport Events
Work Events
Social Events
Public Transport
Transporting Goods
Workplace
Collect Information
Education
Equipment Capacity
Funding
Get People Where They Need To Go
Healthy Employees
Keep Busdrivers Healthy
Manpower
Monitor Epidemic
Public Information
Research Information
Resource Capacity
Safety Of Passengers
Stay Healthy
Substitute Drivers
Review Rule: all Objectives should have at least 1 stakeh
All Stakeholders should have at least one value objec
from March 2020 OSWA course planning Covid-19 rec


REQUIREMENT GENERATORS
ANTAGONISTS
DEFENDERS OF WEAK VIC
Charities
Councils
Courts
Governments
Internet Security Bodies
Media
Pro Bono Lawyers
United Nations
Environments
GROUP OF PEOPLE
INANIMATE
INDIVIDUAL
Weak Victims
Hacked On Internet
Handicapped
Jobless
Minors
Poor
Refugees
Sick
Single Mothers
Voteless
Useful Structure For Public Planning
Bad Service People
Bad Suppliers
Disloyal Contractors
Greedy People
Individual Hackers
Inept Managers
Organized Crime
Terrorists
Vengeful Employees
ANTAGONISTS
DEFENDERS OF WEAK VICTIMS
Environments
GROUP OF PEOPLE
INANIMATE
INDIVIDUAL
Weak Victims
REQUIREMENT GENERATORS
Stakeholder Attributes
COSTS
Coaching Costs
Communication Costs
Influencing Costs
Maintenance Costs
Meeting
Negotiation
Training
Accessibility
Adaptability
Criticality
Fixed Overhead Costs
Fragility/Robustness
Future Potential
Influence
Information Security
Intelligibility
Neediness
Power
Resource Consumption
Value Production
Visibility
Stakeholder Management Strategies
Analysis
Checklists
Coaching
Guidebooks
Information
Internet Security Tactics
Interview
Meetings
Motivation
Planning Tools
Recognition
Responsibility
Tailoring To Stakeholder
Training
Visibility
Stakeholder Attributes
Values of Power For Your stakeholders
Typical Stakeholder Checklist
Strategies For Managing Your stakeholders

Ten Stakeholder Principles

Stakeholders determine and give priority to their values.
Our planning can prioritise them, or not, depending on higher priorities and limited resources

1. Some stakeholders are more critical to your system than others.

2. Some stakeholder needs are more critical to your system than others.

3. Stakeholders are undisciplined: they may not know all their needs, or know them precisely, or know their value. But they can be analyzed, coached, and helped to get the best possible deal.

4. Stakeholders may be inaccessible, unwilling, inanimate, oppositional, and worse: but we need to deal with them intelligently.

5. Stakeholders might well ask for the wrong thing, a 'means' rather than their real 'ends'. But they can be guided to understand that. Or their requests can be interpreted in their own real best interests.

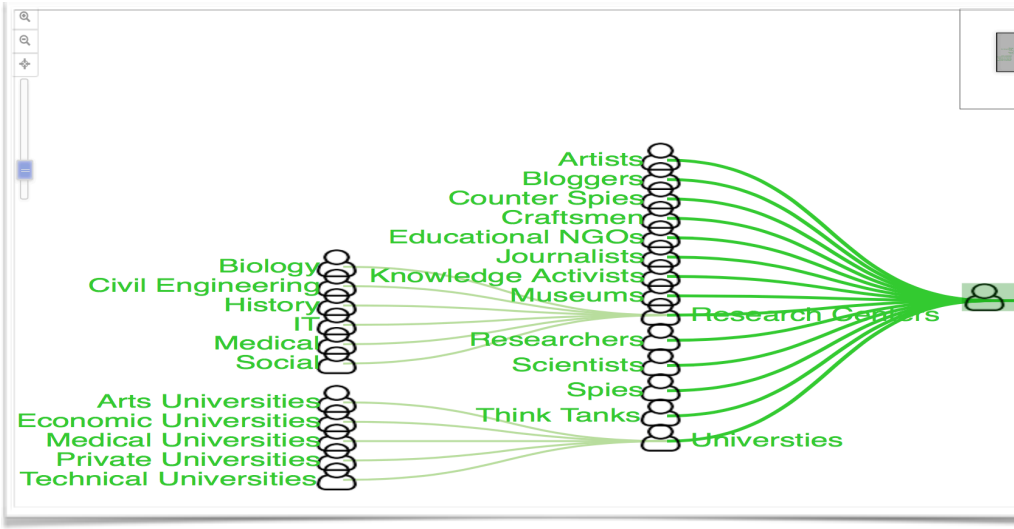
6. Stakeholders do not want to wait years, get delays, invest shitloads of money, and then little or no value. They want as much 'value improvement' of their current situation, as they can get, as fast as they can get it. For as little cost as possible,

7. Stakeholders cannot have any realistic idea of what their needs and demands will cost to satisfy. So their adopted requirements need to be based on value for costs, not on value alone. Delivering small increments, based on high value-to-cost, is one smart way to deal with this.

8. If you think you have found 'all critical stakeholders', I think you should assume there is at least one more, and when you find that one, ... They will emerge, and they are not all there at the beginning.

9. If you think you have found all critical needs of a stakeholder, there will always be at least one more need hiding.

10. If you do not understand, and act on the principles below; you will blame your failure on 'system complexity', and the unexpected and wicked problems. But in reality it is your own fault and responsibility; deal with it - up front and constantly.



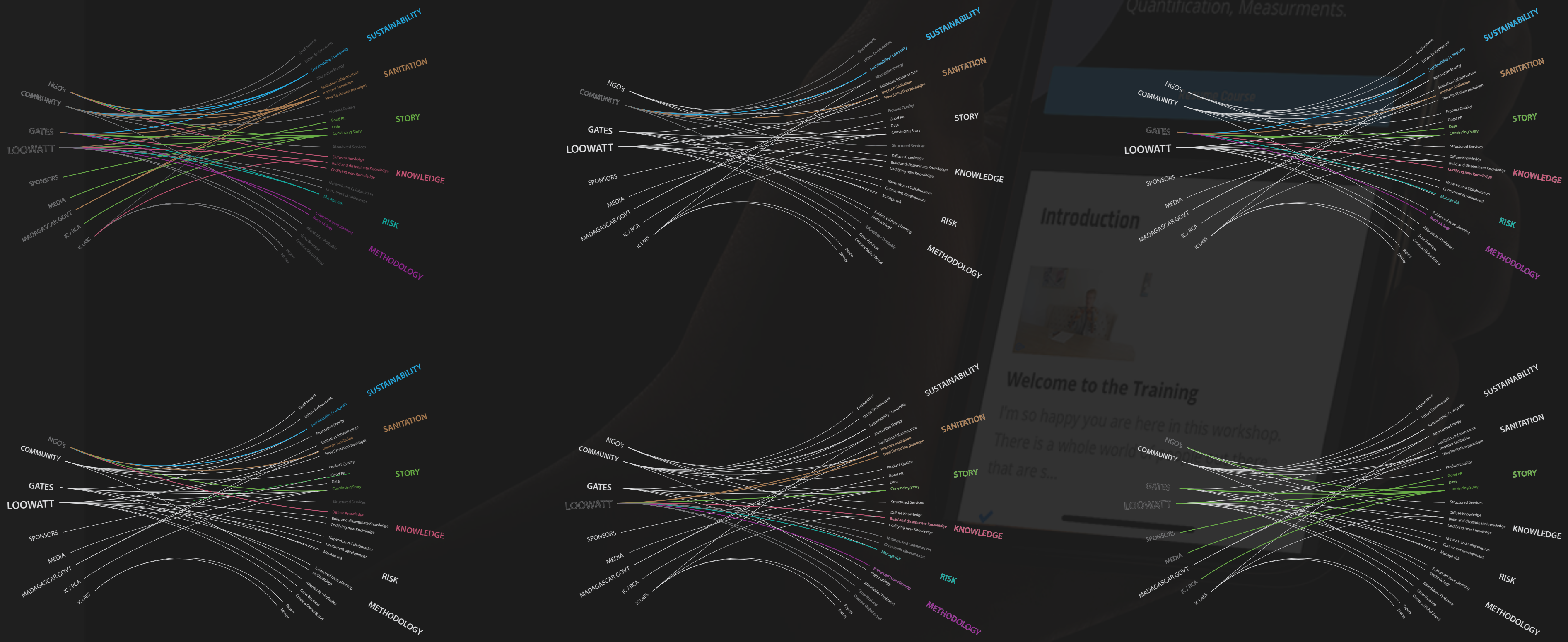
Spreading
Knowledge in Poland
Masterclass Project
May 2018
Katowice

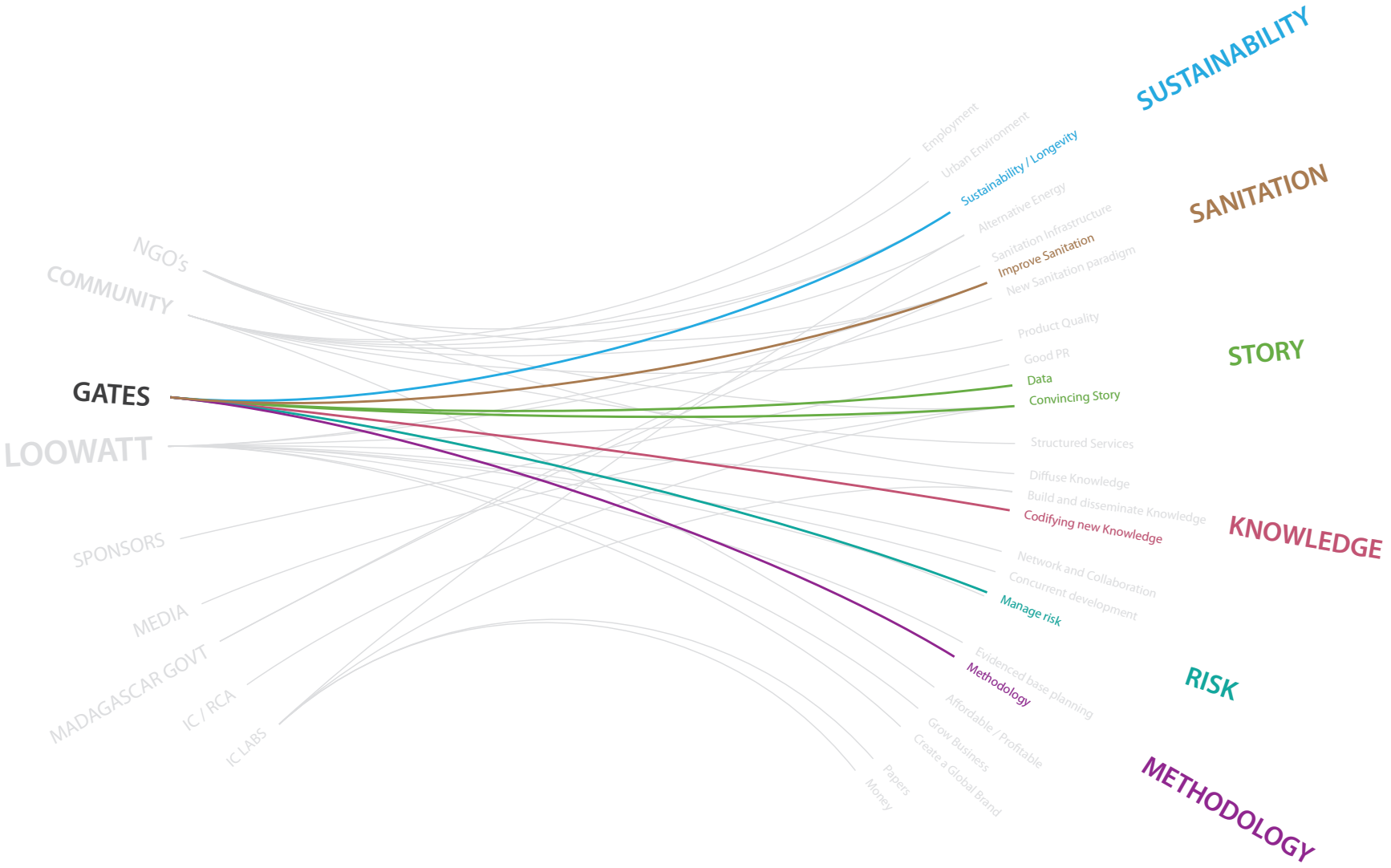
Impact assessment table	Purpose: to assess the current and future commercial importance of stakeholders in a value network.		Current importance is impacted by the introduction of new technology.			Notes
Stakeholder	Stakeholder type		Current importance of stakeholder in value network	Future importance of stakeholder on introduction of new technology	Propensity of stakeholder to change from current to future role in the value network	The scores in this tables are represented by the thickness of the connections between the stakeholders in the value network. The connections are shown in a value network map generated by uploading these two worksheets to kumu.io
Label	Type	Description	Current importance	Future importance	Propensity to change	The headings of the columns in this row are required for the upload to kumu.io
Standards organisation	Certifier		4	4	1	Scoring
eTailer	Retailer		2	3	5	5 = very high importance
Brand owner manufacturer	Brand		5	4	3	4 = high importance
Content processor	Production factory		5	5	4	3 = medium importance
Advertising agencies	Cooms		3	4	4	2 = low importance
Distributor	Distributor		2	3	3	1 = very low importance
Design agency	Agency		2	4	4	The double space between Design and agency in cell A9 inserts a return so the Label appears on two lines in the kumu map.
Health and safety regulator	Certifier		5	5	2	
Content packager	Service provider		5	5	2	
Competitors with different standard	Competitor					
Our brand owner	Parent company					
Equipment manufacturer	Supplier					
Government	Government					
Bulk buyer	Customer					
Factory	Production factory					
Materials processor	Operations					
Producer factory	Production factory					
Media buyers	Communications					
Parts supplier	Supplier					
Supplier	Supplier					
Consumers	Consumer					
Materials recycler	Service provider					
Consumer influence group	Influencer					
Maintenance services	Service provider					
Despatcher	Operations					
Competitors with same standard	Competitor					
Retail brand	Retailer					
Complementary service	Supplier					
Design managers	Operations					
Designers	Communications		4	3	4	
Independent retail outlet	Retailer		2	3	3	
Content producer	Supplier		1	3	4	
Automation services	Supplier		3	4	3	
Materials supplier	Supplier		2	3	2	
Toxic disposal agent	Service provider		2	3	3	
Private label	Brand		3	4	5	
Quality inspector	Certifier		2	3	4	
Brand sales reps	Sales		3	2	4	

authors: Nick Coutts and David Stoughton nick.coutts@axiomode.com david.stoughton@axiomode.com

File Source = Stakeholder value network impact tables 310315

LOOWATT STAKEHOLDER
KEY VALUES

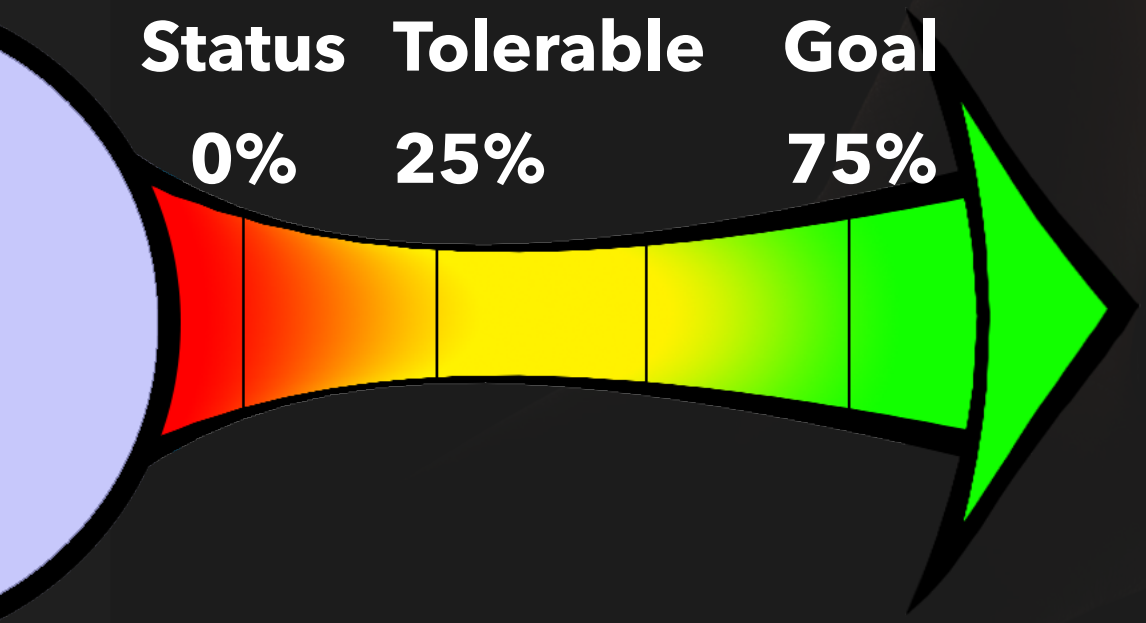



NGO's
COMMUNITY
GATES
LOOWATT
SPONSORS
MEDIA
MADAGASCAR GOVT
IC / RCA
IC LABS
Employment
Urban Environment
Sustainability / Longevity
Alternative Energy
Sanitation Infrastructure
Improve Sanitation
New Sanitation paradigm
Product Quality
Good PR
Data
Convincing Story
Structured Services
Diffuse Knowledge
Build and disseminate Knowledge
Codifying new Knowledge
Network and Collaboration
Concurrent development
Manage risk
Evidenced base planning
Methodology
Affordable / Profitable
Grow Business
Create a Global Brand
Papers
Money
SUSTAINABILITY
SANITATION
STORY
KNOWLEDGE
RISK
METHODOLOGY

Loowatt

Value: Sanitation

Scale: Proportion of expected waste collected per given period of time per user group.



7. Understanding data engineering stakeholders as a source of requirements.

Definition
A stakeholder is any person, group or object, which has some direct or indirect interest in a defined system.

Stakeholders can exercise control over both the immediate system operational characteristics, as well as over long-term system lifecycle considerations (such as portability, lifecycle costs, environmental considerations, and decommissioning of the system). [4]

Notice:

'or object'.

This includes laws, regulations, plans, policies, customs, culture, standards. Inanimate. you cannot ask them or discuss with them. But you can analyze them, their priority, the degree of relevance. They can determine if your system is illegal, or acceptable. Determine success or failure.

The Basic Design Steps Logic: a summary

1. Environment Scope helps identify stakeholders.
2. Stakeholders have values and priorities
3. Values have many dimensions
4. Stakeholders determine value levels
5. Design hypotheses should be powerful and efficient ideas, for satisfying stakeholder needs
6. Design hypotheses can be evaluated quantitatively, with respect to all quantified objectives and resources
7. Designs can be decomposed, to find more efficient design subsets, that can be implemented early
8. Designs can be implemented sequentially, and their value-delivery, and resource costs, measured
9. Designs that unexpectedly threaten achievement of objectives, or excessive use of resources, can be removed or modified.
10. Designs that have the best set of effects on objectives, for the least consumption of limited resources, should generally be selected for early implementation.
11. A design increment can have unacceptable results, in combination with previous increments, and they, or it, might need removal or modification
12. When all objectives are reached, the process of design is complete: except for possible optimization of operational resources, by even-better design.
13. When deadlined and budgeted implementation-resources are used up, it might be reasonable to negotiate additional resources; especially if the incremental values are worth the additional resources.
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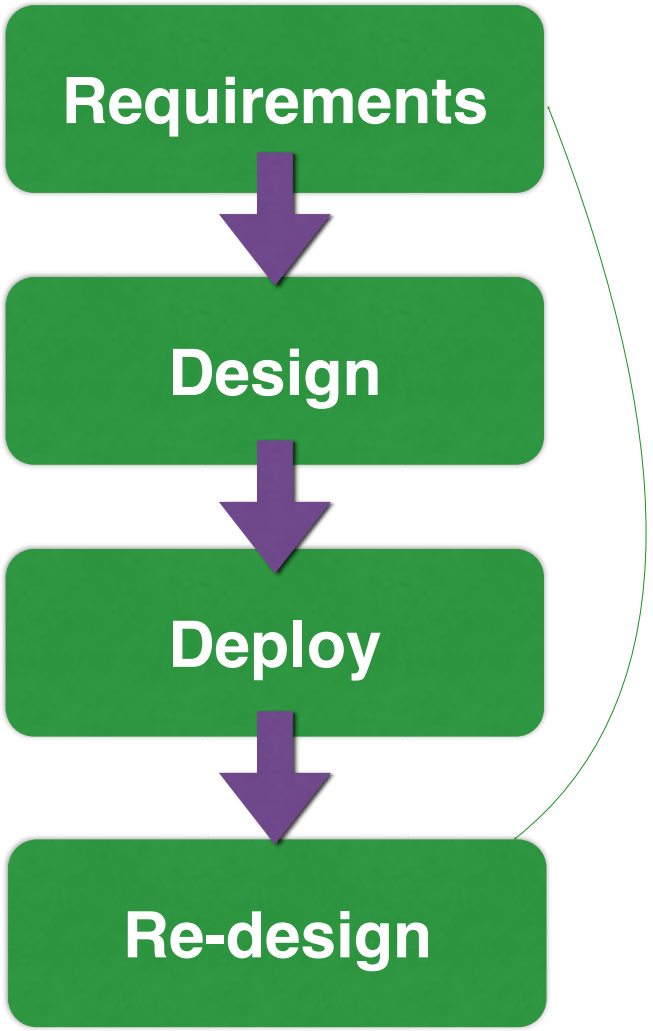

The Logic of Design: Design Process Principles.
Tom Gilb, 2016, Paper.
http://www.gilb.com/dl857

Gilb's Stakeholder Principles.

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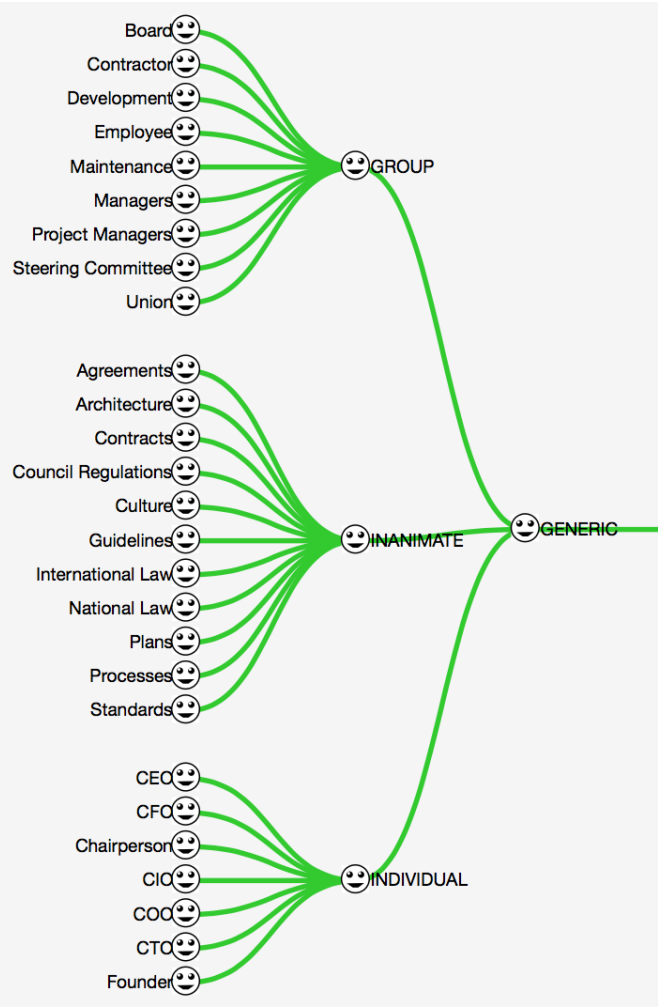
10. If you do not understand, and act on the principles above; you might blame your failure on 'system complexity', and the unexpected and wicked problems. But in reality, it is your own fault and responsibility; deal with it - up front and constantly.

•SOURCE, 2016 Paper
"Stakeholder Power:The Key to Project Failure or Success"
including 10 Stakeholder Principles
http://concepts.gilb.com/dl880 (COPY FEB 2017)
http://concepts.gilb.com/dl872 (FEB 2016)



Ten Stakeholder Principles

1. Some stakeholders are more critical to your system than others.

2. Some stakeholder needs are more critical to your system than others.

3. Stakeholders are undisciplined: they may not know all their needs, or know them precisely, or know their value. But they can be analyzed, coached, and helped to get the best possible deal.

4. Stakeholders may be inaccessible, unwilling, inanimate, oppositional, and worse: but we need to deal with them intelligently.

5. Stakeholders might well ask for the wrong thing, a 'means' rather than their real 'ends'. But they can be guided to understand that. Or their requests can be interpreted in their own real best interests.

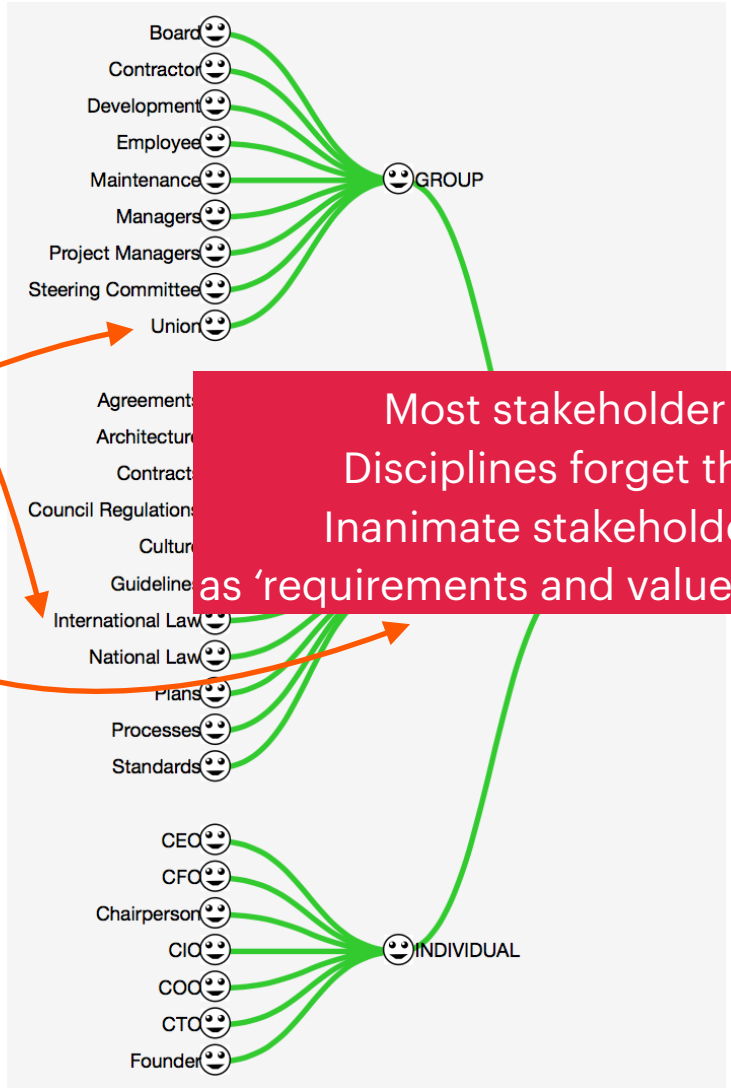
6. Stakeholders do not want to wait years, get delays, invest shitloads of money, and then little or no value. They want as much 'value improvement' of their current situation, as they can get, as fast as they can get it. For as little cost as possible,

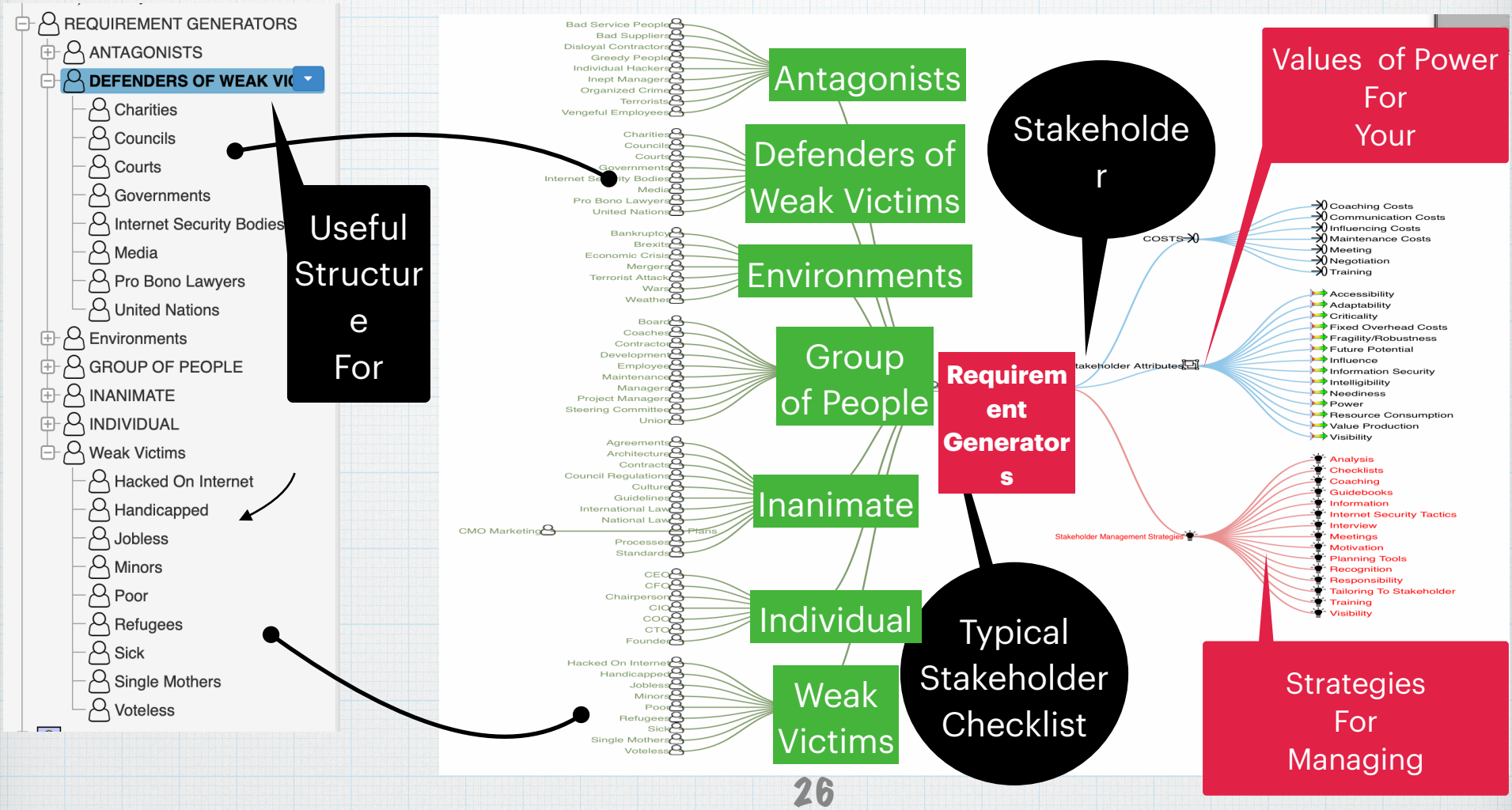
7. Stakeholders cannot have any realistic idea of what their needs and demands will cost to satisfy. So their adopted requirements need to be based on value for costs, not on value alone. Delivering small increments, based on high value-to-cost, is one smart way to deal with this.

8. If you think you have found 'all critical stakeholders', I think you should assume there is at least one more, and when you find that one, ... They will emerge, and they are not all there at the beginning.

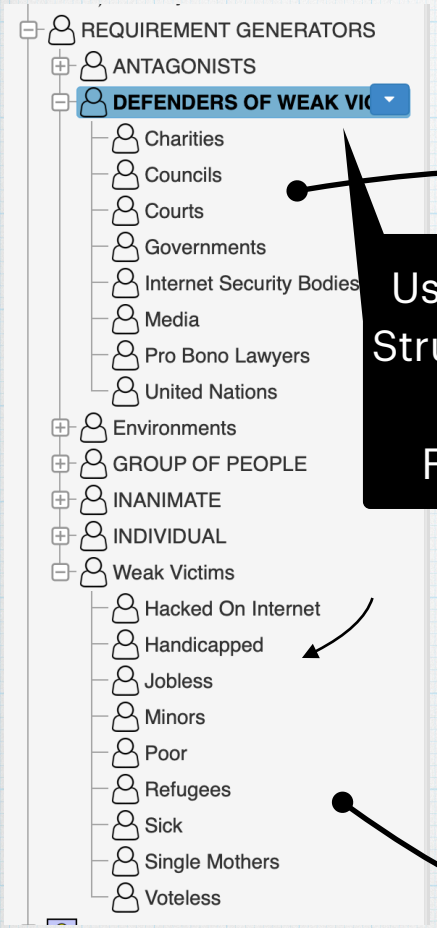
9. If you think you have found all critical needs of a stakeholder, there will always be at least one more need hiding.

10. If you do not understand, and act on the principles below; you will blame your failure on 'system complexity', and the unexpected and wicked problems. But in reality it is your own fault and responsibility; deal with it - up front and constantly.

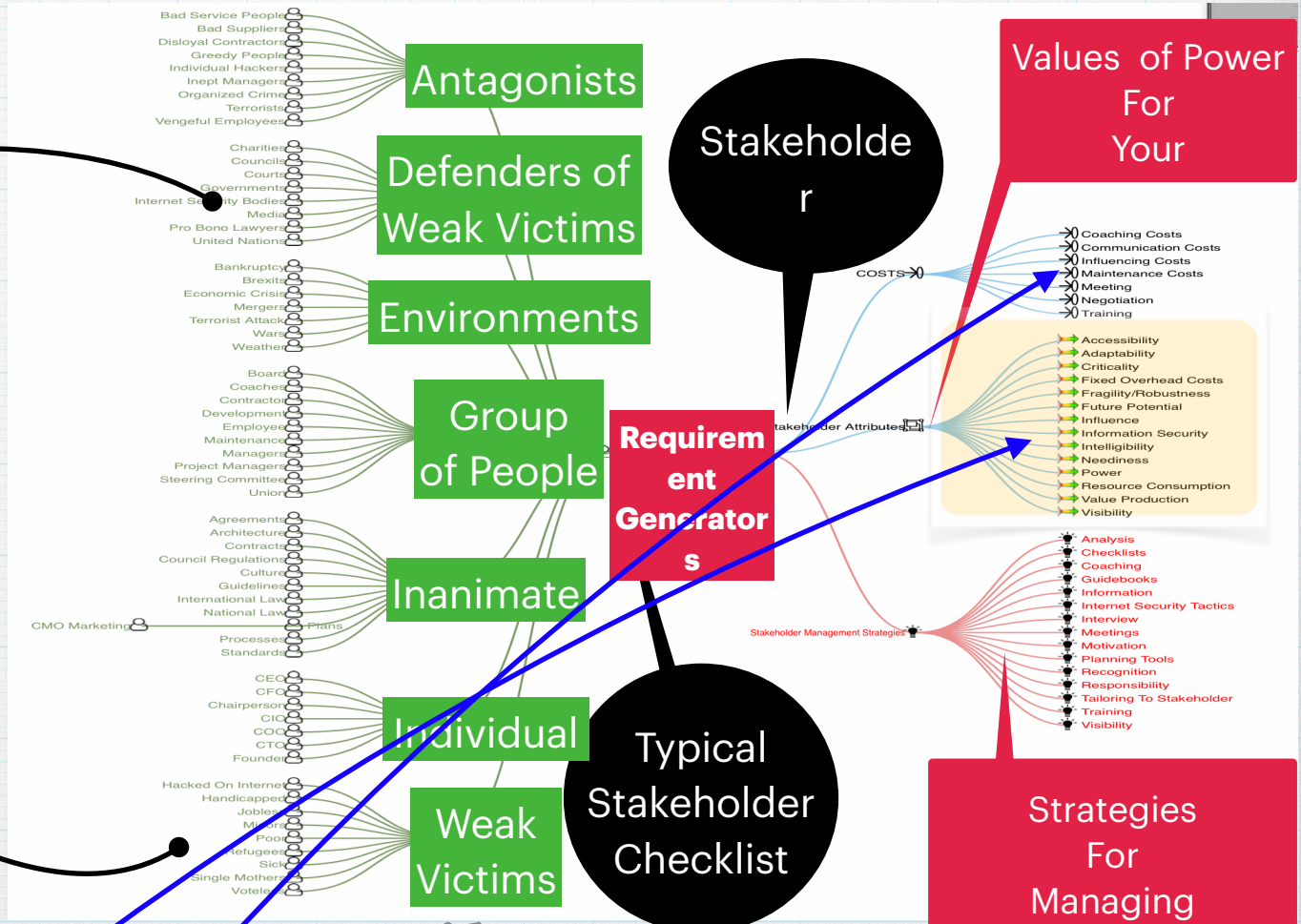




Stakeholder Types: a much richer picture than 'Users'



Useful Structure For



27

Stakeholders each possess a set of attributes and costs. These are valued by the project sponsors, and give priority to the stakeholder

Ten Stakeholder Principles

Stakeholders determine and give priority to their values.
Our planning can prioritise them, or not, depending on higher priorities

1. **Some stakeholders are *more critical* to your system than others.**
2. **Some stakeholder needs are *more critical* to your system than others.**
3. **Stakeholders are *undisciplined*: they may not know all their needs, or know them precisely, or know their value. But they can be analyzed, coached, and helped to get the best possible deal.**
4. **Stakeholders may be *inaccessible*, unwilling, inanimate, oppositional, and worse: but we need to deal with them intelligently.**
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7. **Stakeholders *cannot have any realistic idea of* what their needs and demands will *cost to satisfy*. So their adopted (by you) requirements need to be based on *value for costs*, not on value alone.** Delivering small increments, based on high value-to-cost, is one smart way to deal with this.
8. **If you think you have found 'all critical stakeholders', I think you should assume there is *at least one more*, and when you find that one, ... They will emerge, and they are not all there at the beginning.**
9. **If you think you have found all critical needs of a stakeholder, there will *always be at least one more need*, hiding.**
10. **If you do not understand, and act on the principles above; you will blame your failure on 'system complexity', and the unexpected and wicked problems. But in reality it is *your own fault* and responsibility; deal with it - up front and constantly.**

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May 2018
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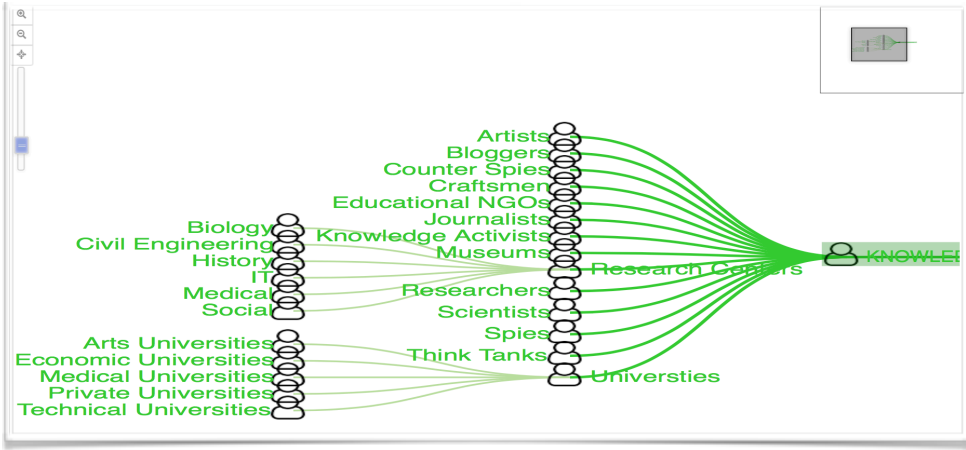
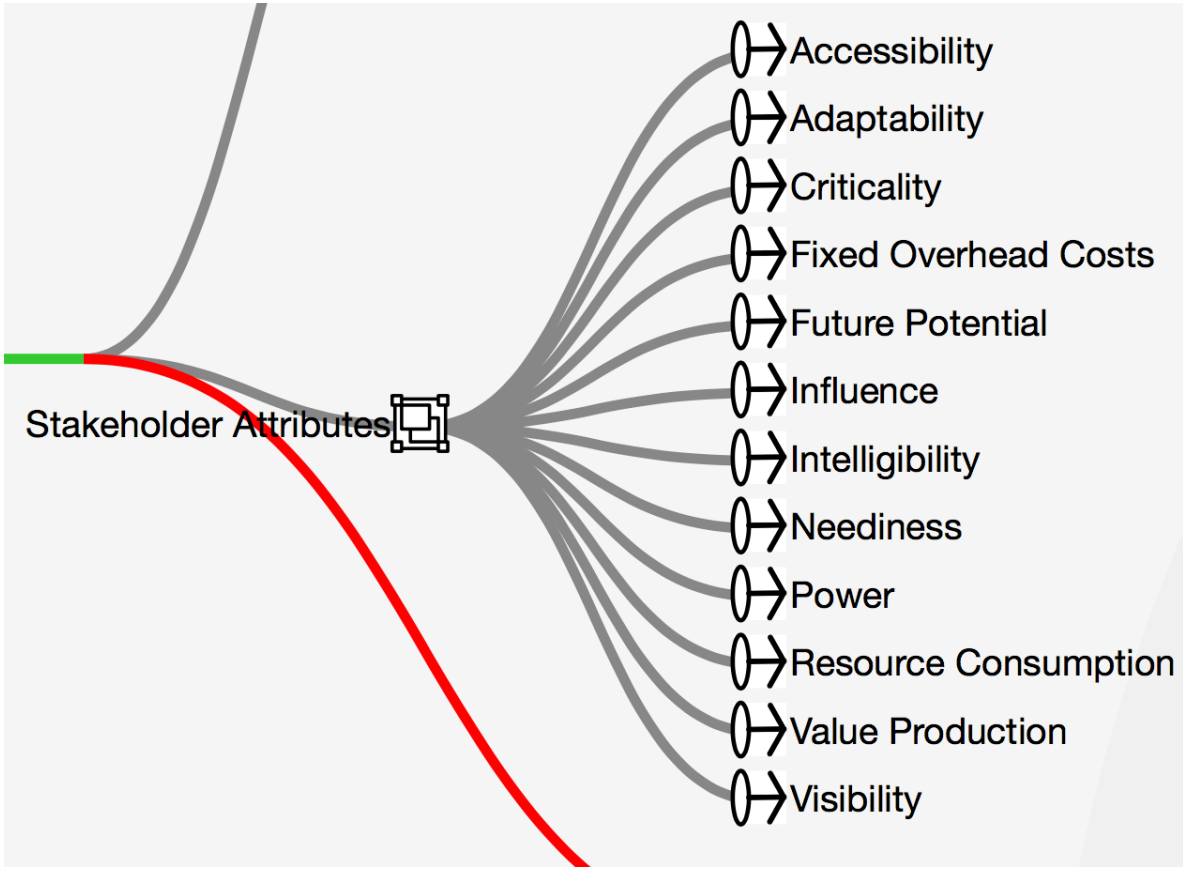


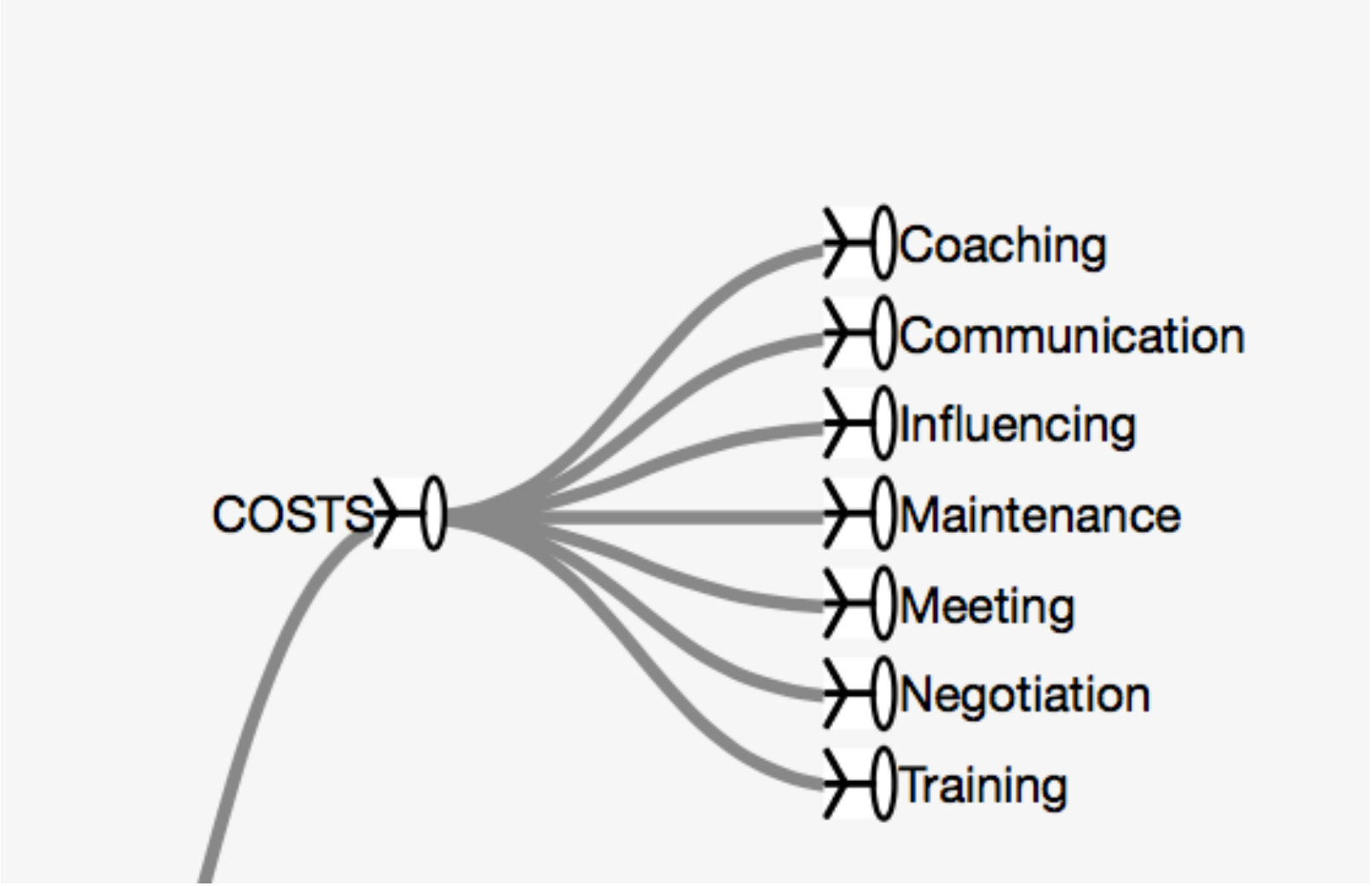
http://www.gilb.com/dl318
Some Stakeholder Slides 2009

Stakeholder Attributes

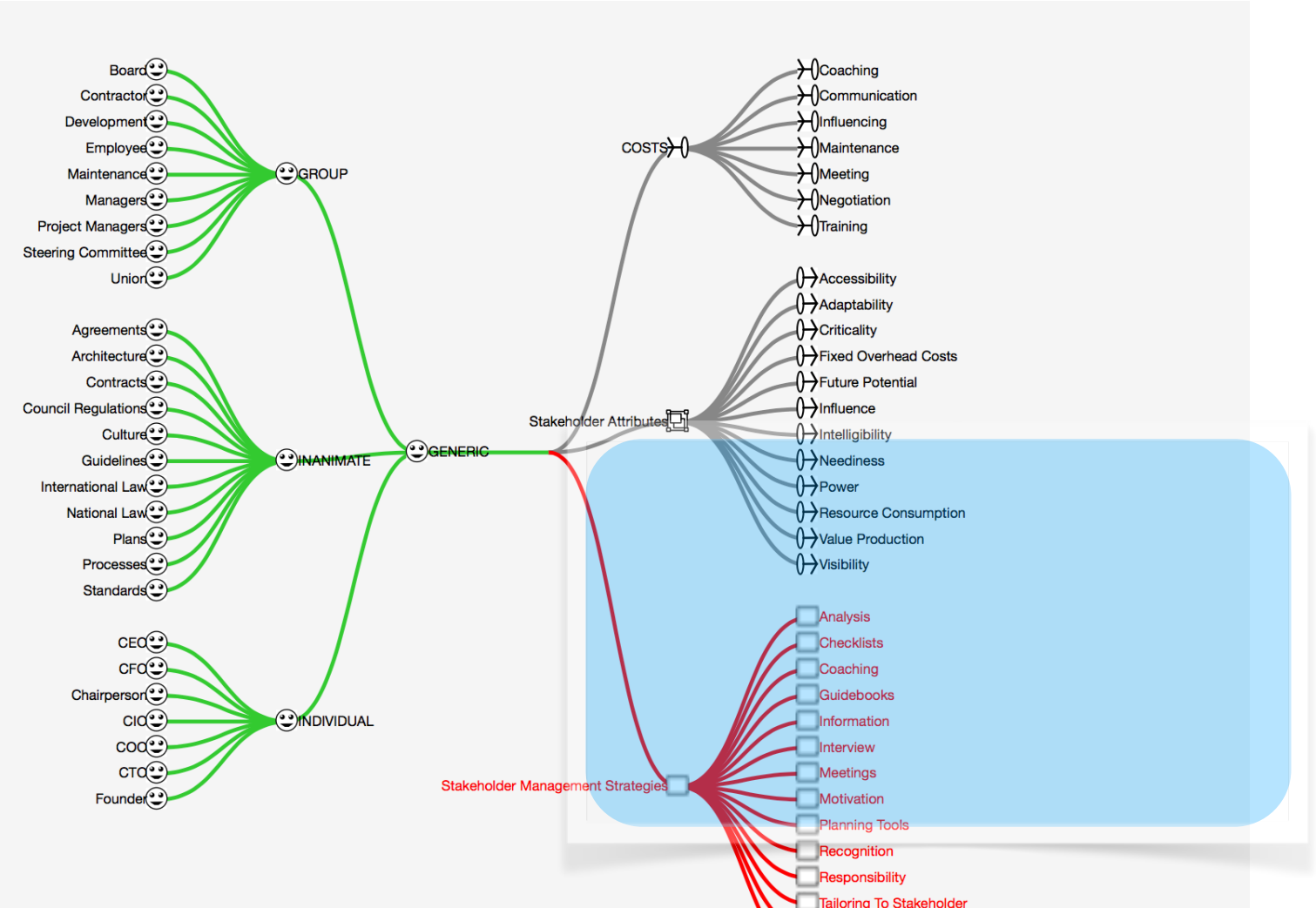
- Some attributes of stakeholders
- which can be defined in more detail,
- and can be quantified
- status estimated
- and potentially *improved*

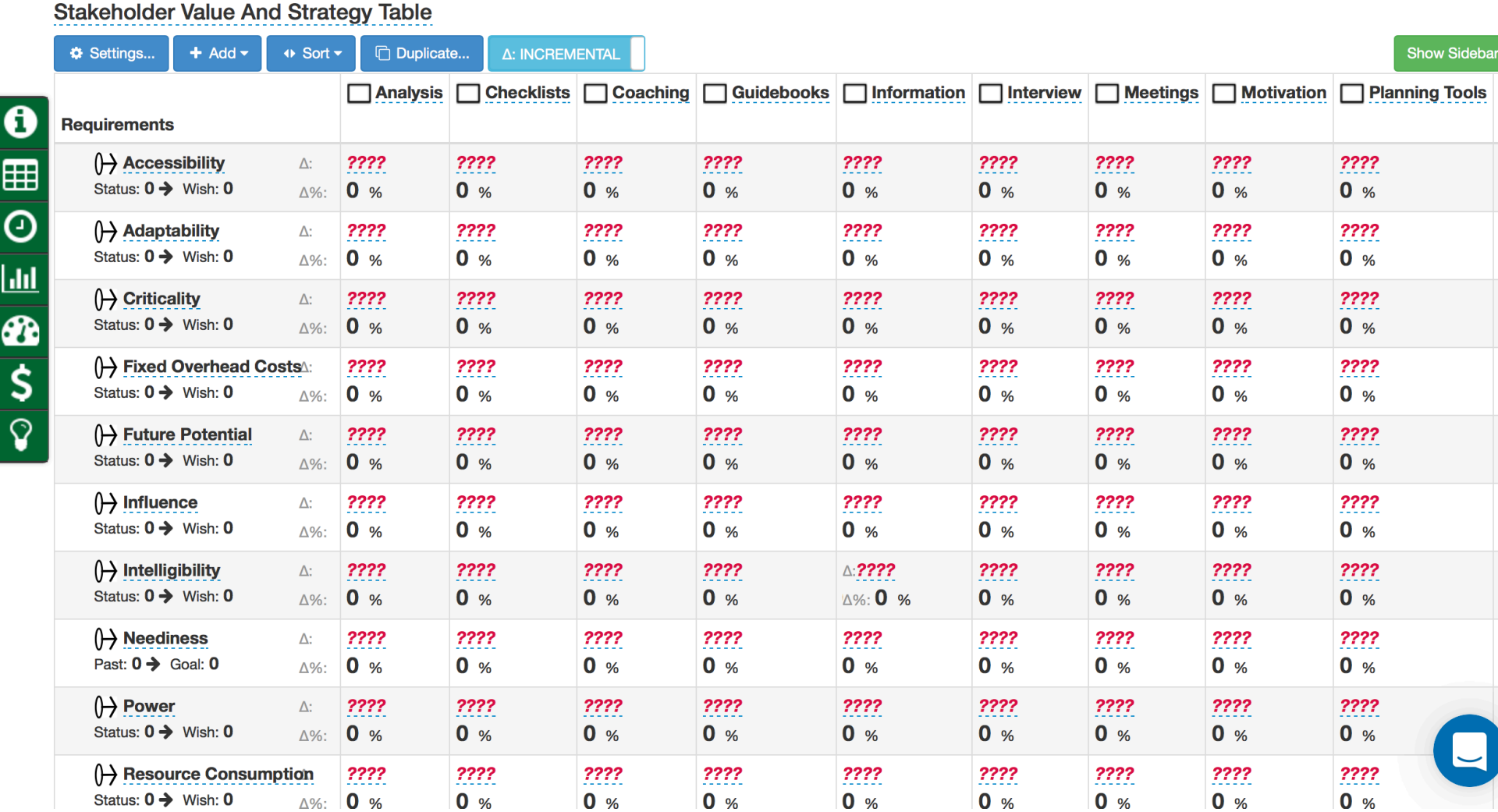


Stakeholder Costs



Adding Strategies for Improving Stakeholder Attributes





Stakeholder Ends and Means

the ???? signifies that we did not yet estimate the effectiveness of the ideas for getting better

Permalink

Row: 0.0.1
Col:

Scale:

Click inside an ir

Analysis

Level? **Solution Idea** ***Label?*** **(by - 20 minutes ago)**

Is Part Of: Stakeholder Management Strategies

Summary: Serious analysis of individual stakeholder types so we can have best possible relations

Description: Change... (by **tomgilb** - 2 minutes ago) 3

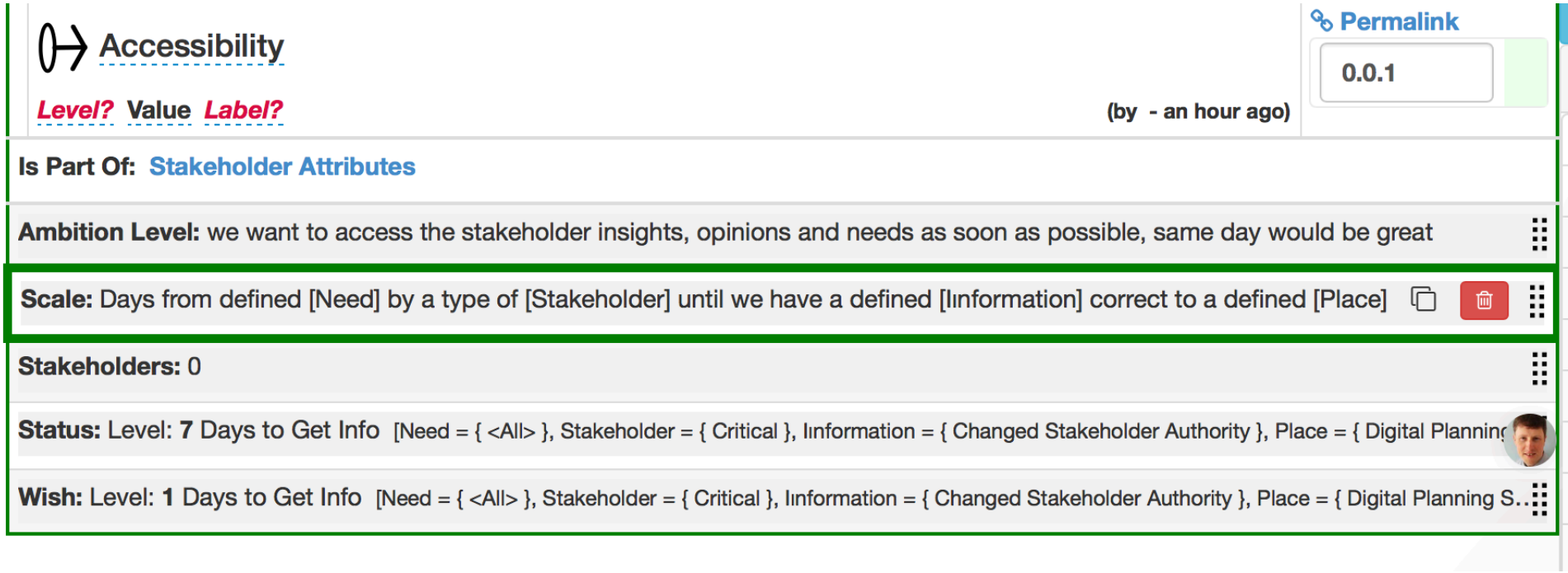
D1. CONVENIENCE:Determine best times and best ways to communicate with stakeholders, and to get decisions. Document this in the stakeholder object in these plans. Make sure responsible spec owners are aware of and use these possibilities.

D2. VALUE LEVELS: Determine the top 5 at least critical needs of each stakeholder type, and each major stakeholder variation (Scale Parameters). Both short term and longer term. Make estimate of the long term value of reaching suggested Goal levels
D3. Communicate, with stakeholder representatives permission, all plan changes that they are a stakeholder to, to at least the Representative Stakeholder.
D4. PLAN ACCESS: Give read access, and change incident access to stakeholder representatives who want it, to the plans.
D5. CONTINUOUS CRITICISM: Create a digital stakeholder steering committee to give advice on all aspects of the plan and the project. They will have access to plans and changes, and ability to both log remarks in a common place in the plan, in comments in particular specs, to communicate with Spec Owners, and to email key named participants and managers or committees.
D6. WARNINGS: Stakeholders have the right, under their signature, in a Comment related to any aspect of the plan, at any time to remark on anything they want; but especially on predicted negative consequences of that part of the plan. The idea is that nobody can suppress such opinions. We encourage it. And it is clear and official that they did try to warn people, perhaps named peopler, who have the right to a Comment Answer, and who cannot deny that these warnings were made.

Source:

tom gilb, trying to give a reasonably good example of deep and powerful strategic planning.

‘Accessibility’ defined quantitatively



‘Adaptability’ Value defined

Adaptability

Level? Value *Label?*

(by - an hour ago)

Permalink

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Is Part Of: Stakeholder Attributes

Ambition Level: give a high degree of stakeholder ability to respond to planning changes, both in seeing consequences, reviewing the..

Scale: % capability for a [Stakeholder Class] to correctly and within 5 minutes of effort do a defined [Stakeholder Action]

Stakeholders: Architecture, Managers, Project Managers, Steering Committee, Union

Status: Level: **30** % Quick Actions [Stakeholder Class = { <All> }, Stakeholder Action = { <All> }] When 24th June 2017

Wish: Level: **90** % Quick Actions [Stakeholder Class = { <All> }, Stakeholder Action = { <All> }] When 24th June 2017

needs&means | Tom Gilb's ... | Create | Specifications... | Value Tables | More...

Tom Gilb's STAKEHOLDER ANALYSIS / Value Tables / Stakeholder Value And Strategy Table

Stakeholder Value And Strategy Table

Settings... | + Add | Sort | Duplicate... | Δ: INCREMENTAL

Requirements		Analysis	Checklists	Coaching	Guidebooks	Information	Interview	Meetings	Mot
Accessibility Status: 7 → Wish: 1 Days to Get	Δ: Δ%:	-6 100 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %
Adaptability Status: 30 → Wish: 90 % Quick Actions	Δ: Δ%:	20 66 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %
Criticality Status: 0 → Wish: 0	Δ: Δ%:	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %
Fixed Overhead Costs Status: 0 → Wish: 0	Δ: Δ%:	???? 0	????	????	????	????	????	????	???
Future Potential Status: 0 → Wish: 0	Δ: Δ%:	?? 0 %	0 %	0 %	0 %	0 %	0 %	0 %	%
Influence Status: 0 → Wish: 0	Δ: Δ%:	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %
Intelligibility Status: 0 → Wish: 0	Δ: Δ%:	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %
Neediness Past: 0 → Goal: 0	Δ: Δ%:	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %	???? 0 %

Known Unknowns

Critical ={Stakeholders, Requirements}

- prioritization tactic

- **Critical Factor Concept *036**
- A critical factor is an attribute level or condition in a system,
- which can on its own,
- determine the success or failure of the system
- under specified conditions.

- We prioritize critical factors like critical stakeholders and their critical requirements
    - until all are satisfied
    - then we should probably stop

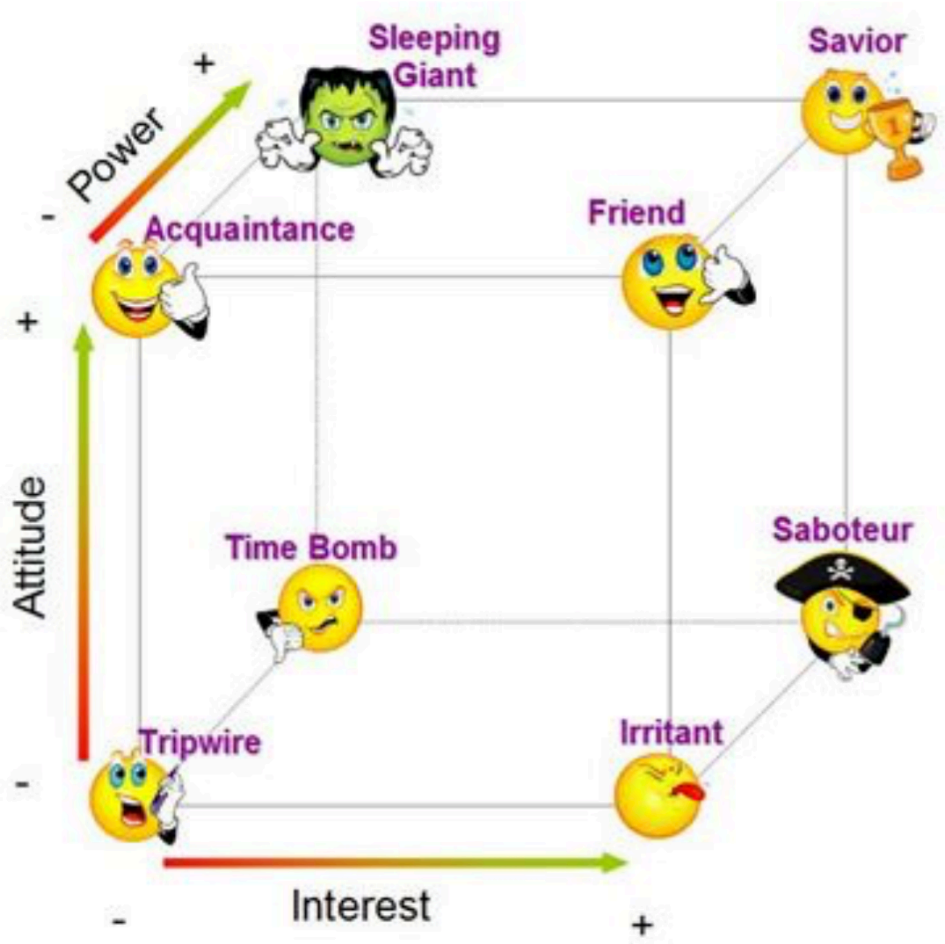
Stakeholder Rights

- Stakeholders should have the
  - **Right to have a voice**
  - **Right to be consulted**
  - **Right to be warned**
  - **Right to suggest**
  - **Right to review**
  - **Right to measure**
  - **Right to complain**
  - **Right to be informed**
  - **Right to change their mind**
  - **Right to understand costs**
  - **Right to understand value/resources**
  - **Right to understand risks**
  - **Right to set their priorities**

https://humanrightsmeasurement.org/methodology/measuring-civil-political-rights/

Stakeholder Power in 3D

- **Stakeholder power is *rarely absolute***
- **Stakeholder power needs to be <u>balanced</u> with all other stakeholders**
- **Stakeholder power will <u>vary</u> through time**
- **Stakeholder power is less relevant <u>when their needs are satisfied</u>**



https://www.brighthubpm.com/project-planning/23481-stakeholder-analysis-spheres-of-influence/

Stakeholder Ethics

- **Stakeholders will have highly varied ethics, and motivations**
- **We can influence stakeholder ethics by a variety of actions**

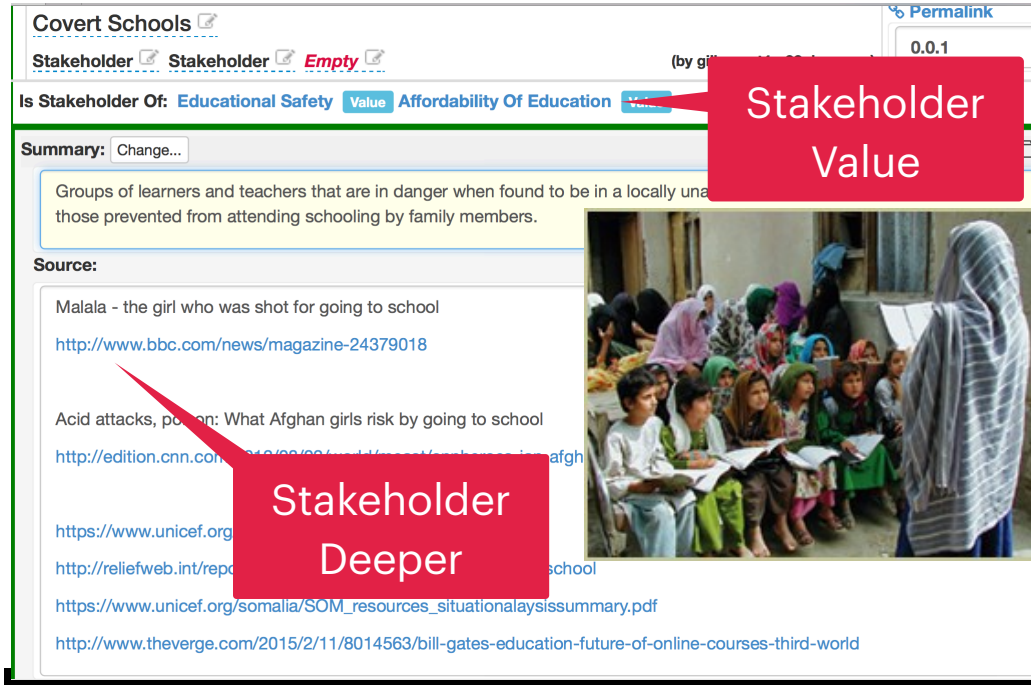
https://www.chuckgallagher.com/2013/04/16/business-ethics-theories-which-theory-of-ethics-do-you-follow-stockholder-stakeholder-and-social-contract-theories-part-one/

Problem 7. PUBLIC ACCESS:
the plans need to be accessible by the press and public, online, in detail.

Access to the details and background?

not just announced as 'here is our strategy'. But with detailed systematic information as to the background, and justifications for suggesting such strategies.

- Some form or summary of most public plans is generally published, and web available to the public.
- The problem is that there is probably a lot of detailed pan detail, and incremental change history which is NOT digitally available.
- And there is rarely any direct reference to its existence
- The problem being that
  - We cannot get the details, to understand the summaries
  - We cannot see the process, or the reasoning, which led to the published plans.

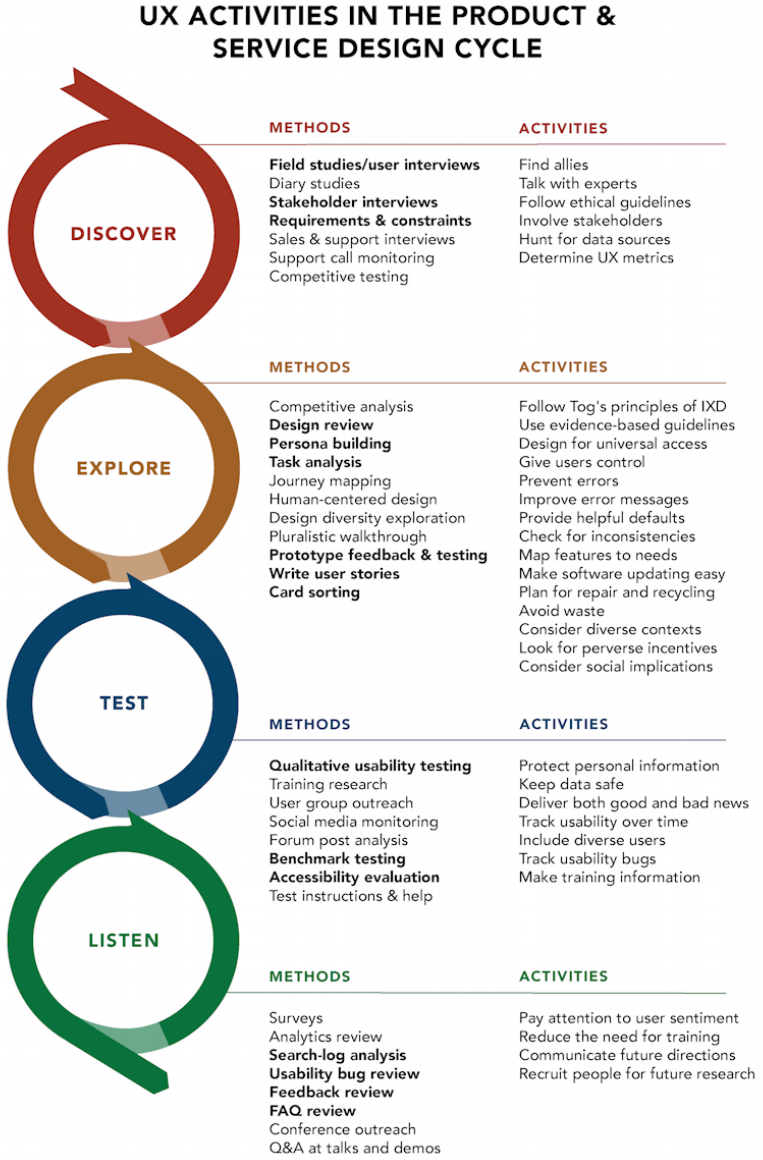


Here is a small sample of the kind of detail
We could be missing, if the entire planning is not made available to the public
From a digital database.

41 **In this case we have a formally defined stakeholder,**
not just their name, and a set of URL links to go deeper into the
Background of that stakeholder.

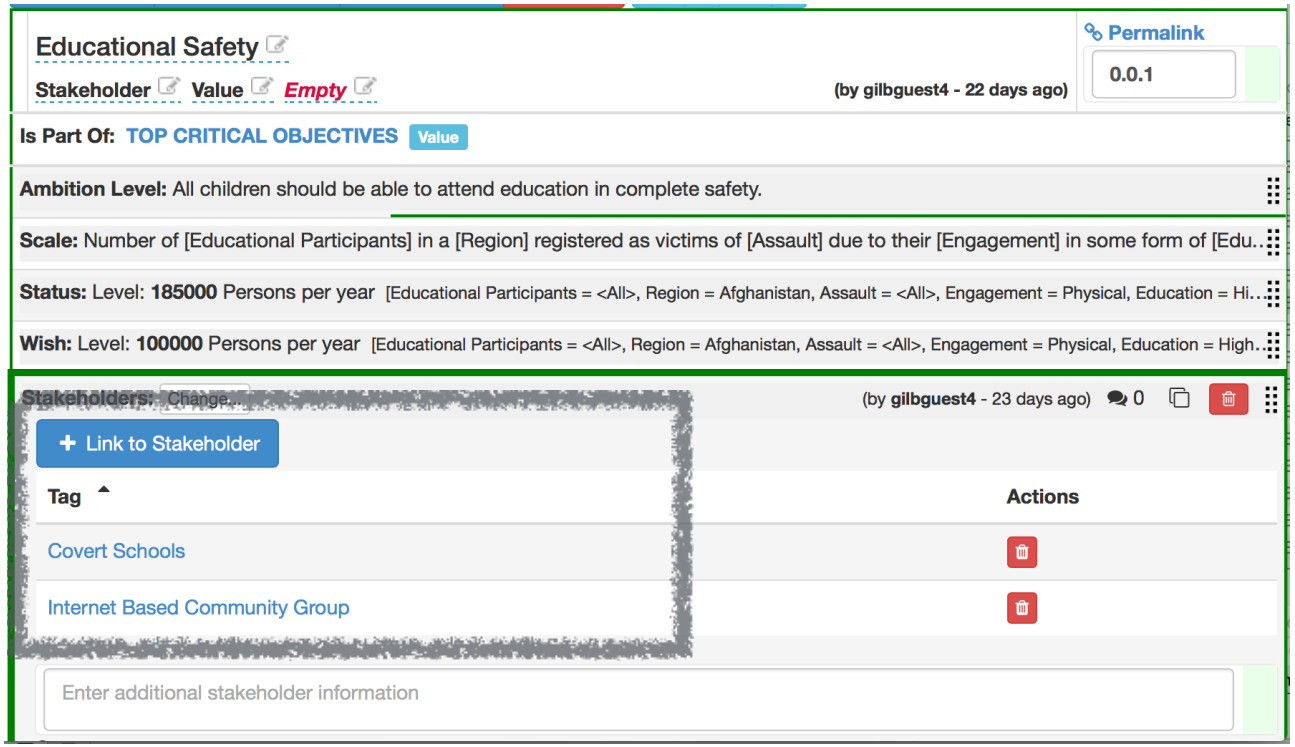
Stakeholder Feedback Types

- **Stakeholders have a variety of ways to feedback, react, and influence the process**
- **gradual measurement of value delivered versus value expected**
- **complaints**
- **'Sensemaker' ™ feedback**

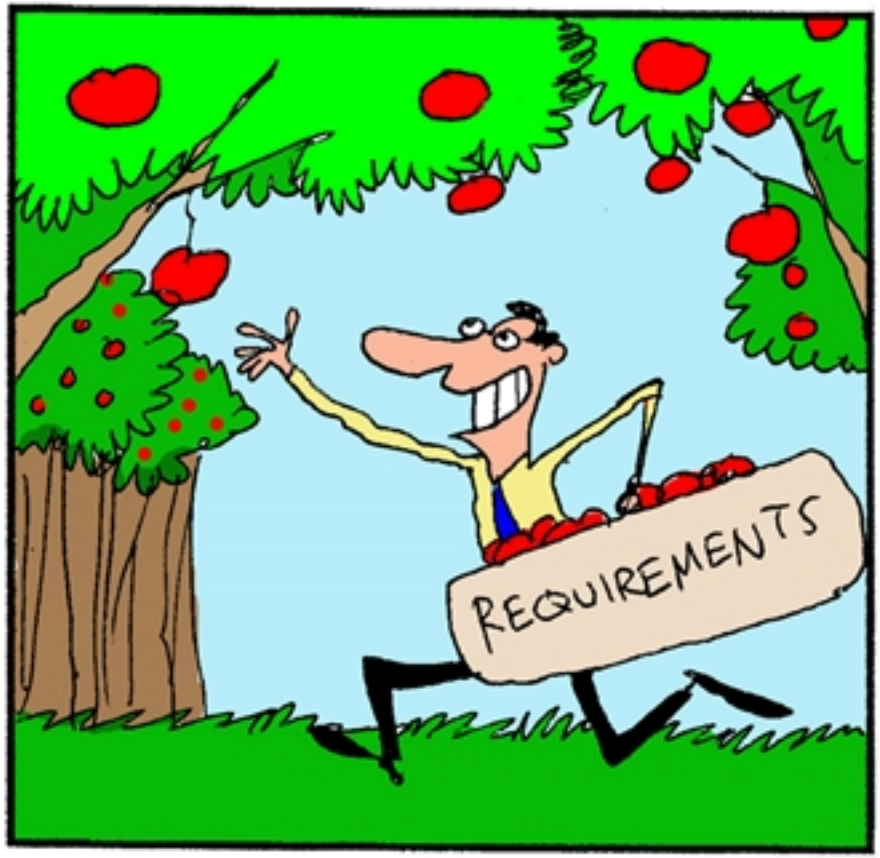


https://www.nngroup.com/articles/ux-research-cheat-sheet/

Defining a list of stakeholders which are related to an Objective



How stakeholders think requirement gathering works.



How requirement gathering really works.

https://www.pinterest.com/pin/528117493779293767/

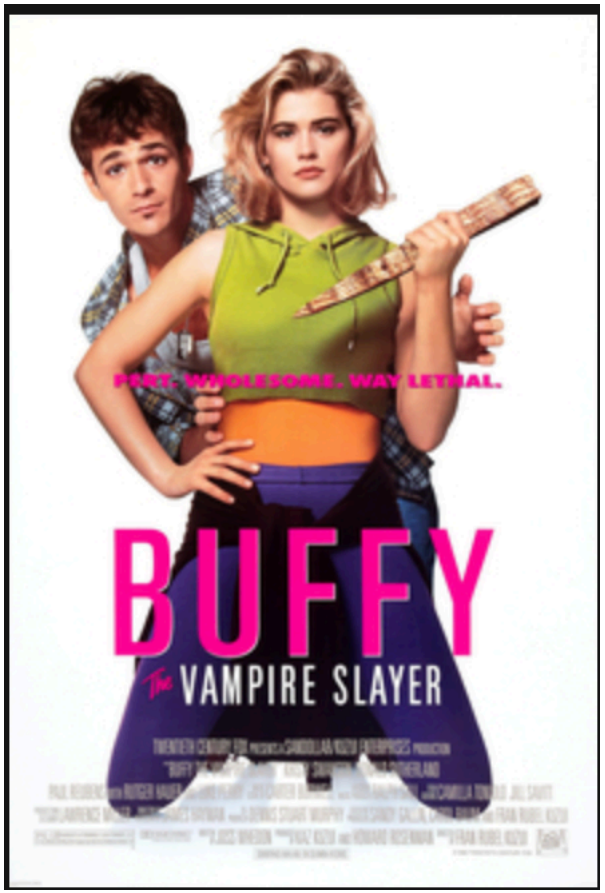
Managing and Engaging Project Stakeholders
(A Collective Responsibility)

A chain is acknowledgeably only as strong as its weakest link. Deficiencies within an otherwise good stakeholder management and engagement system at one or more interfacing points may result in potentially serious consequences for the project.

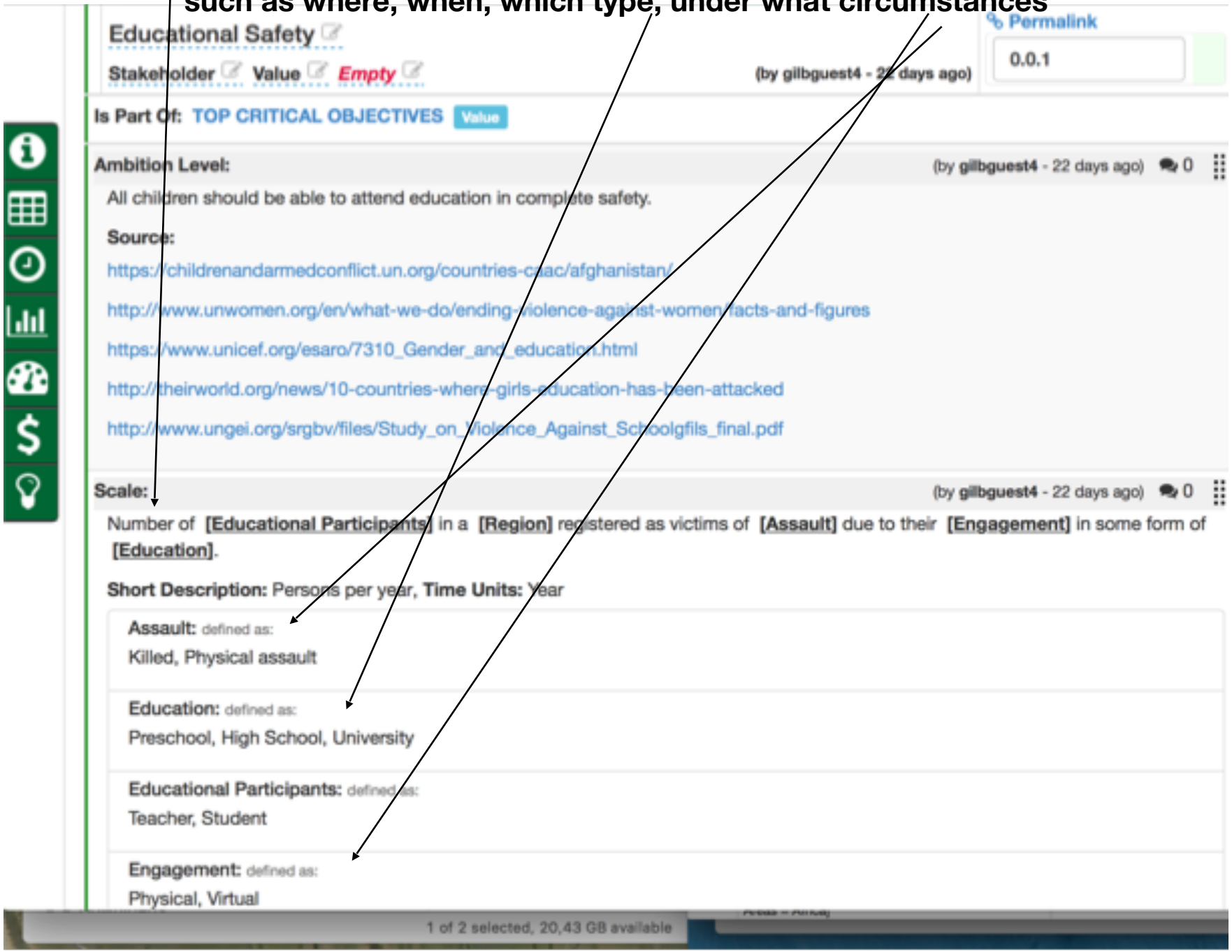
Managing and engaging stakeholders is NOT a „centralized“ responsibility entrusted to a single or few entities, such as the project sponsor, manager, team members or consultants.

It is a shared collective responsibility: All stakeholders must manage and engage each other over the project life-cycle.


ThisIsWhyImBroke
Werewolf Vampire Zombie Killing Kit
3.7 (8) · $39.99*

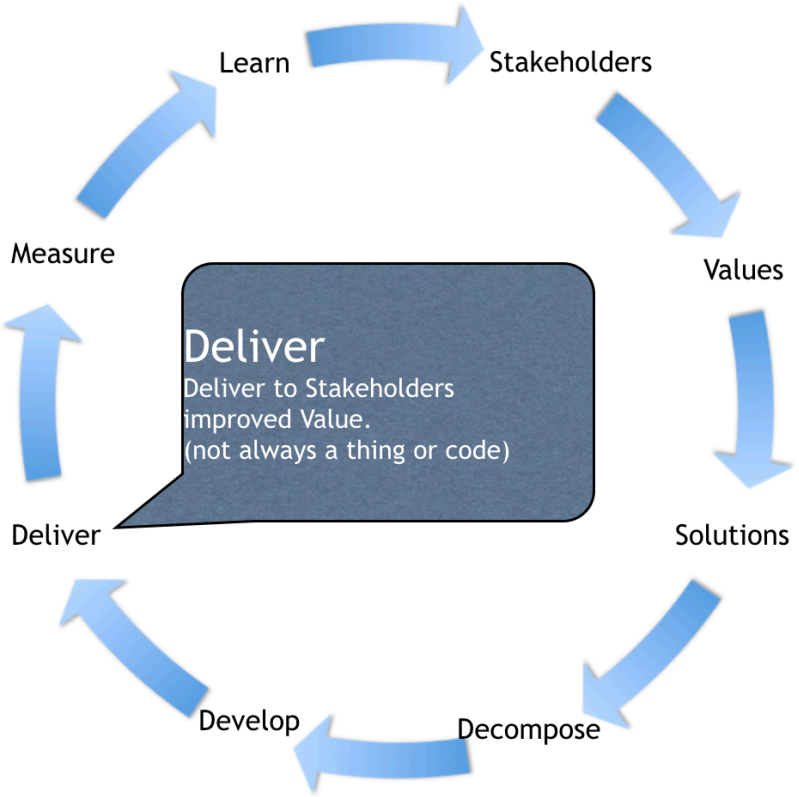

PERT. WHOLESOME. WAY LETHAL.
BUFFY
The VAMPIRE SLAYER

The Scale definition, scale 'parameters' - give additional information regarding stakeholders: such as where, when, which type, under what circumstances

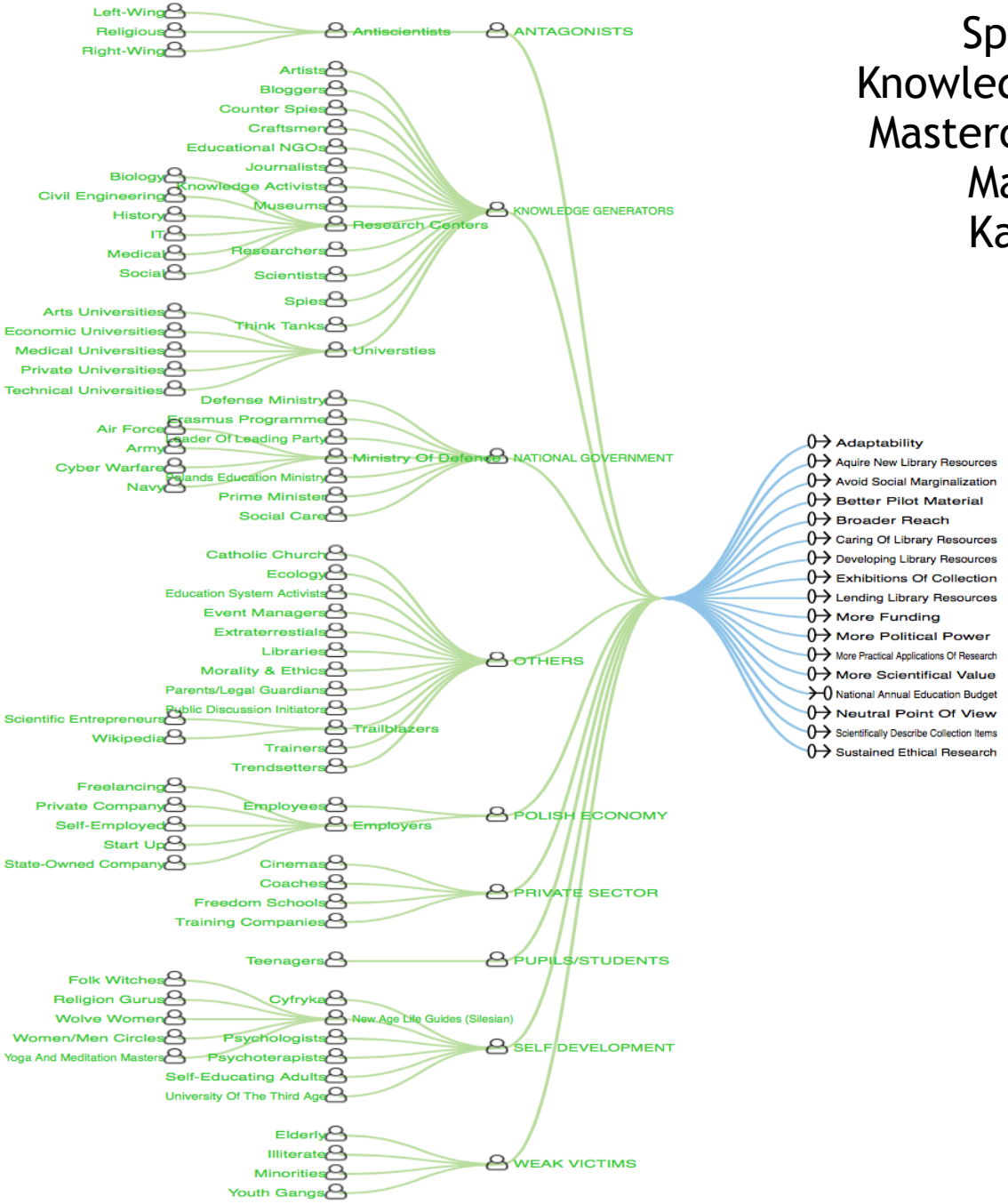


Stakeholder-Driven Value Delivery

- all projects
  - are about
  - *delivering values*
  - to **stakeholders**

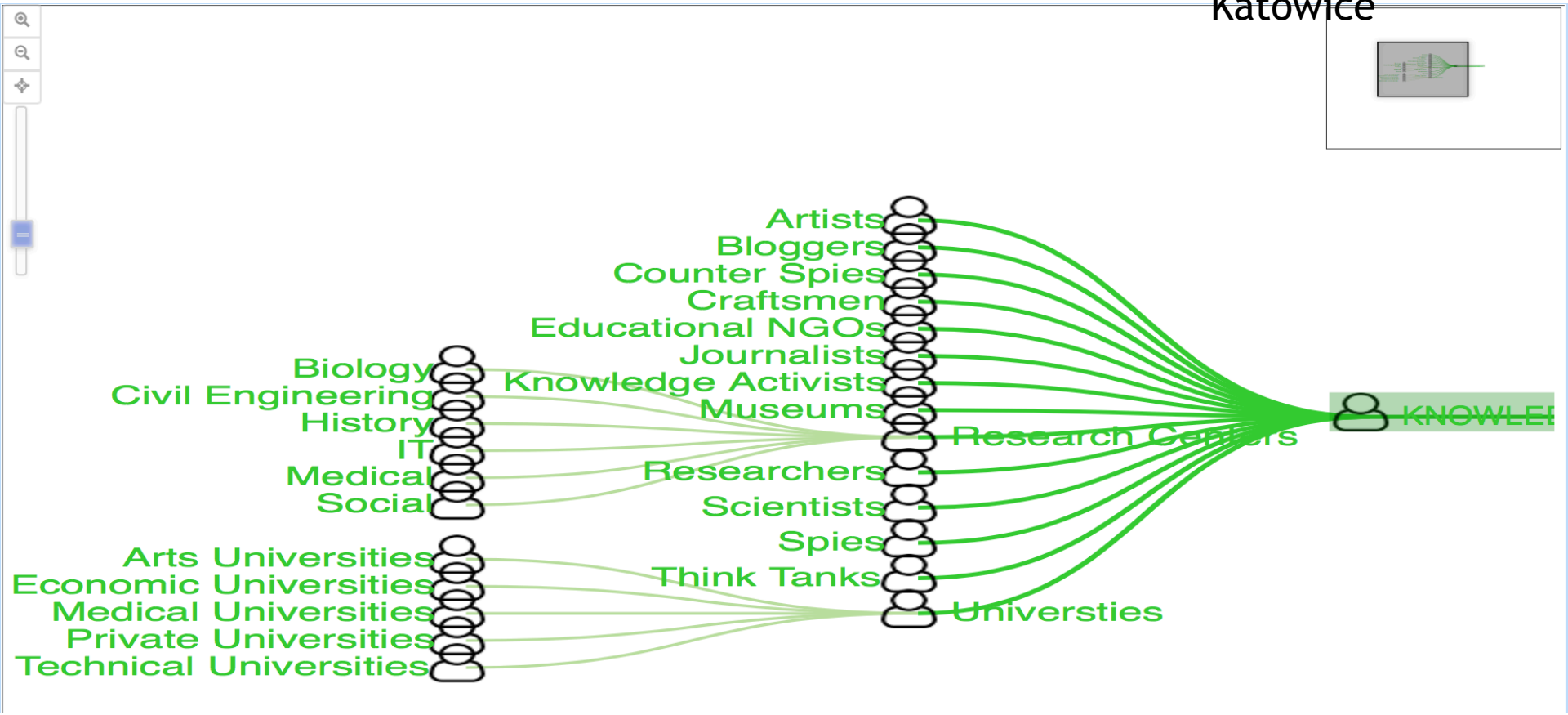


Spreading Knowledge in Poland Masterclass Project May 2018 Katowice



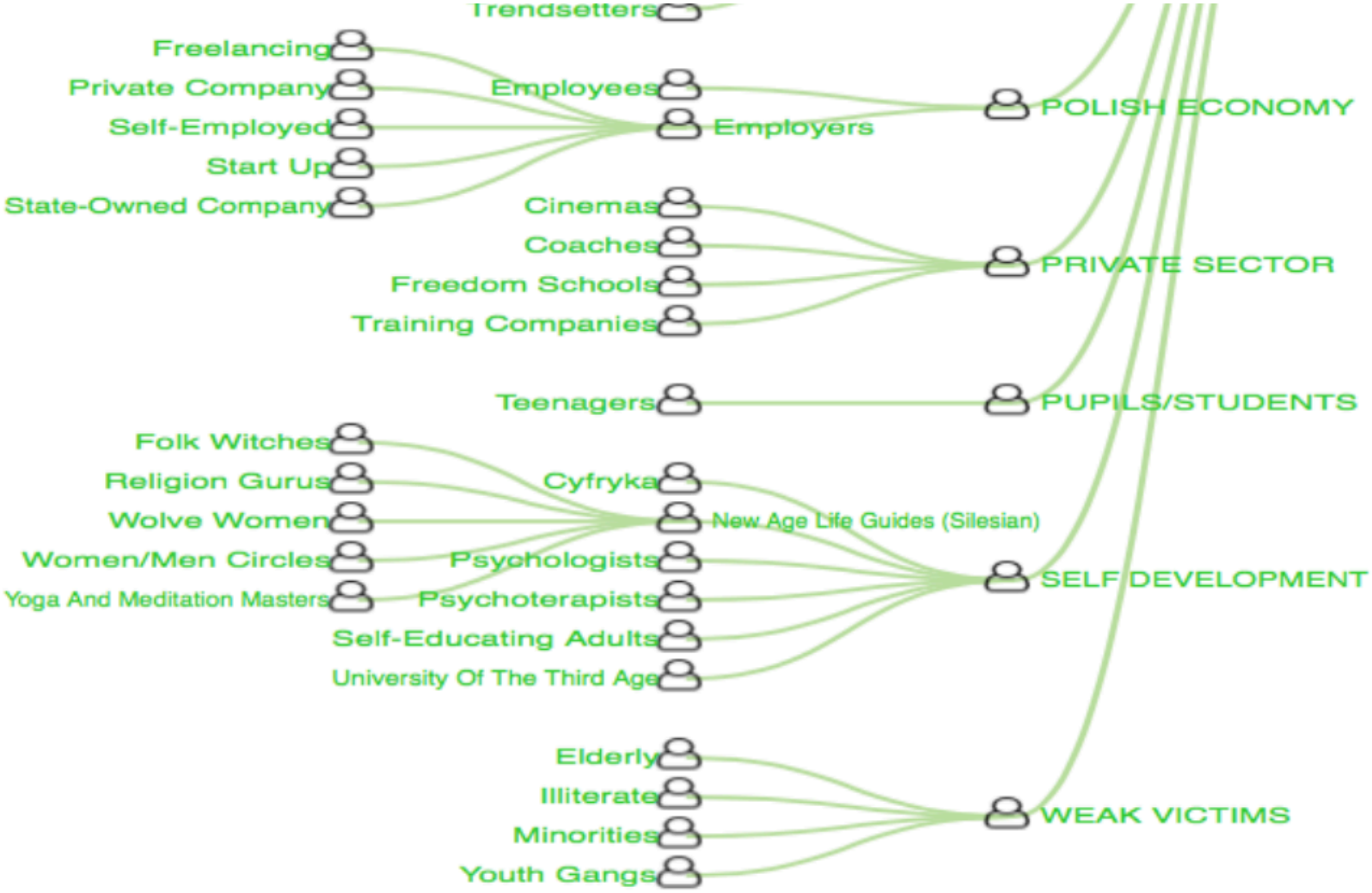
Enlarged view

Spreading
Knowledge in Poland
Masterclass Project
May 2018
Katowice

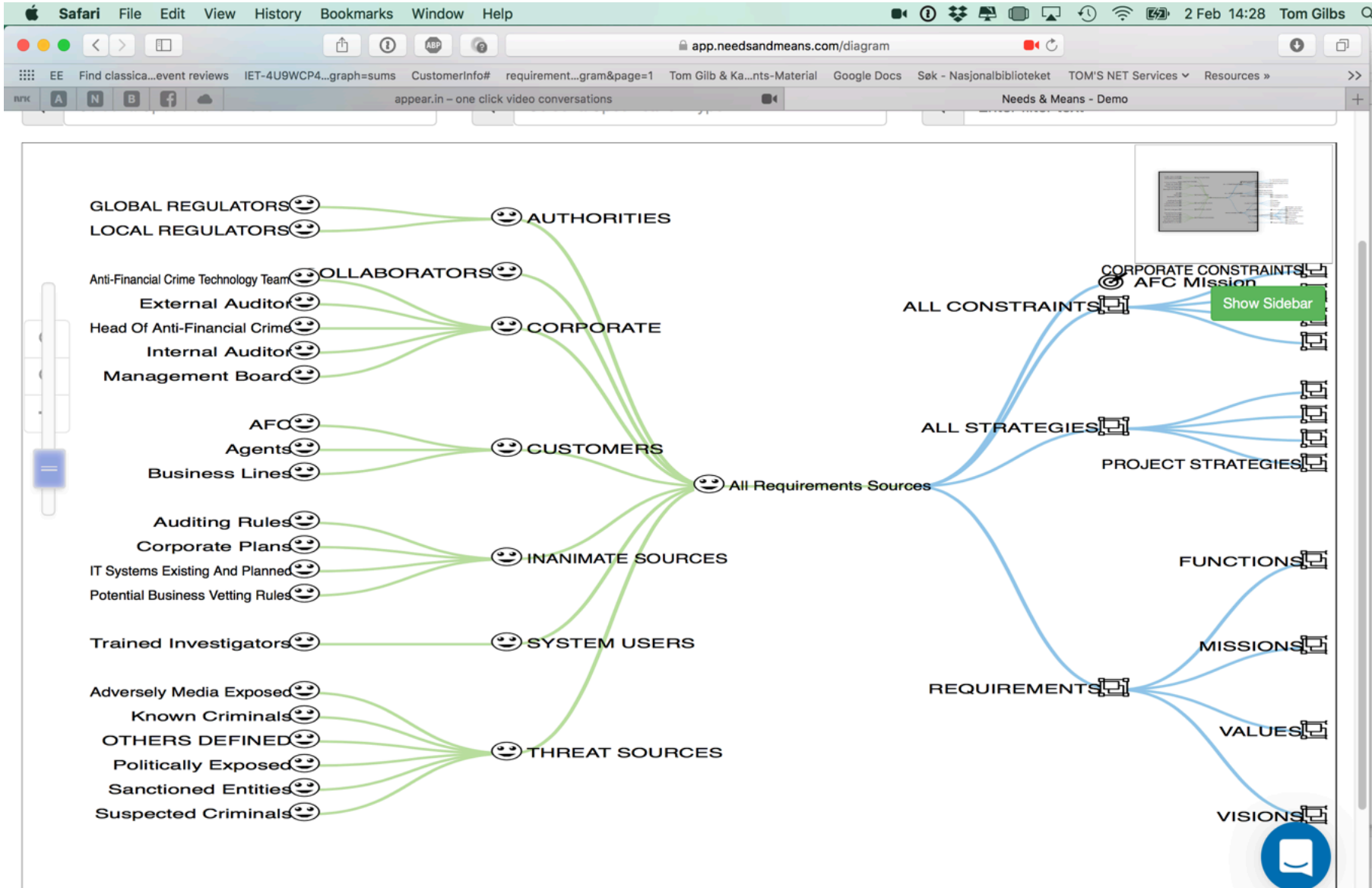


Enlargement of lower part of stakeholder diagram

Spreading Knowledge in Poland Masterclass Project
May 2018
Katowice



Bank Project Example 2018



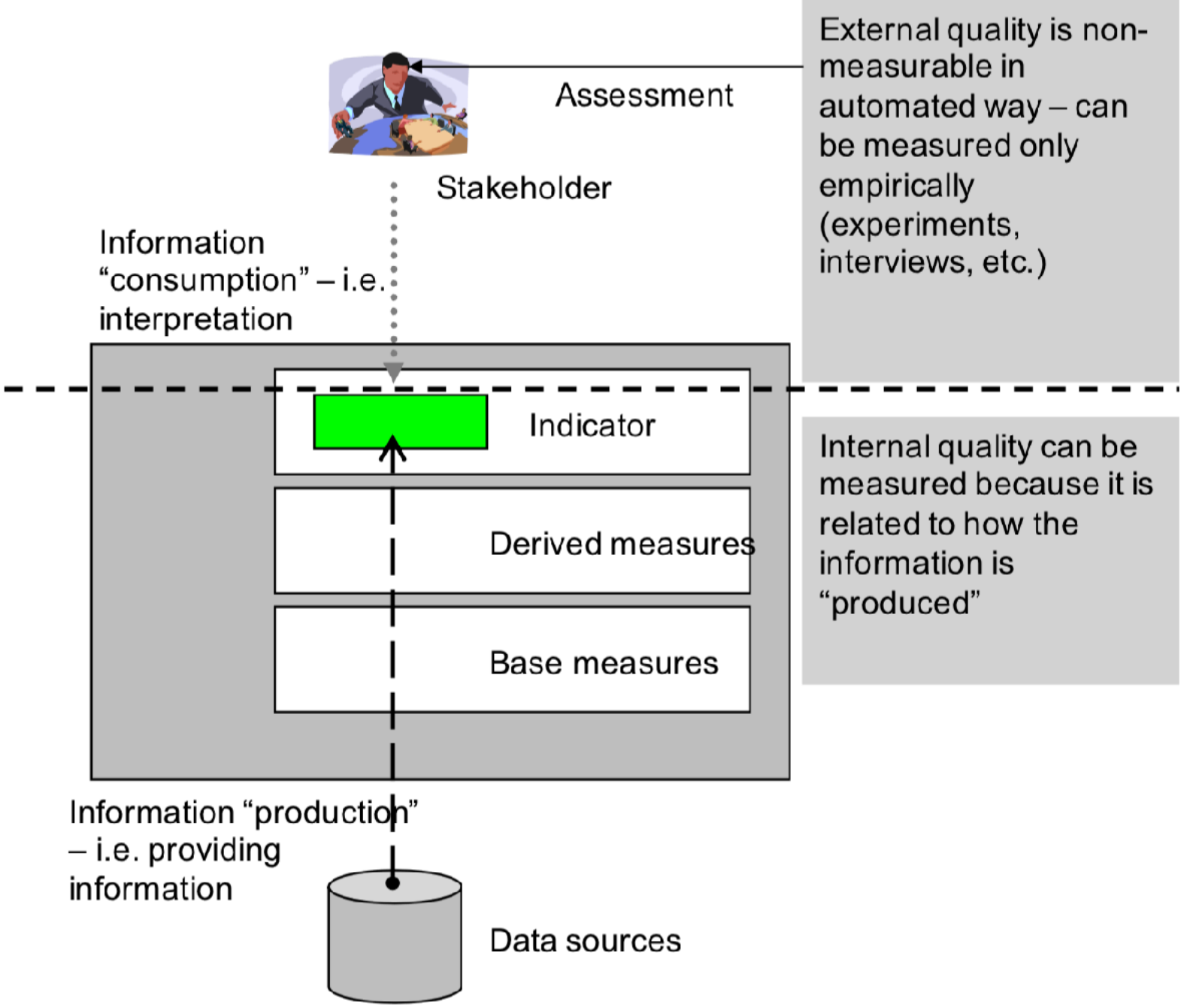


Fig. 4.3 Internal and external information quality

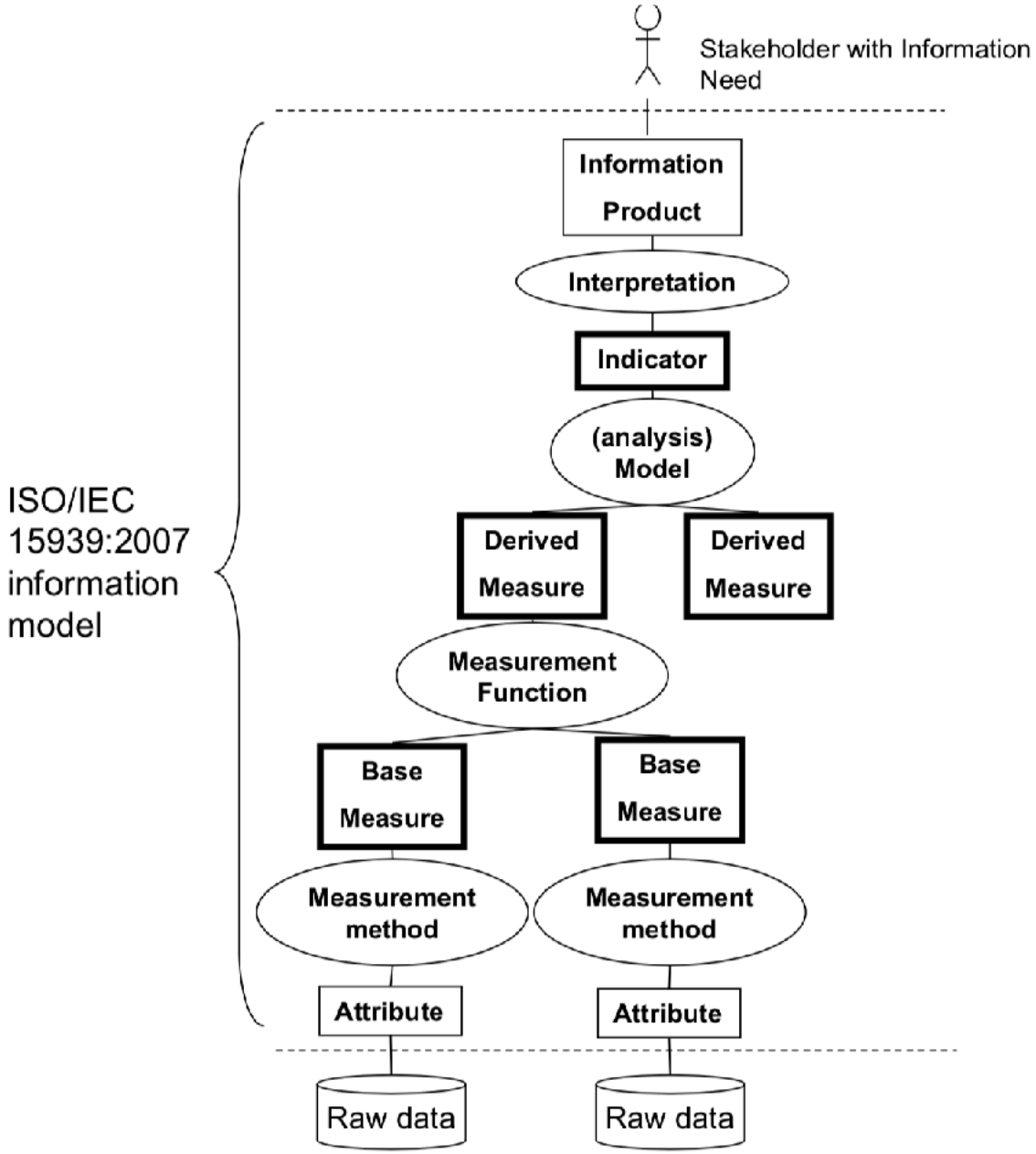


Fig. 4.2 Information model from ISO/IEC 15939, data sources and the stakeholder


Stakeholders
Learn
Values
Solutions
Decompose
Develop
Deliver
Measure

Ten Stakeholder Principles
© Tom Gilb 2016
Stakeholder Power: The Key to Project Failure or Success

1. **Some stakeholders are more critical to your system than others.**
2. **Some stakeholder needs are more critical to your system than others.**
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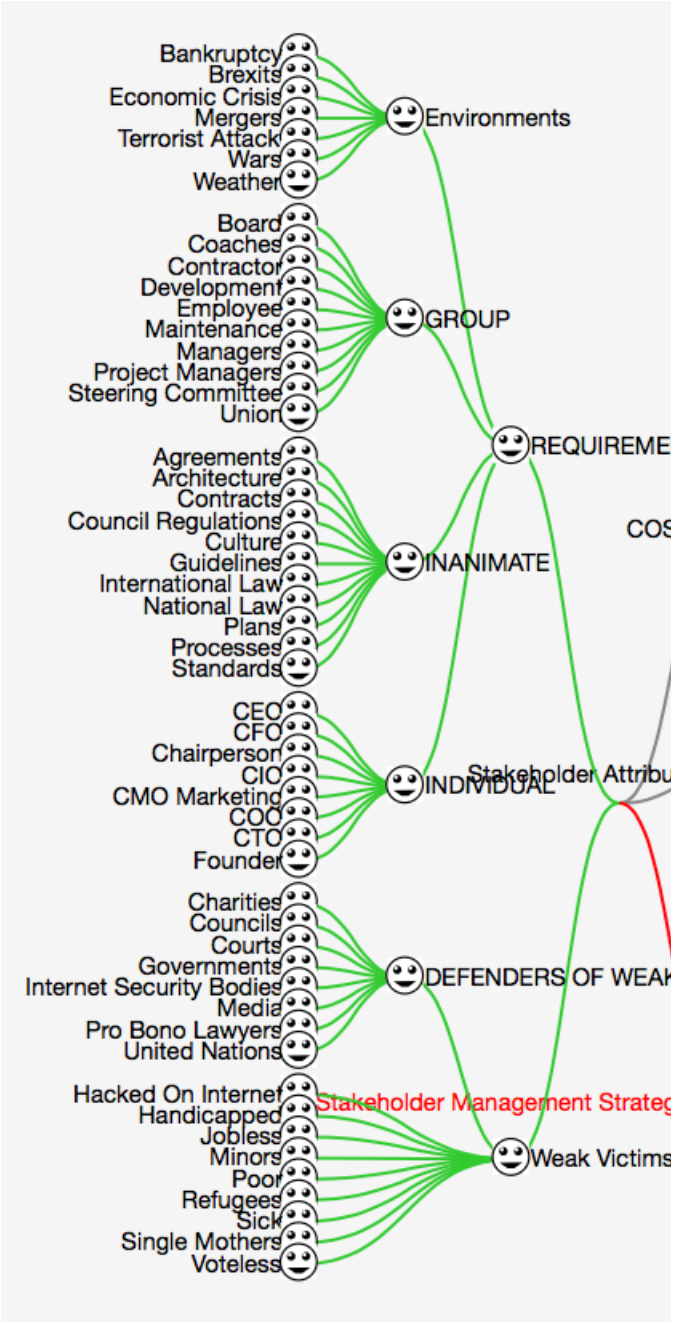
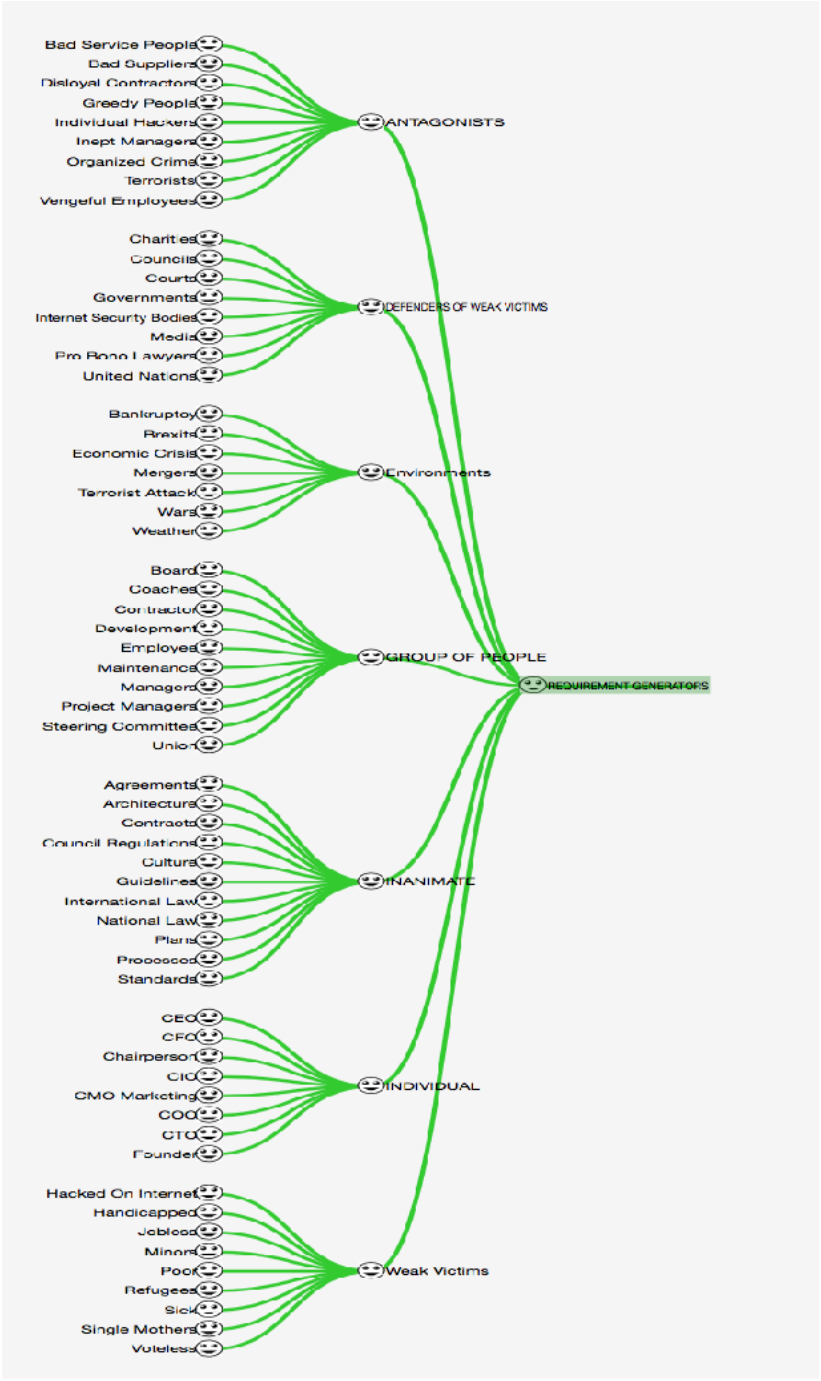
7. **Stakeholders are not likely to have any realistic idea of what their real needs and demands are, nor what it will cost to satisfy them. So their evolved real requirements need to be based on value for costs, not on value alone. Delivering small increments, based on high value-to-cost, is one smart way to deal with this.**
8. **If you think you have found 'all of the critical stakeholders', you should assume there is at least one more, and when you find that one, it's quite likely there is another. They will emerge, and they are not all there at the beginning.**
9. **If you think you have found all critical needs of a stakeholder, there will always be at least one more need hiding, more likely several.**
10. **If you do not understand and act on these principles, you will blame your failure on 'system complexity', and the unexpected and wicked problems. But in reality, it is your own fault and responsibility – a more positive and effective approach is to deal with it - up front, and constantly.**

Good quality image
2020 used in SEA book
2020 1.1





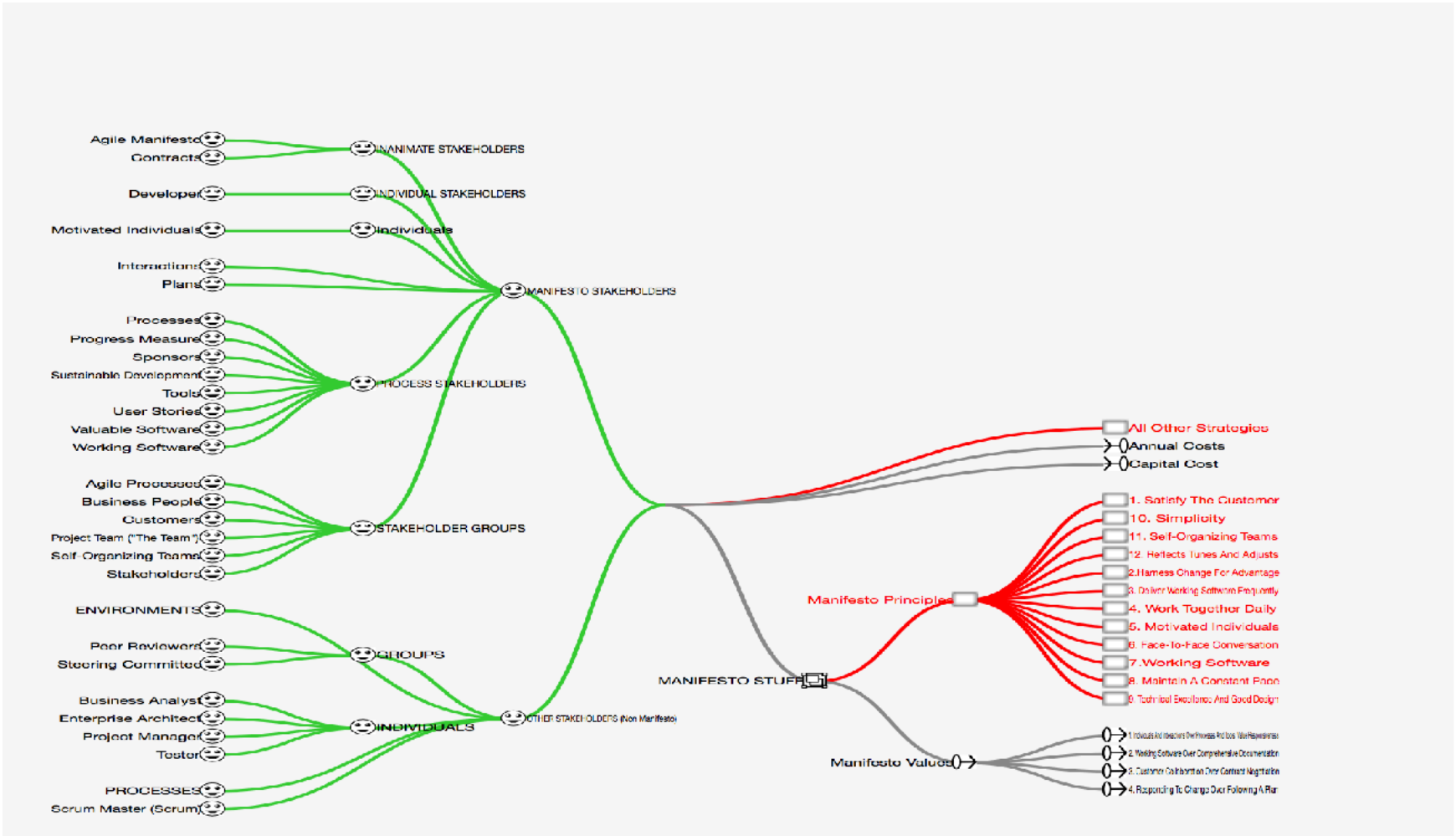
Generic Stakeholder map 'Requirements Sources'

Notice the new categories of stakeholders

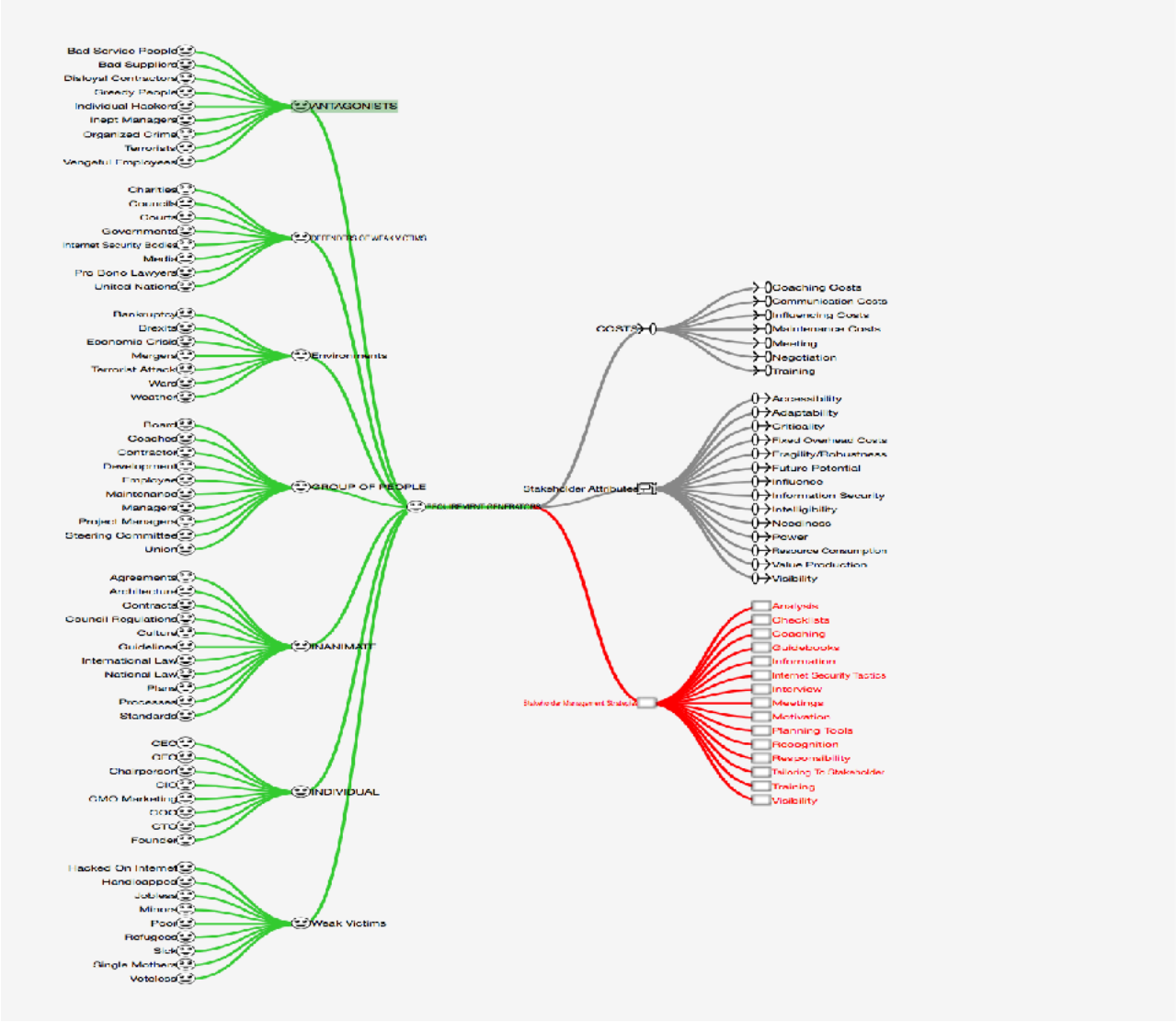
1. **Antagonists**
2. **Defenders of weak victims**
3. **Environments**
4. Groups of People
5. Inanimate
6. Individuals
7. **Weak Victims**

Bad image 2020

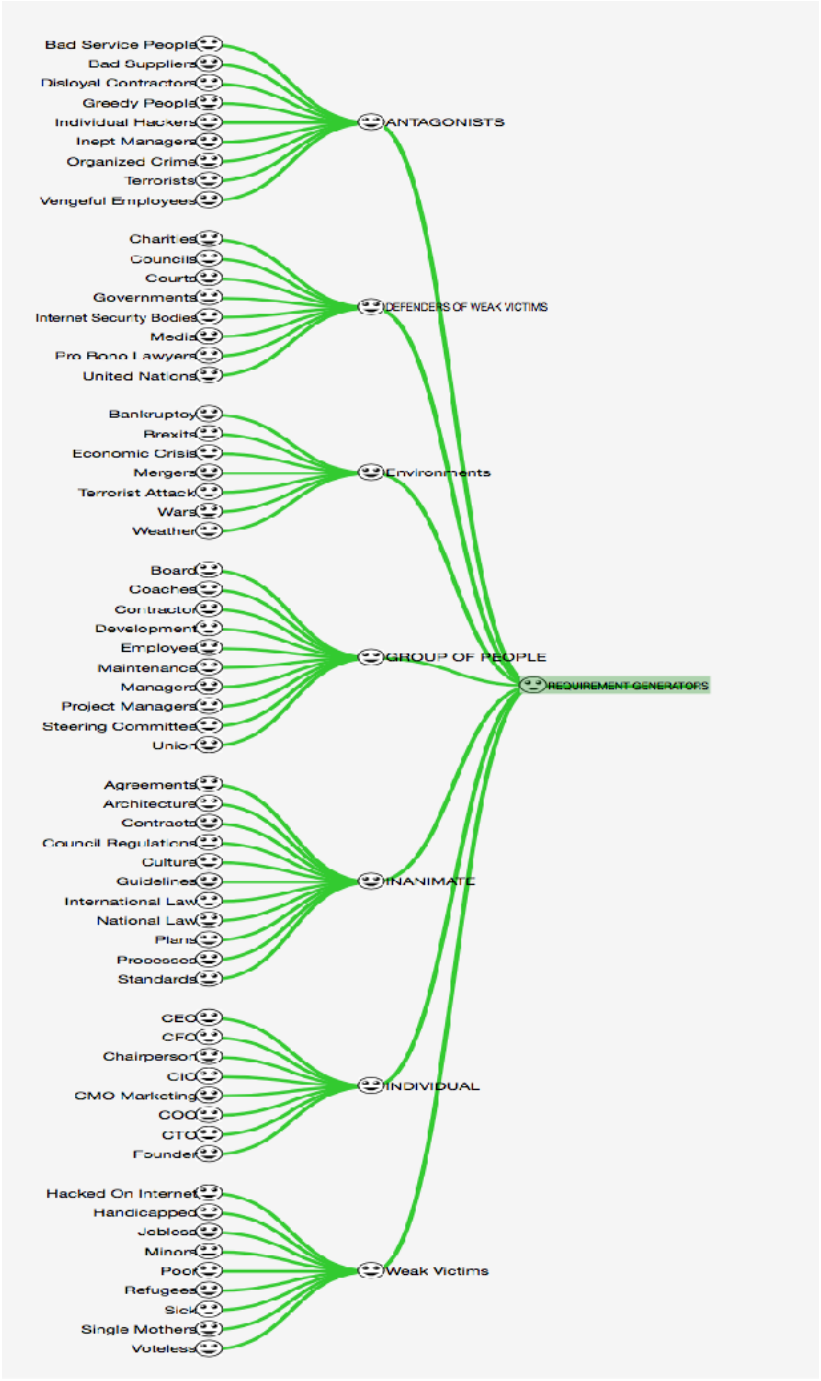
A Stakeholder example related to the Manifesto Values and Principles



A Generic Stakeholder Map BAD QUALITY IMAGE 2018 with related examples of requirements and designs



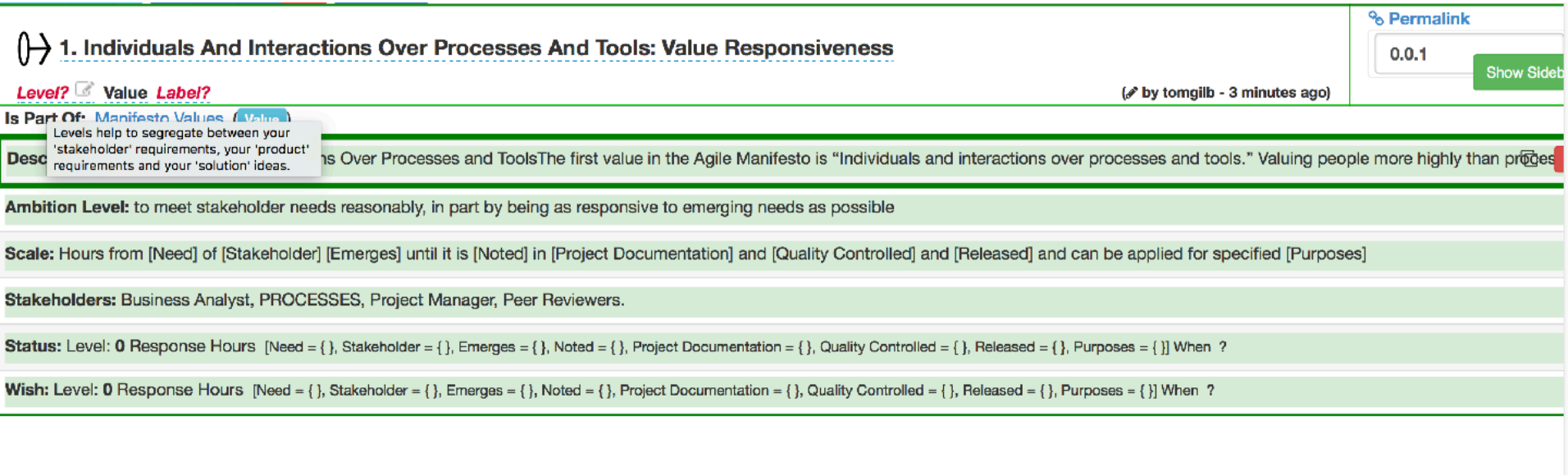
Not good quality image 2020



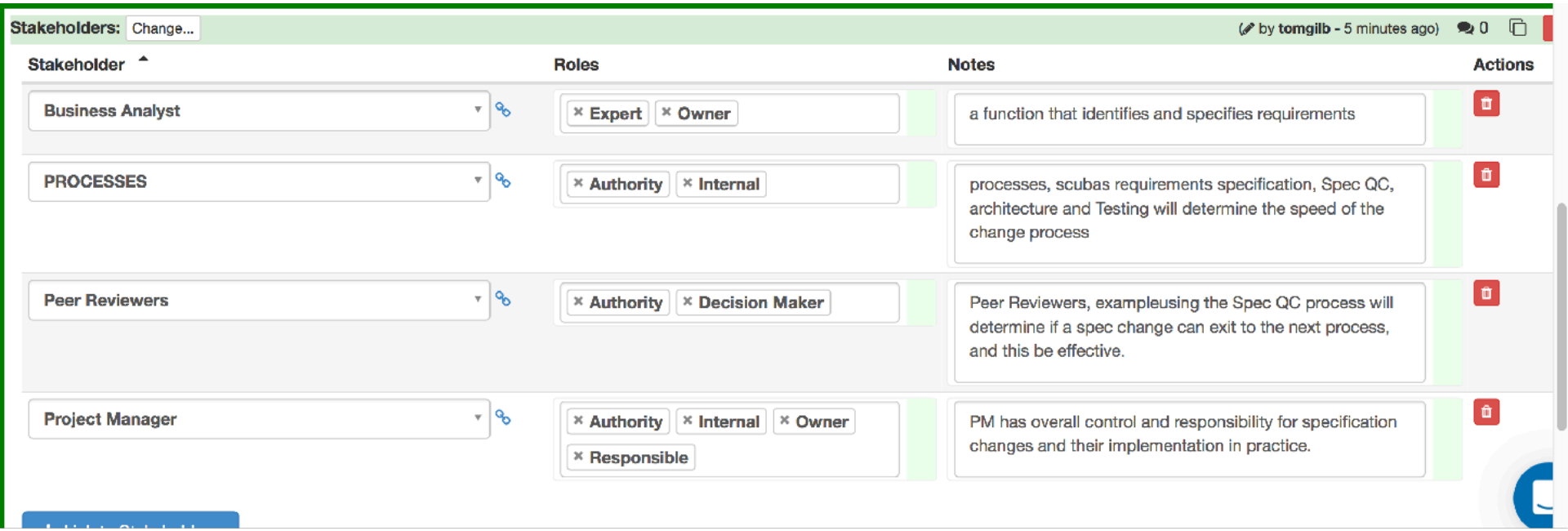
Generic Stakeholder map ‘Requirements Sources’

Not good quality image 2020

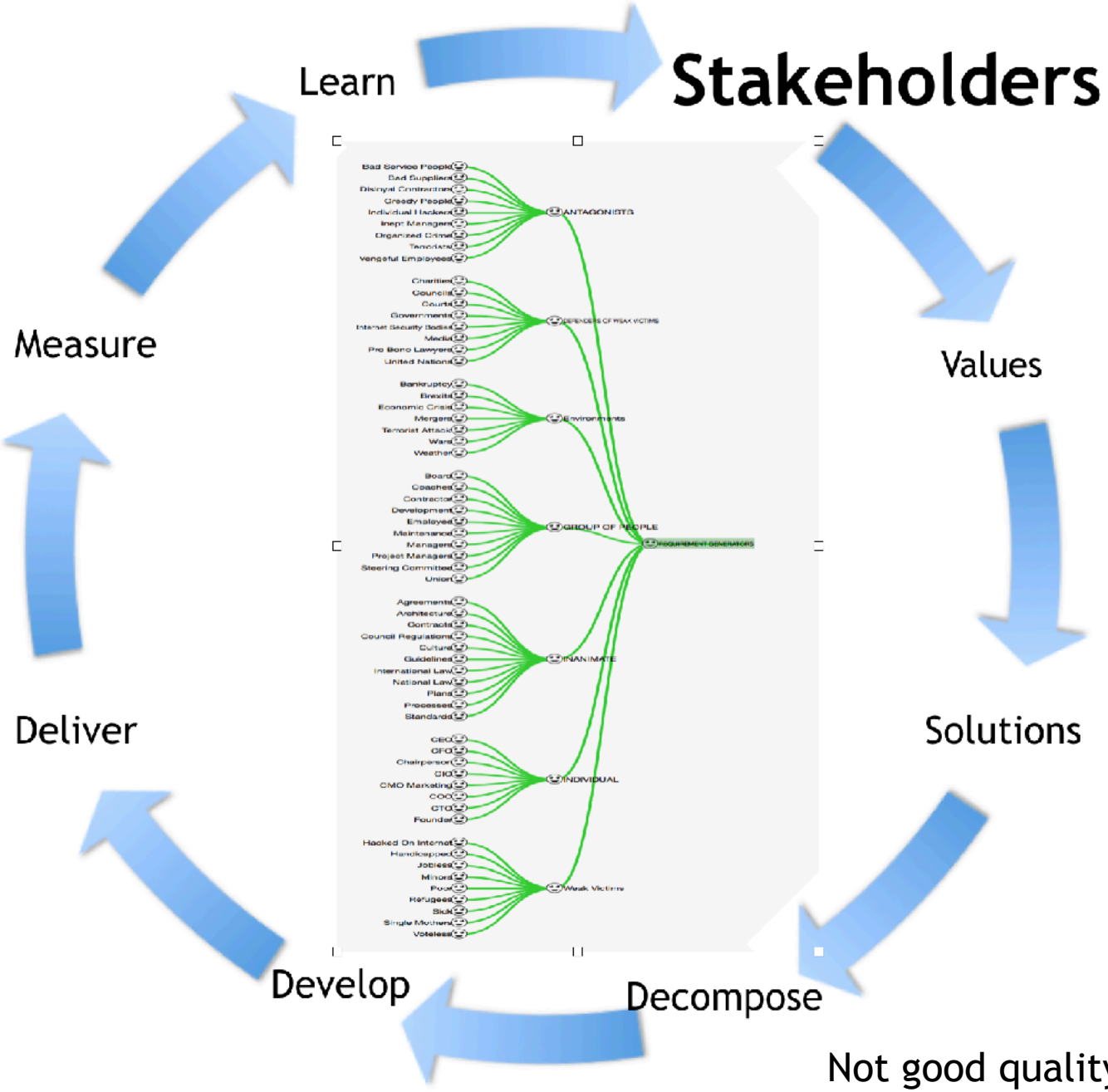
Stakeholder Selection for a single requirement



Stakeholder Selection for a single requirement (Value Responsiveness), and their Stakeholder roles



A STAKEHOLDER LIST, AND GENERIC STRUCTURE OF STAKEHOLDER TYPES. THE CYCLE IS THE PLANGUAGE/EVO VALUE CYCLE (BY KAI GILB).



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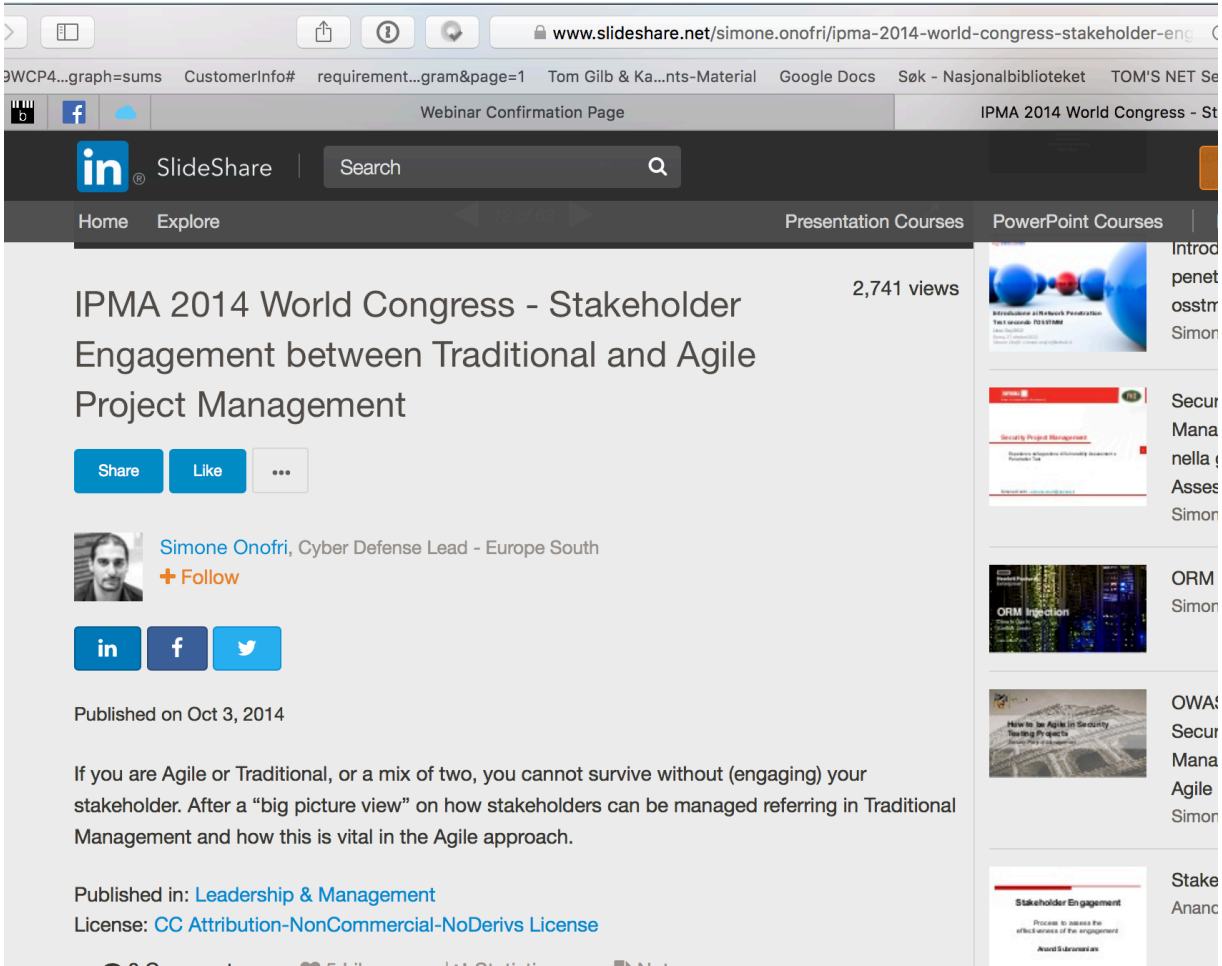
Onofri slides on Stakeholders 2014

https://www.slideshare.net/simone.onofri/ipma-2014-world-congress-stakeholder-engagement-between-traditional-and-agile-project-management



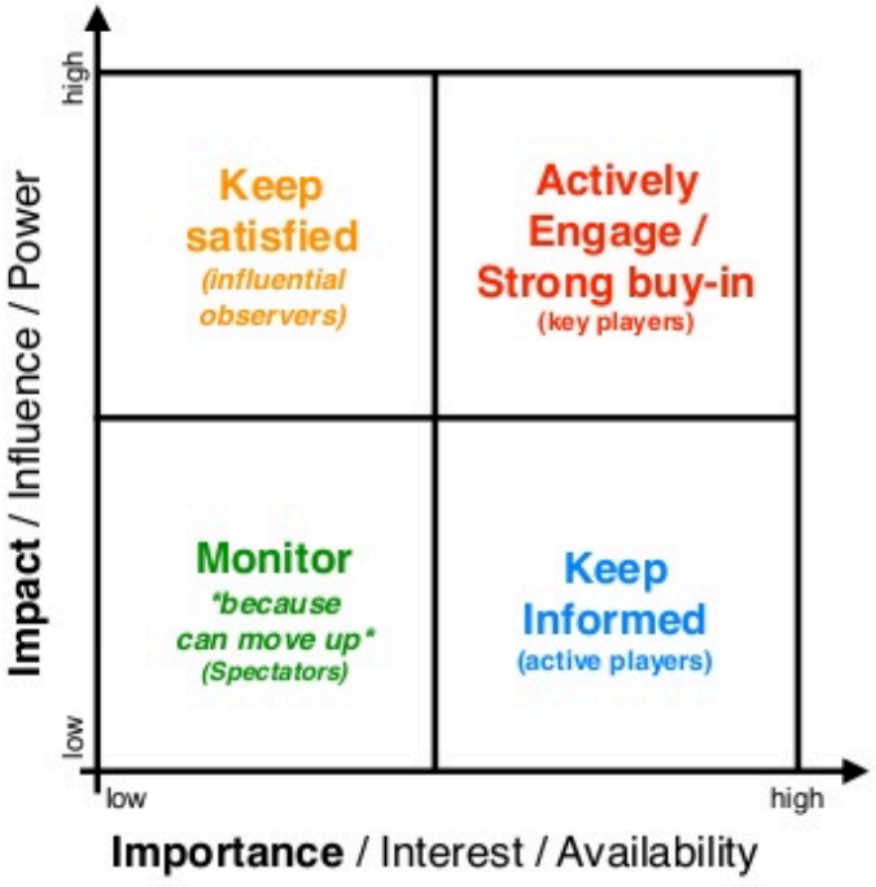
Onofri slides on Stakeholders 2014

Sample Stakeholder Profile

Project Identifier	*P01 - New sales system*
Stakeholder Identifier	*S01 - Sales director*
Name and surname	*Favourite Stakeholder*
Impact / Influence/ Power	*High*
Importance / Interest /	*High*
Resistance	*Consider the digital system less reliable than paper-work*
Benefits	*Increase productivity of his staff and more probability to get the Objectives for the next semester.*
Dis-Benefits	*Reduction of administrative staff, means for him less people and less "power".*
Risks	*Burn-out*
How to engage	*Face to face meeting preferred, also video calls (he must see you). E-mail only*
Last Contact date	*2014-10-01*
Stakeholder Log	*Event 1, Event 2…*
Next action	*to do something*

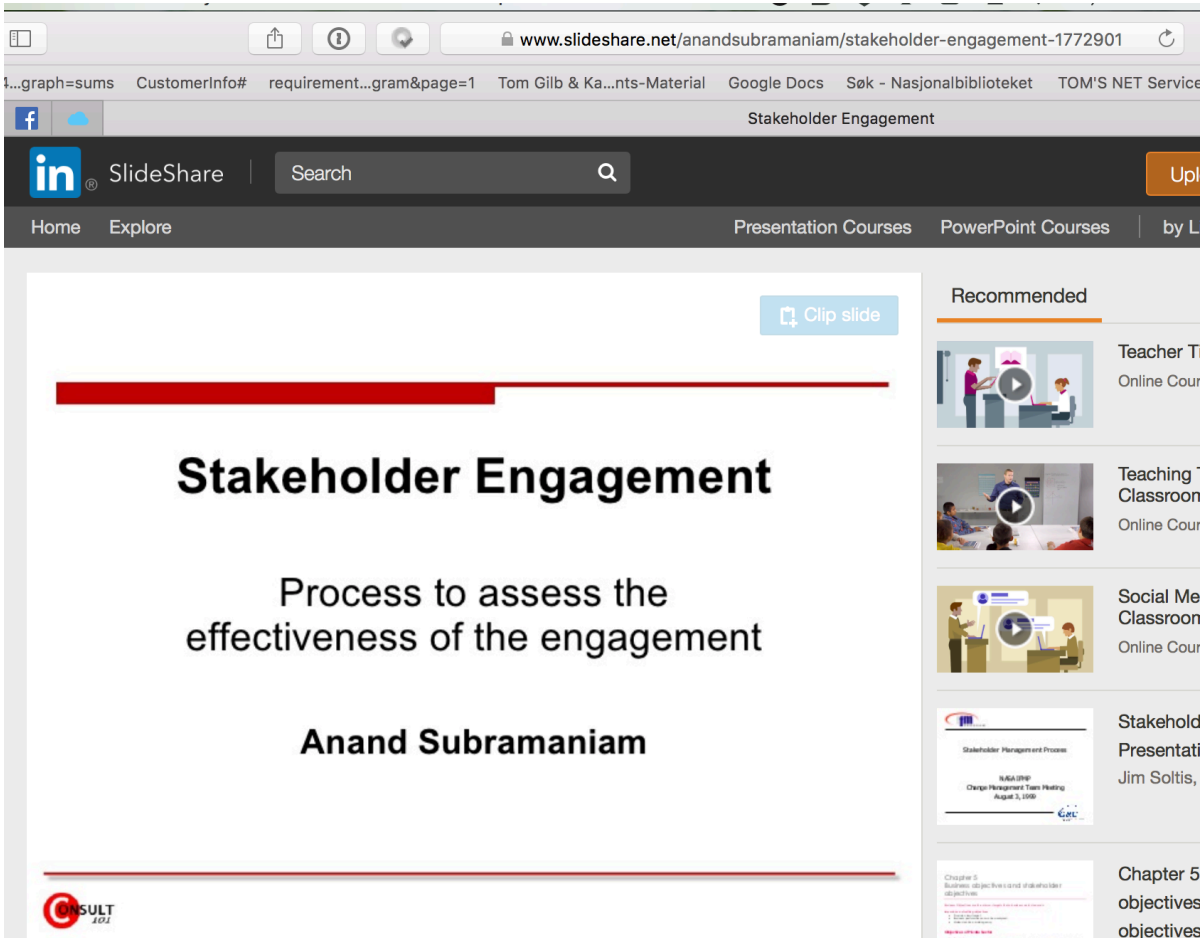
Onofri slides on Stakeholders 2014

The global picture



Subraniam Stakeholder slides

https://www.slideshare.net/anandsubramaniam/stakeholder-engagement-1772901



Steve blank on Regulatory Stakeholders

https://steveblank.com/2018/10/09/startups-and-regulated-markets/

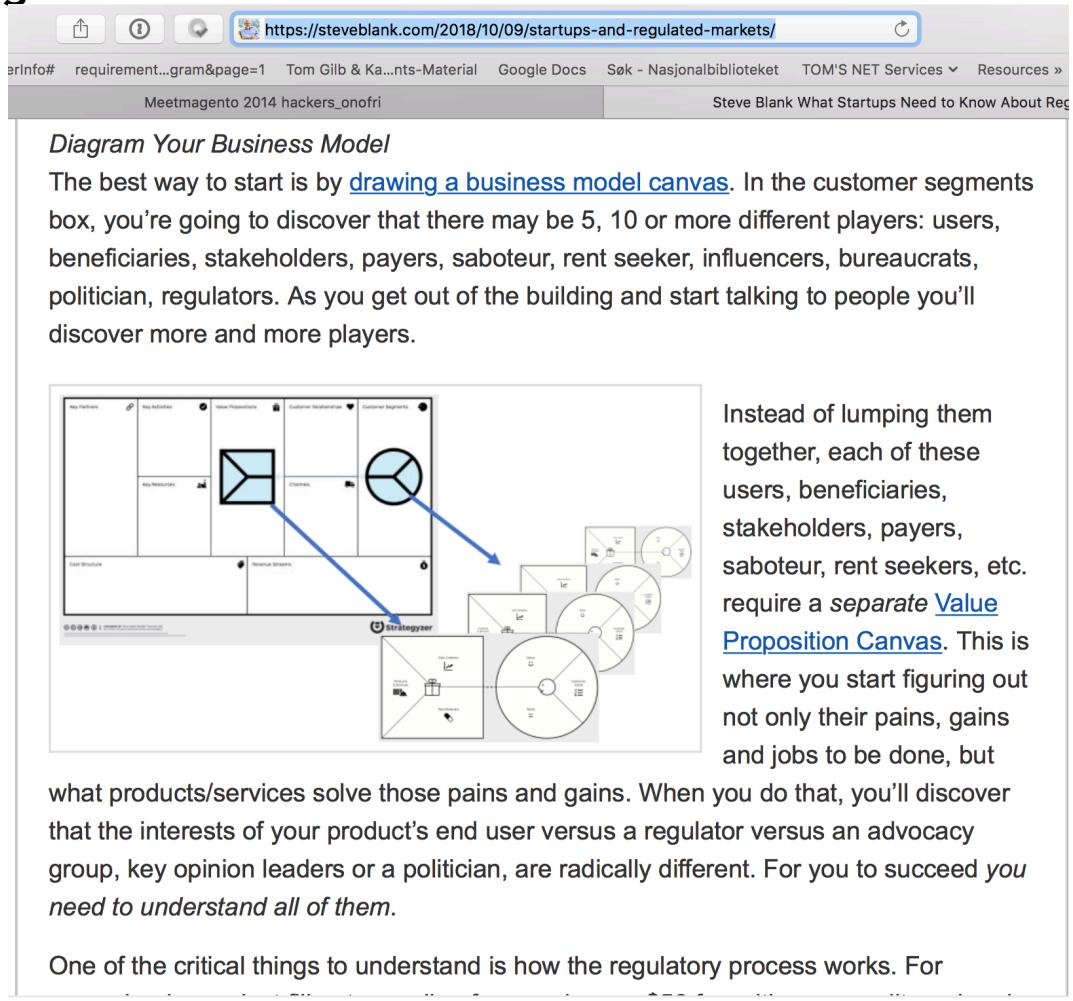


Diagram Your Business Model

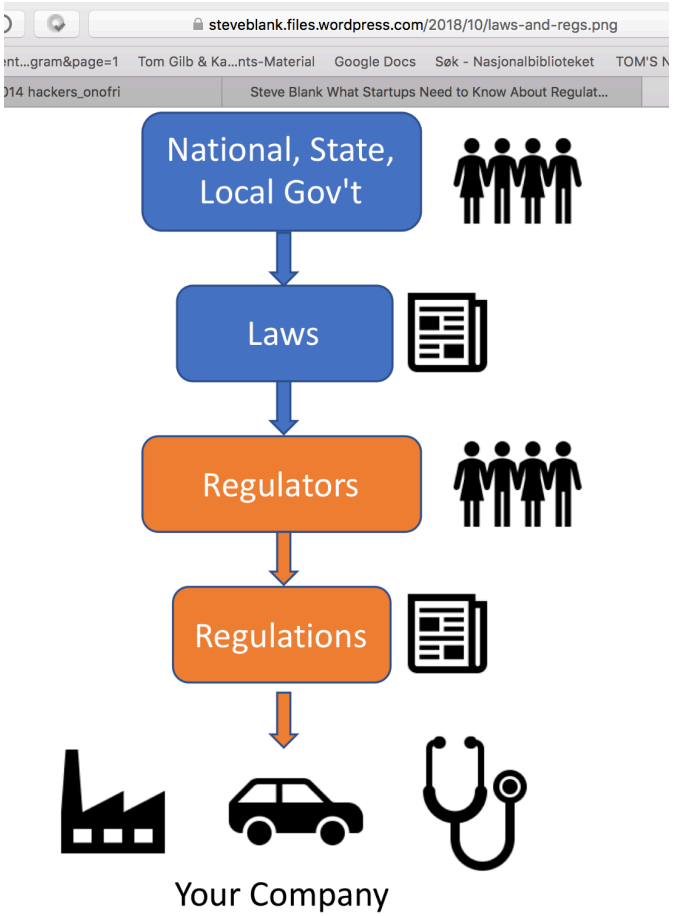
The best way to start is by drawing a business model canvas. In the customer segments box, you're going to discover that there may be 5, 10 or more different players: users, beneficiaries, stakeholders, payers, saboteur, rent seeker, influencers, bureaucrats, politician, regulators. As you get out of the building and start talking to people you'll discover more and more players.

Instead of lumping them together, each of these users, beneficiaries, stakeholders, payers, saboteur, rent seekers, etc. require a *separate* Value Proposition Canvas. This is where you start figuring out not only their pains, gains and jobs to be done, but what products/services solve those pains and gains. When you do that, you'll discover that the interests of your product's end user versus a regulator versus an advocacy group, key opinion leaders or a politician, are radically different. For you to succeed *you need to understand all of them*.

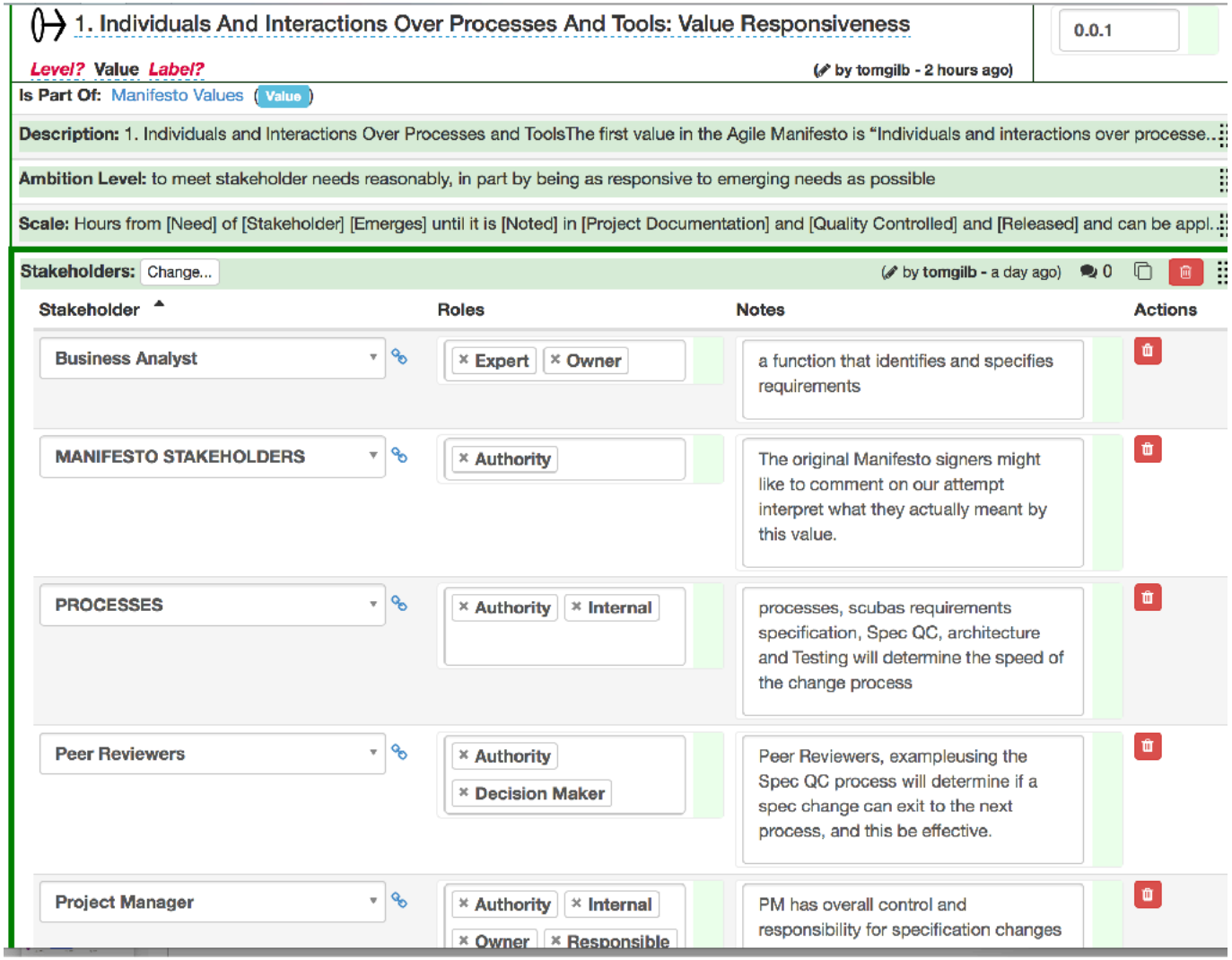
One of the critical things to understand is how the regulatory process works. For

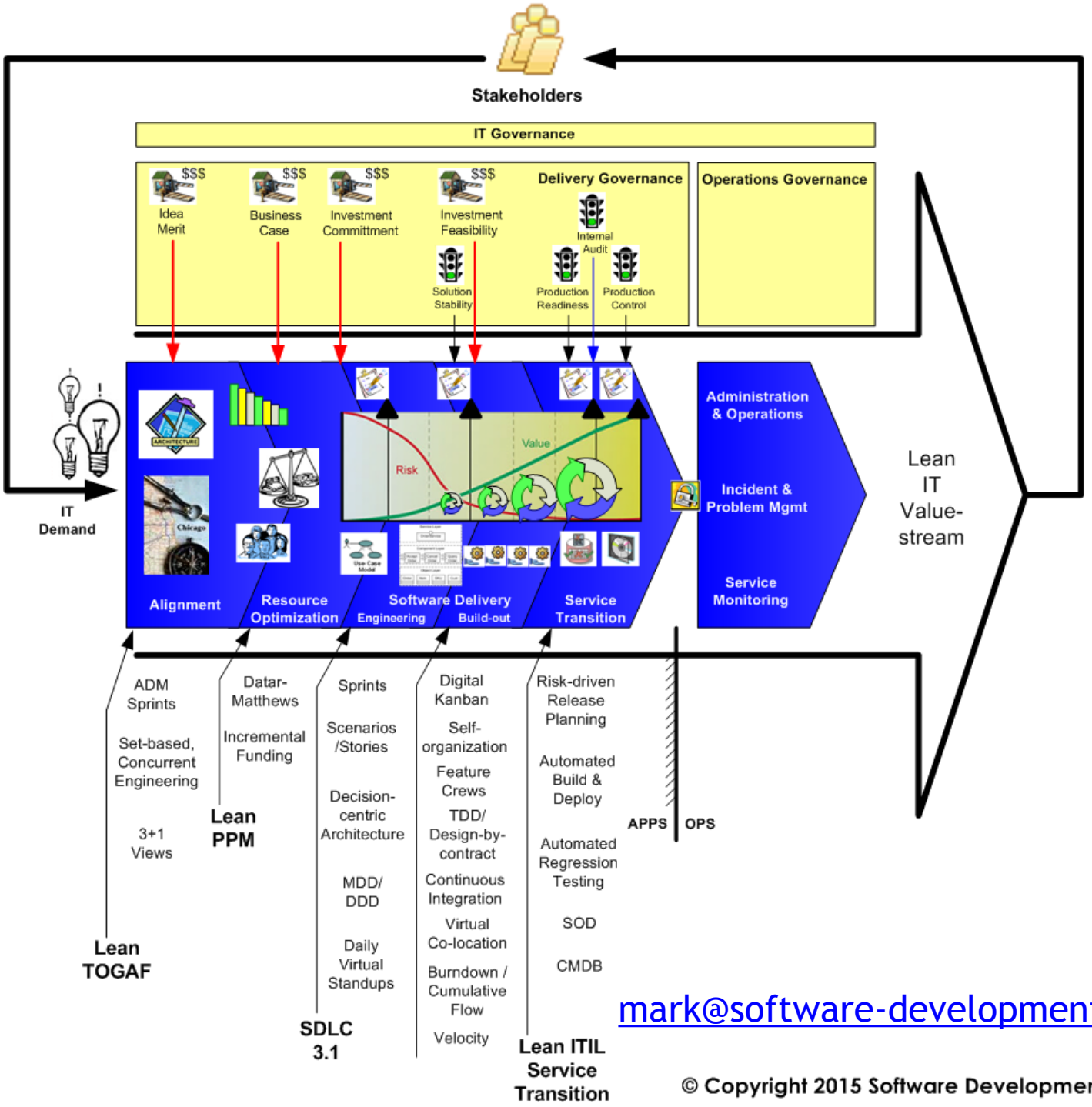
Steve Blank's Hierarchy of Stakeholders

https://steveblank.com/2018/10/09/startups-and-regulated-markets/



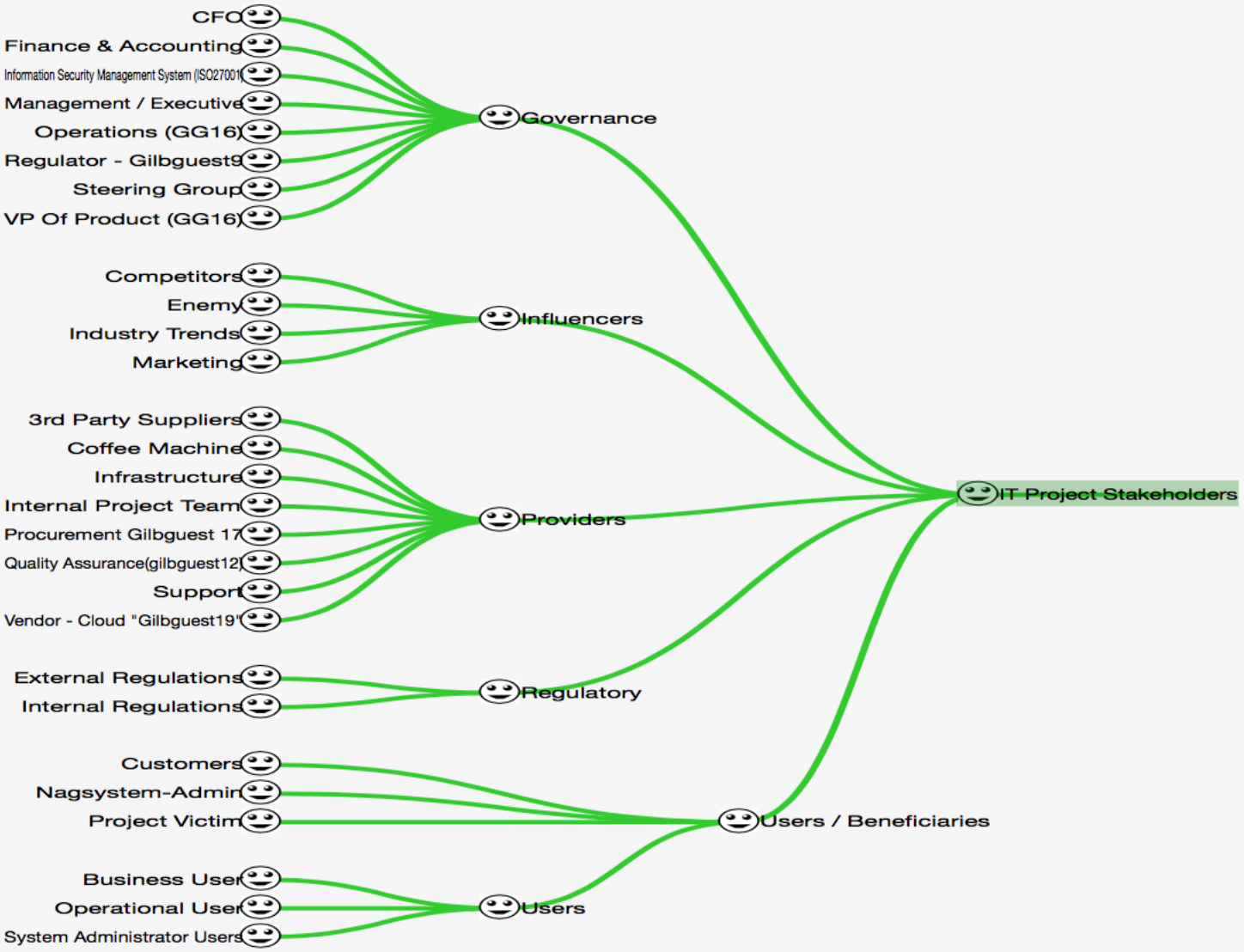
HERE IS A LIST OF 5 STAKEHOLDERS FOR ONE (AGILE MANIFESTO) VALUE. THE SCALE OF MEASURE IS DEFINED, AND THE REQUIRED FUTURE LEVEL NEEDS TO BE DETERMINED IN COLLABORATION WITH THESE STAKEHOLDERS.





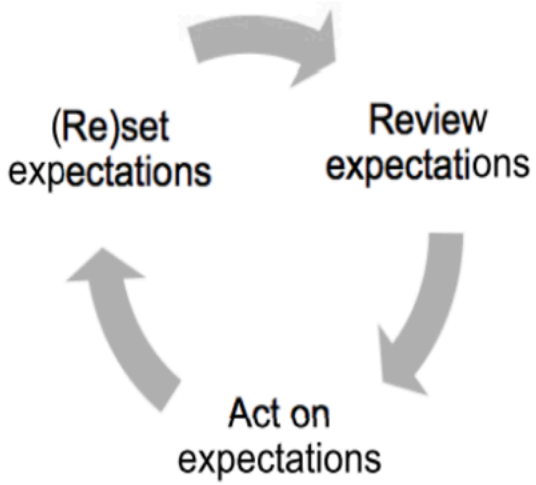
mark@software-development-experts.com

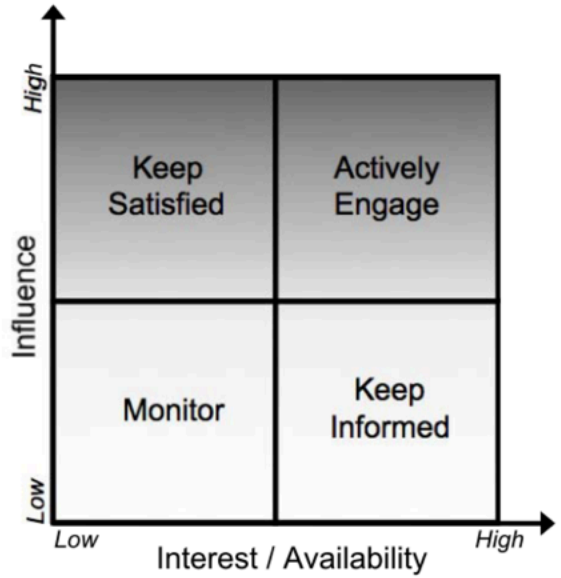
Good quality type

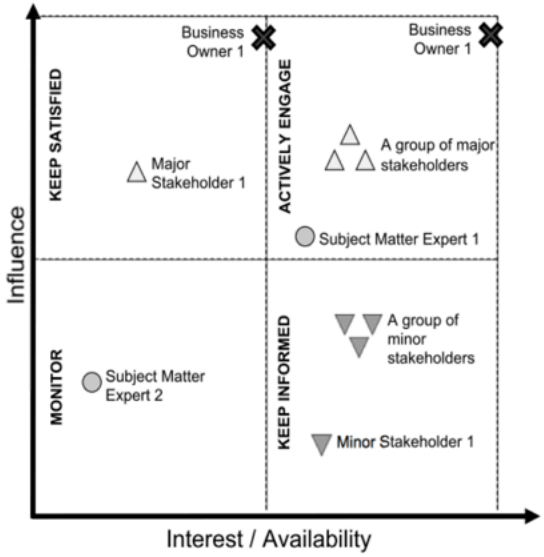


Stakeholder Management

Stakeholder engagement is like refining your backlog. You should continuously inspect and adapt!







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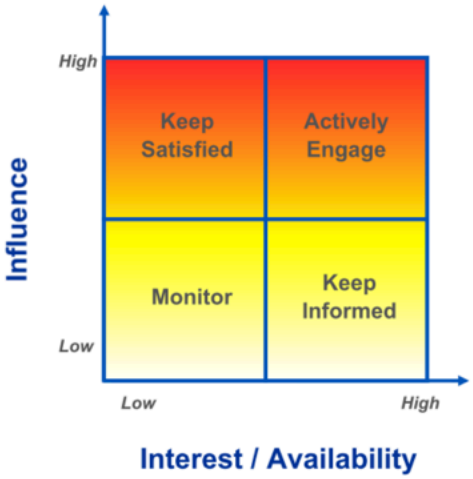
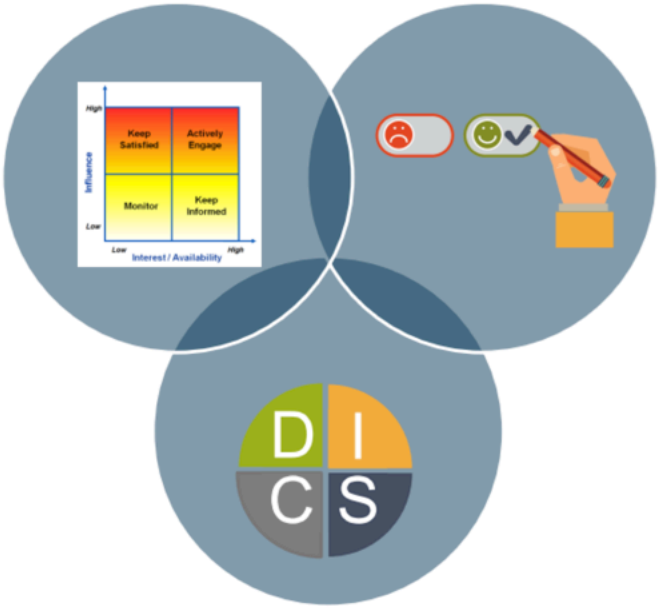
Stakeholder Management Toolbox

Stakeholder Mapping





DISC Personality Assessment

Net Promoter Score (NPS)

On a scale of 0 – 10:

9-10 are Promoters | 7-8 are Passives | 0-6 are Detractors

NPS = (% of Promoters) – (% of Detractors)

A positive NPS is considered good; 50+ is considered excellent

Source: The Four Fictional Faces of Scaled Stakeholder Management (Drew Jemilo)

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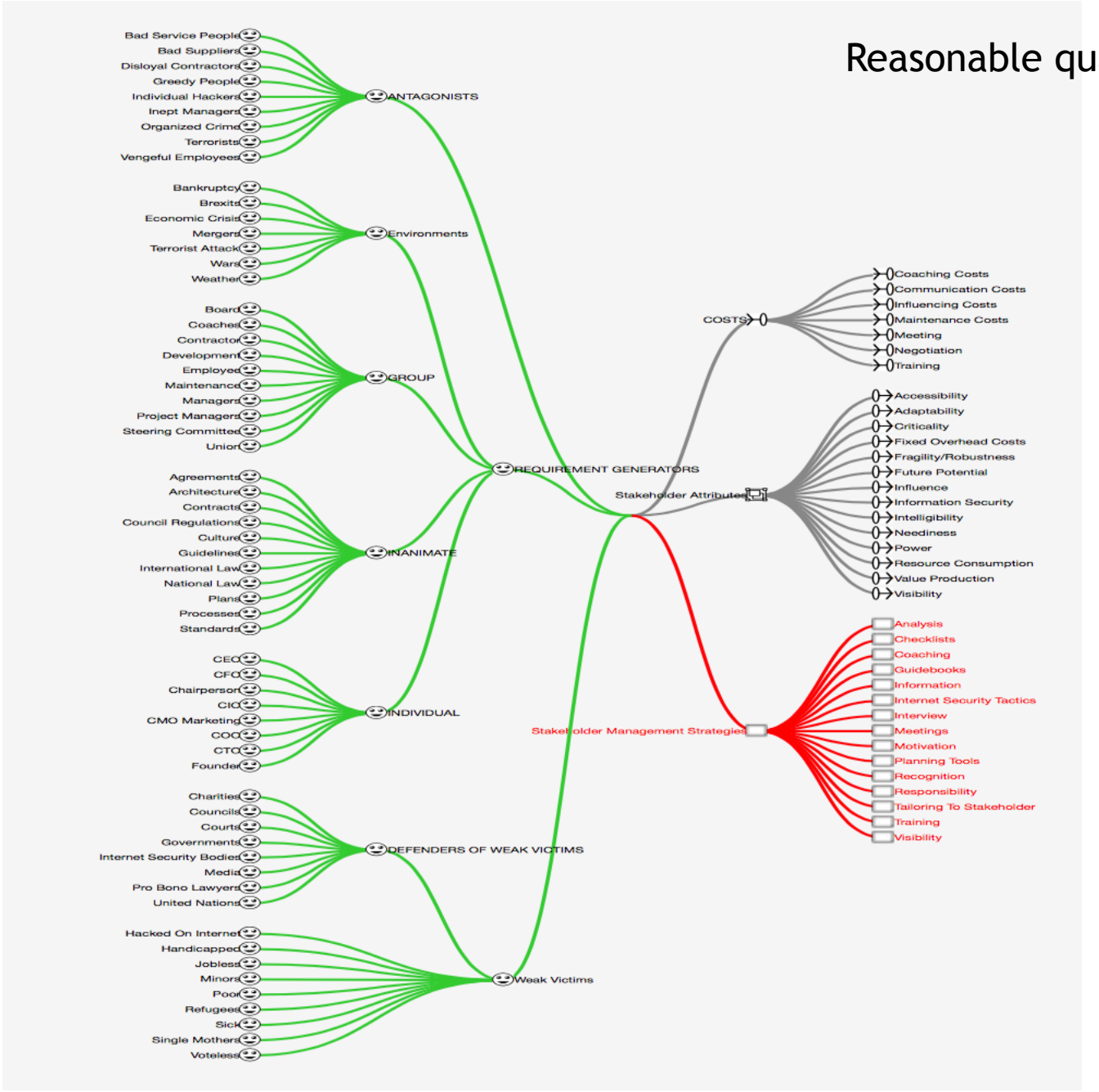
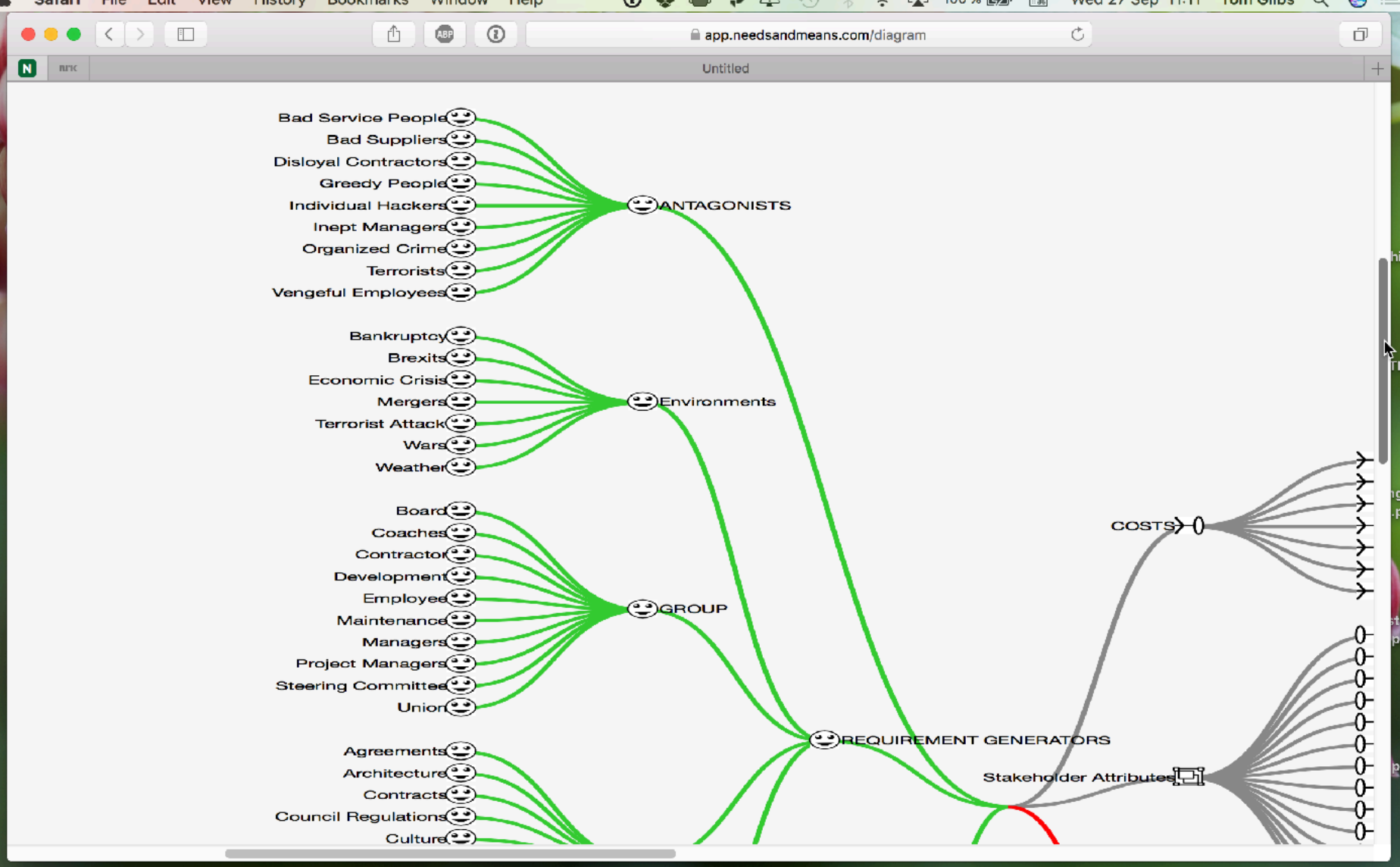
Reasonable quality



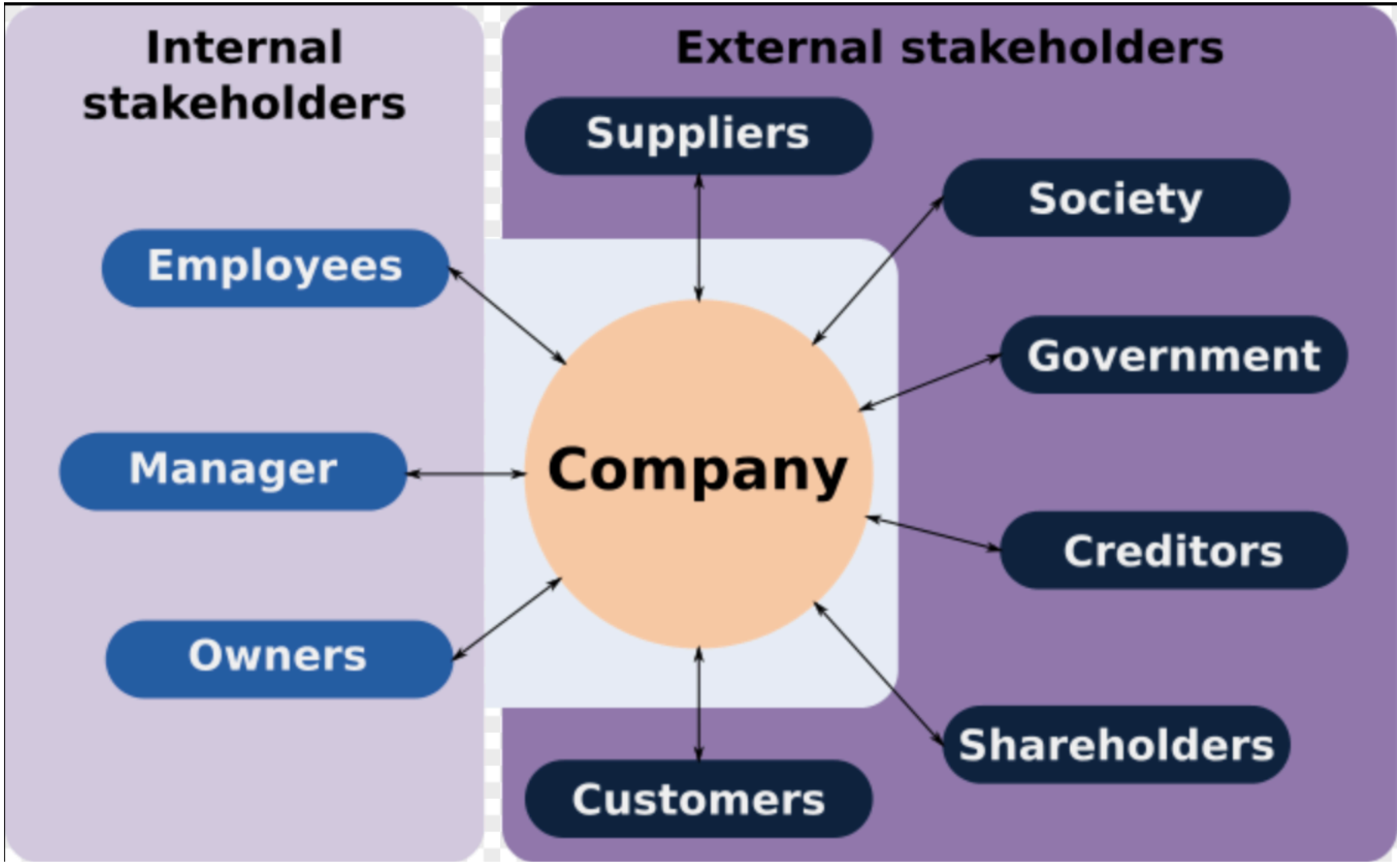

Safari File Edit View History Bookmarks Window Help
100 % Wed 27 Sep 11:11 Tom Gilbs
app.needsandmeans.com/diagram
Untitled
Bad Service People
Bad Suppliers
Disloyal Contractors
Greedy People
Individual Hackers
Inept Managers
Organized Crime
Terrorists
Vengeful Employees
ANTAGONISTS
Bankruptcy
Brexits
Economic Crisis
Mergers
Terrorist Attack
Wars
Weather
Environments
Board
Coaches
Contractor
Development
Employee
Maintenance
Managers
Project Managers
Steering Committee
Union
GROUP
Agreements
Architecture
Contracts
Council Regulations
Culture
REQUIREMENT GENERATORS
COSTS
Stakeholder Attributes

The Basic Design Steps Logic:
a summary
Notice the emergence of the Stakeholder concerns

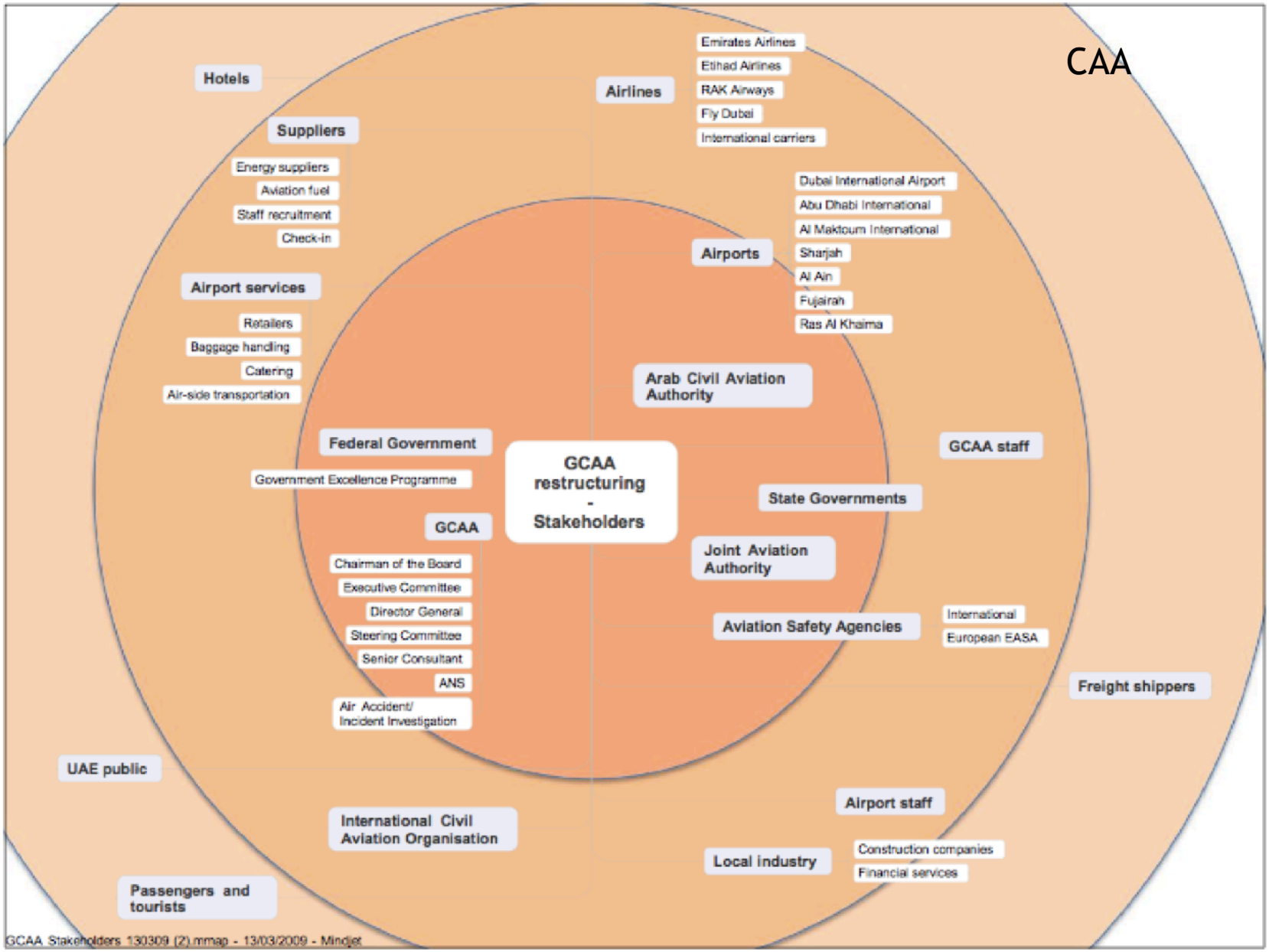
1. **Constraints determine environments.**
2. **Environments determine stakeholders**
3. **Stakeholders have values and priorities**
4. **Values have many dimensions**
5. **Stakeholders determine value levels**
6. **Design hypotheses should be powerful and efficient ideas, for satisfying stakeholder needs**
7. **Design hypotheses can be evaluated quantitatively, with respect to all quantified objectives and resources**
8. **Designs can be decomposed, to find more efficient design subsets, that can be implemented early**
9. **Designs can be implemented sequentially, and their value-delivery, and resource costs, measured**
10. **Designs that unexpectedly threaten achievement of objectives, or excessive use of resources, can be removed or modified.**
11. **Designs that have the best set of effects on objectives, for the least consumption of limited resources, should generally be selected for early implementation.**
12. **A design increment can have unacceptable results, in combination with previous increments, and they, or it, might need removal or modification**
13. **When all objectives are reached, the process of design is complete: except for possible optimization of operational resources, by even-better design.**
14. **When deadlined and budgeted implementation-resources are used up, it might be reasonable to negotiate additional resources; especially if the incremental values are worth the additional resources.**

The Logic of Design:
Design Process Principles.
Tom Gilb, 2016, Paper.
http://www.gilb.com/dl857

SLIDES ADDED BY TOM 24 JUNE 2017, and Tuesday 30 June GilbFest



https://en.wikipedia.org/wiki/Stakeholder_theory#/media/File:Stakeholder_(en).svg


CAA
GCAA restructuring - Stakeholders
Hotels
Suppliers
Energy suppliers
Aviation fuel
Staff recruitment
Check-in
Airport services
Retailers
Baggage handling
Catering
Air-side transportation
Airlines
Emirates Airlines
Etihad Airlines
RAK Airways
Fly Dubai
International carriers
Airports
Dubai International Airport
Abu Dhabi International
Al Maktoum International
Sharjah
Al Ain
Fujairah
Ras Al Khaima
Arab Civil Aviation Authority
Federal Government
Government Excellence Programme
GCAA
Chairman of the Board
Executive Committee
Director General
Steering Committee
Senior Consultant
ANS
Air Accident/ Incident Investigation
GCAA staff
State Governments
Joint Aviation Authority
Aviation Safety Agencies
International
European EASA
Freight shippers
UAE public
International Civil Aviation Organisation
Airport staff
Local industry
Construction companies
Financial services
Passengers and tourists
GCAA Stakeholders 130309 (2).mmap - 13/03/2009 - Mindjet

Impact assessment table

Purpose: to assess the current and future commercial importance of stakeholders in a value network.

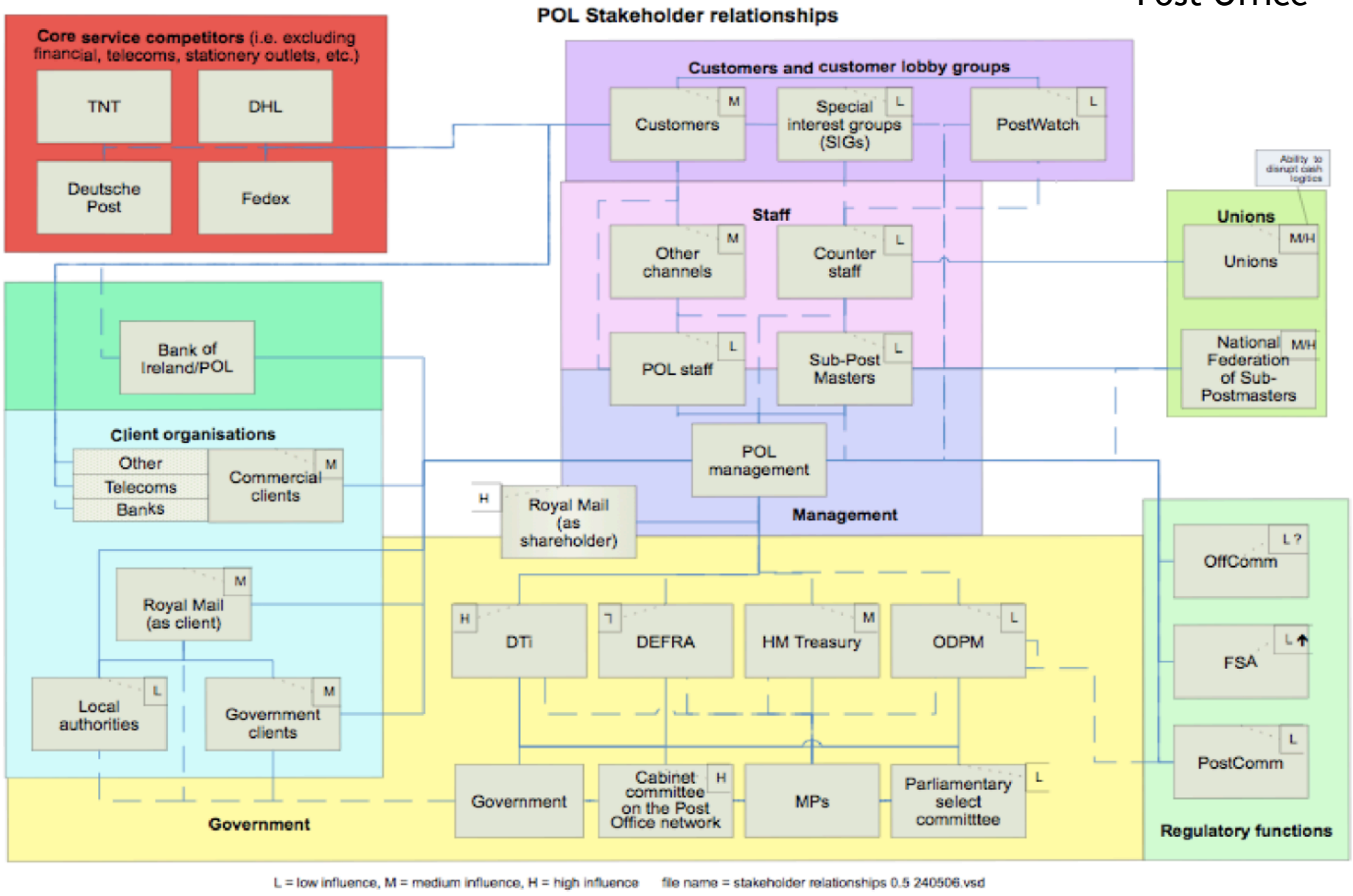
Current importance is impacted by the introduction of new technology.

Notes

Stakeholder	Stakeholder type	Current importance of stakeholder in value network	Future importance of stakeholder on introduction of new technology	Propensity of stakeholder to change from current to future role in the value network	The scores in this tables are represented t thickness of the connections between the stak in the value network. The connections are sh value network map generated by uploading th worksheets to kumu.io

Label	Type	Description	Current importance	Future importance	Propensity to change	The headings of the columns in this row recuired for the upload to kumu.io
Standards organisation	Certifier		4	4	1	Scoring
eTailer	Retailer		2	3	5	5 = very high importance
Brand owner manufacturer	Brand		5	4	3	4 = high importance
Content processor	Production factory		5	5	4	3 = medium importance
Advertising agencies	Cooms		3	4	4	2 = low importance
Distributor	Distributor		2	3	3	1 = very low importance
Design agency	Agency		2	4	4	
Health and safety regulator	Certifier		5	5	2	The double space between Design and in cell A9 inserts a return so the Label a on two lines in the kumu map.
Content packager	Service provider		5	5	2	

Post Office


POL Stakeholder relationships
Core service competitors (i.e. excluding financial, telecoms, stationery outlets, etc.)
TNT
DHL
Deutsche Post
Fedex
Customers and customer lobby groups
Customers
M
Special interest groups (SIGs)
L
PostWatch
L
Staff
Other channels
M
Counter staff
L
POL staff
L
Sub-Post Masters
L
Unions
Unions
M/H
National Federation of Sub-Postmasters
M/H
Bank of Ireland/POL
Client organisations
Other
Telecoms
Banks
Commercial clients
M
POL management
Management
H
Royal Mail (as shareholder)
Royal Mail (as client)
M
DTi
H
DEFRA
HM Treasury
M
ODPM
L
Local authorities
L
Government clients
M
Government
Cabinet committee on the Post Office network
H
MPs
Parliamentary select committtee
L
Government
OffComm
L ?
FSA
L
PostComm
L
Regulatory functions
L = low influence, M = medium influence, H = high influence
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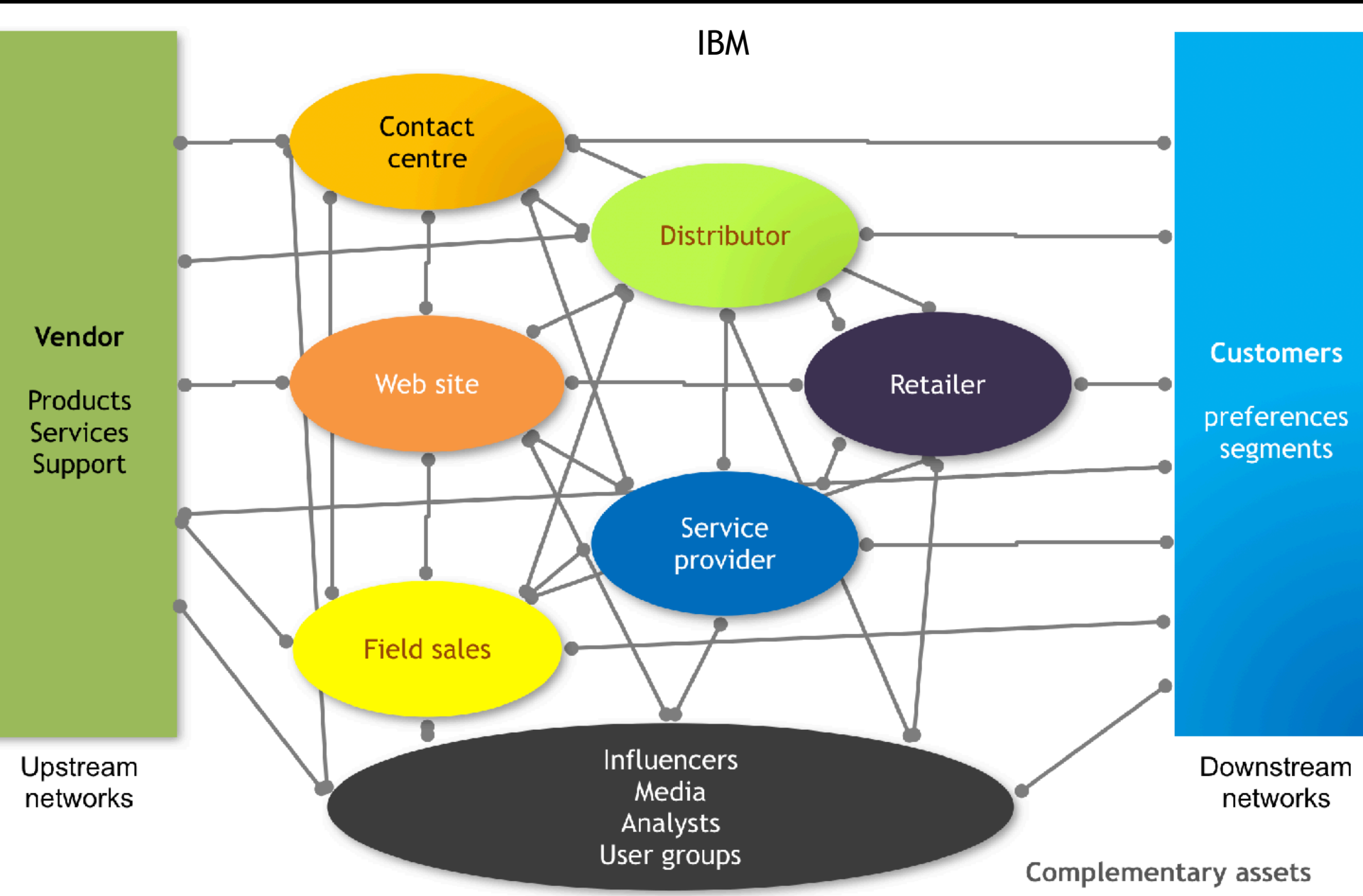
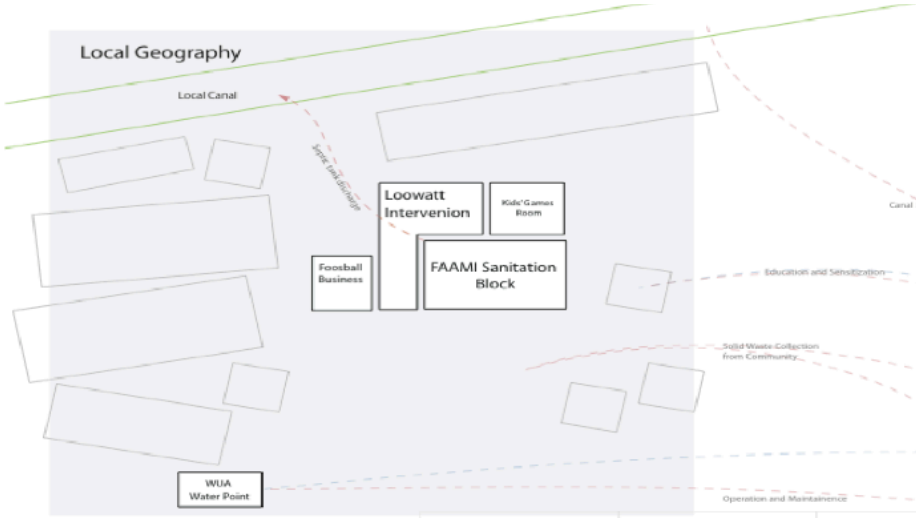
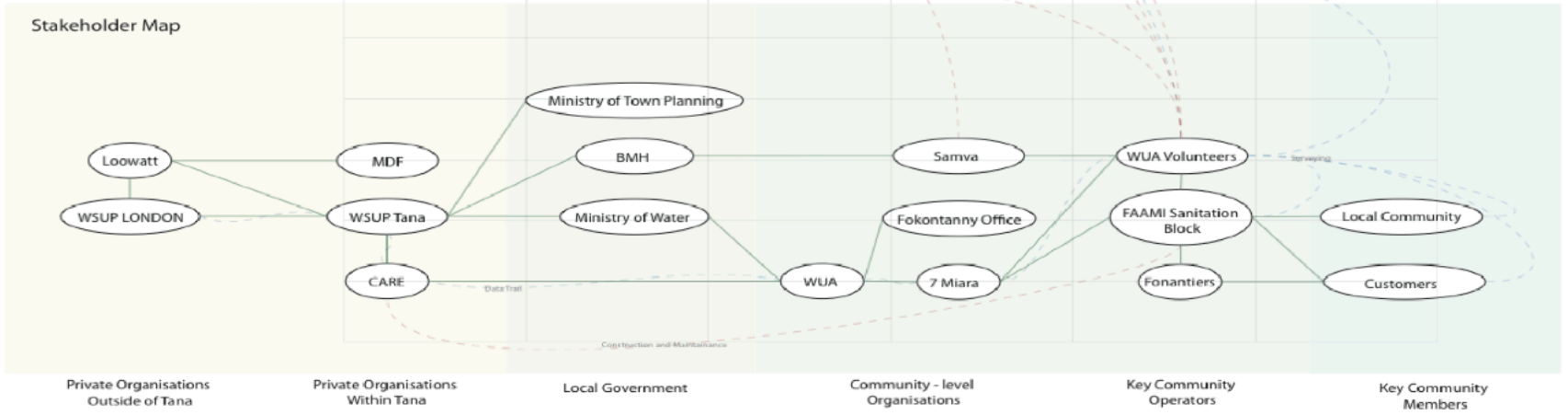
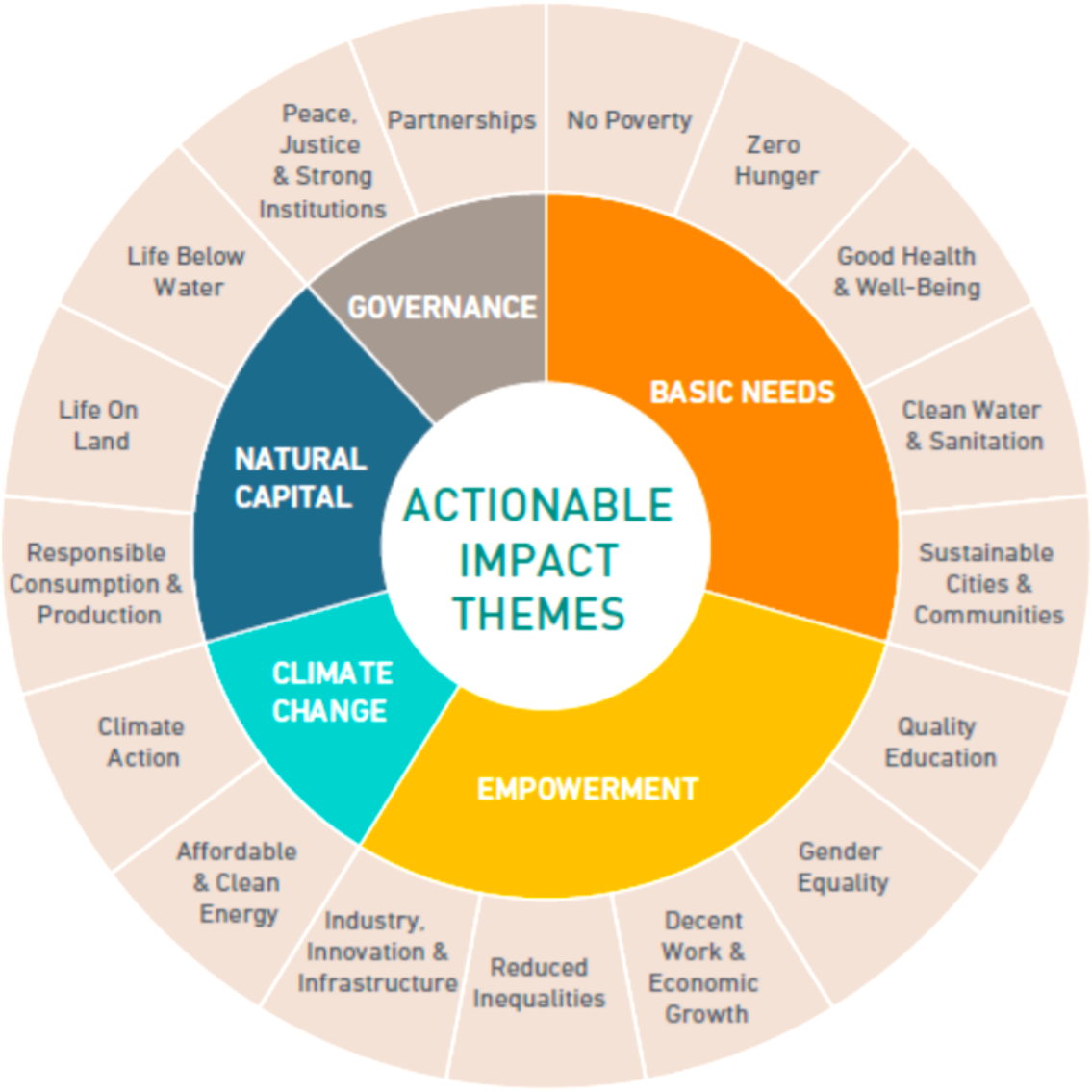

IBM
Contact centre
Distributor
Web site
Retailer
Service provider
Field sales
Influencers
Media
Analysts
User groups
Vendor
Products
Services
Support
Customers
preferences
segments
Upstream networks
Downstream networks
Complementary assets



Stakeholder Connections



IMPACT STAKEHOLDERS



https://www.linkedin.com/pulse/3-reasons-why-impact-investing-becoming-mainstream-cynthia-ringo

Business Objectives v1.5 (sample)

Customer wants to...		*So, the current strategy is to...*	*If so, Customer would see...*	*Through the following metrics...*	*As measured by...*	*Monitored by...*	*Moving from...*	*To...*	
Business Objective	**Subordinate Objective**	**Outcomes Required**	**Measure**	**Metric**	**Meter**	**Monitor**	**Now**	**Target**	**Priority (H/M/L**
1. To create a new IT architecture that will be used by Customer in the future and will enable us to remove reliance on the Customer legacy systems.	1.1 To choose set of Software development tools that can be used by all of Customer IT	A chosen set of Software development tools used by all of Customer IT: - Agreed set of tools - Implemented - Customer staff trained - Sustainable - Workable within the Customer ISMS (and UK legislation)	- Agreement between key Stakeholders has been achieved before development effort gets too great. - A documented evaluation of the tool has been completed. - Does a tool pass or fail a formal review after a period of use. - Formal training course is available and course completion is tracked and signed off by the team lead.	- Agreement reached Y/N - Evaluation is completed Y/N - Formal Review is completed Y/N - For each person using the tool, training course completion is signed off	- Tracking Sheet for each Tool. - For each person, Training Tracking Sheet for the tools used.	- Tool Tracking Sheets: Adam Bright - Training tracking sheet: Product team (Adam?)	Nothing for the new technology environment.	Implement tracking sheets for each new design documentation tool *from now*.	H
	1.2 To choose a set of design documentation tools that can be used by all of Customer IT	A chosen set of Design documentation tools used by all of Customer IT: - Agreed set of tools - Implemented - Customer staff trained - Sustainable - Workable within the Customer ISMS (and UK legislation)	- Agreement between key Stakeholders has been achieved before development effort gets too great. - A documented evaluation of the tool has been completed. - Does a tool pass or fail a formal review after a period of use. - Formal training course is available and course completion is tracked and signed off by the team lead.	- Agreement reached Y/N - Evaluation is completed Y/N - Formal Review is completed Y/N - For each person using the tool, training course completion is signed off	- Tracking Sheet for each Tool. - For each person, training tracking sheet for the tools used.	- Tool Tracking Sheets: ? - Training tracking sheet: ?	Nothing formally identified. Currently - Excel - yEd - JIRA - Confluence.	Implement tracking sheets for each *new* technology tool *from now*.	H
	1.3 To prove that we can remove reliance on the legacy system	Show we can remove reliance on the legacy system: - A POC has been built and is demonstrably sustainable within the context of a migration plan for the legacy systems	- Migration Plan exists - POC has been commissioned (to build one or more digital services in the new technology environment and to implement them) - A Sustainability Evaluation has been completed.	- Migration Plan completed Y/N - POC has been completed Y/N - Sustainability Evaluation completed and the POC has passed / failed and why.	Tracking Sheet for the POC.	Damon Petta	Nothing.	POC Passed.	H

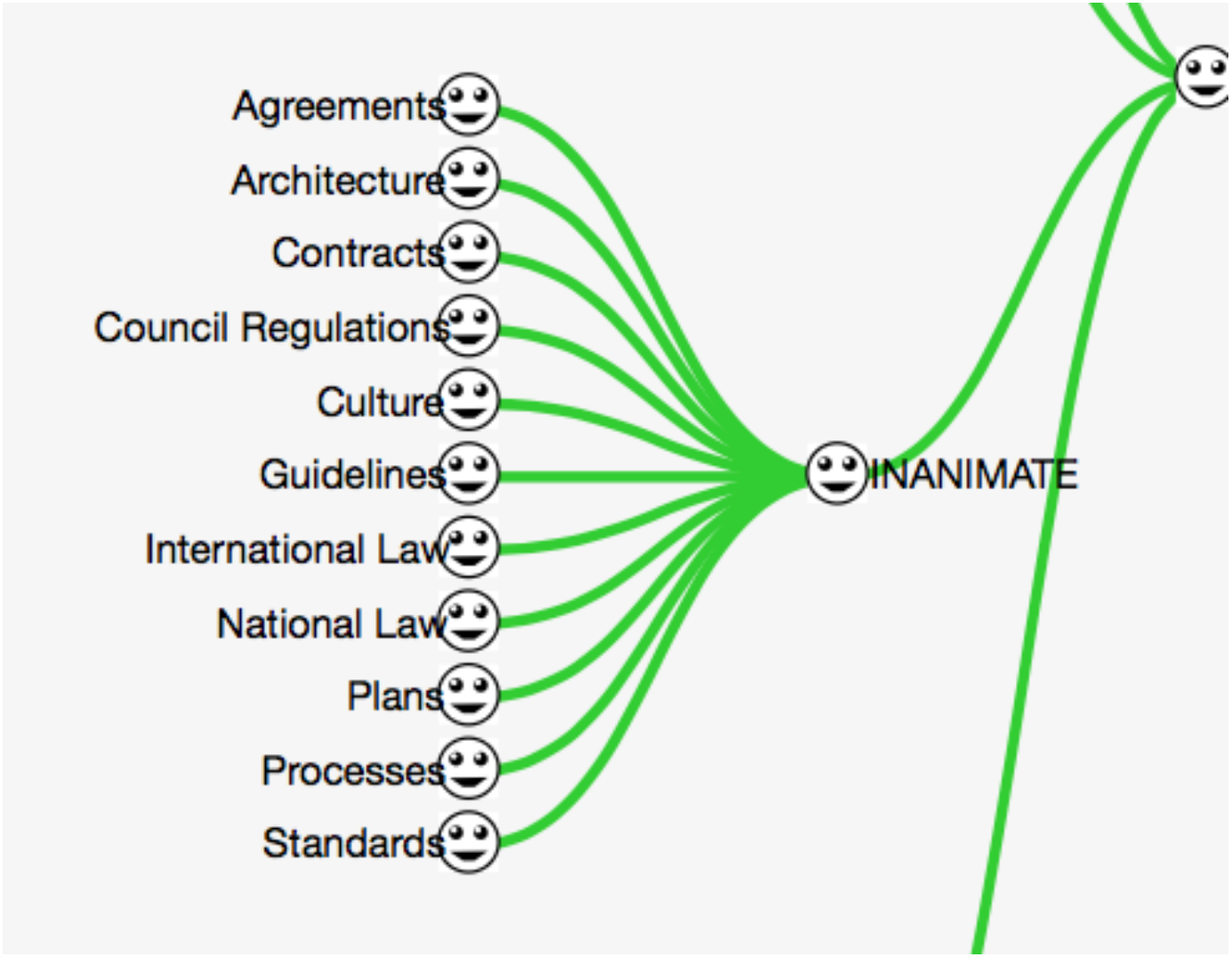
Stakeholder Value delivered #1

		Business Objectives July 2016:				Value delivered					
	Type of Req	Requirement Description	Outcome required	What achieved?		The Customer	EW	3SP1	3SP2	IT Director	Dev Teams
1	Business Objective	1. To create a new IT architecture that will be used by the Customer in the future and will enable us to remove reliance on the Customer's legacy systems.	Value required: - Agreed IT Architecture to use - Agreed IT Analysis and Design standards and tools to use - Agreed IT Development standards and tools to use - Agreed IT Testing standards and tools to use - IT System Implementation and Operating standards to use - To demonstrate how the new technology delivers real business value	- The Customer employed an IT Architect who is developing the new IT architecture in parallel to current development - IT Analysis and Design standards and tools identified and agreed. All these standards have been successfully implemented. - IT Development standards and tools agreed but some replaced by new Customer developers brought onto the team who wanted to use the tools with which they were familiar - Only system development team to fully utilise JIRA - System testing standards agreed although testing toolset "evolved". - System implementation standards reviewed and recommendations made and agreed - still to be implemented.	Pre-Jun 2017	Most of the original outcomes required were achieved. Some new (middleware) requirements have been introduced since by the Customer and although these have presented some problems, the Customer realise that this is for reasons outside the control of this project.	EW have established a good reputation in general and especially for the BA work done.			As part of the Business Analysis, a review of the Customer-3SP1 service contract highlighted serious risks to be addressed, on which the IT Director has subsequently acted.	Better defined standards and better quality QA. "Best defined system ever" in the Customer <-Customer Development Manager, Mar 2017
					Post Jan 2018						New system designed for adaptability and easy maintenance.
2	Business Objective	2. To build a set of Customer Energy services to enable us to interact with the SMETS 2 environment using the new chosen technology	Value required: - All key SMETS2 business services (workflows) identified, defined and prioritised for development - Development Roadmap identified and harmonised with key 3SPs - New system developed and tested to ensure (prioritised) requirements met - Commercial Releases of the new system agreed with the business and met on time	- All significant business workflows and supporting digital services identified and prioritised - Development Roadmap was developed, prioritised and agreed. The priorities were also agreed with the 3SP at the time. - Original commercial release not met. However, the (first version of the) most important workflows were developed and tested as much as was possible at the time. These constituted technical releases.	Pre Mar 2017	With 3SP1: - Established the fundamental system and isolated the 3SP services to specific pattern of work and hence services. - Had substantial difficulty in rationalising information environment with the 3SP Service Request input and output and eventually blocked on every workflow	- EW BA and QA teams worked closely with that of UW and shared progress and lack of it openly with all. - EW Dev team became very frustrated and disillusioned - EW provided much of the evidence required for a forthcoming legal challenge to 3SP1	3SP1 not "collaborative" and slow to respond to problems. Judged increasingly as unreliable and poor quality		System development running seriously over-budget, apparently for technical reasons.	
					Post Mar 2017	With Aprose, so far (as WIP): - Sorted out information blockers and discovered that the 3SP1 software would not have worked without substantial re-definition and development. - Progress slow to start as we re-established agreed patterns but now accelerating as supporting services required completed and tested.	- New development schedule is demanding but appreciation of the work done so far is growing	Loss of Customer to 3SP1 will have caused serious economic and reputational damage	Acquisition of the Customer was a big deal and will be of major economic benefit.	Original business decision to appoint 3SP1 taken before the IT Director was appointed. This absolved the IT Director, but the budget hole remained.	

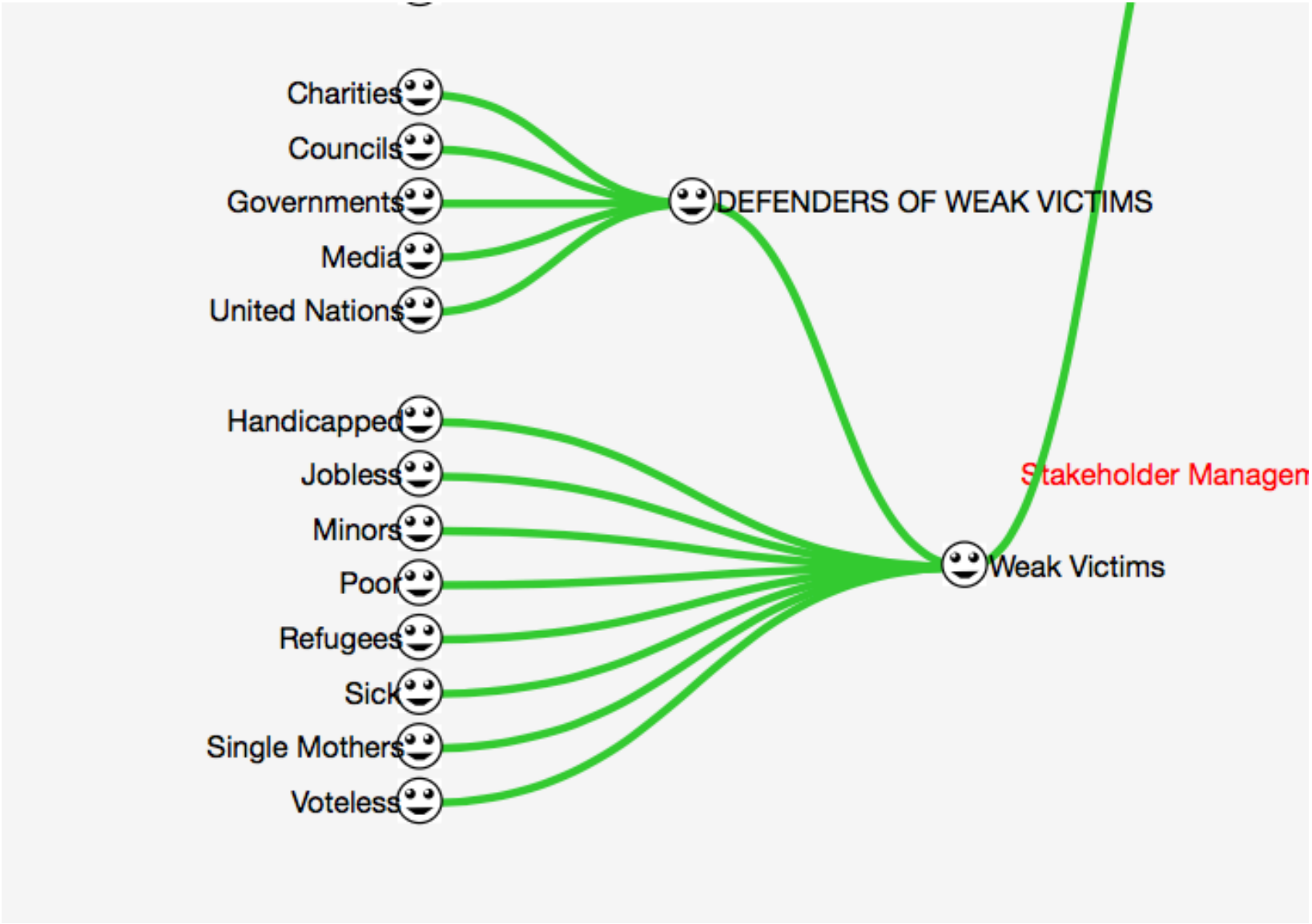
Stakeholder Value delivered #2

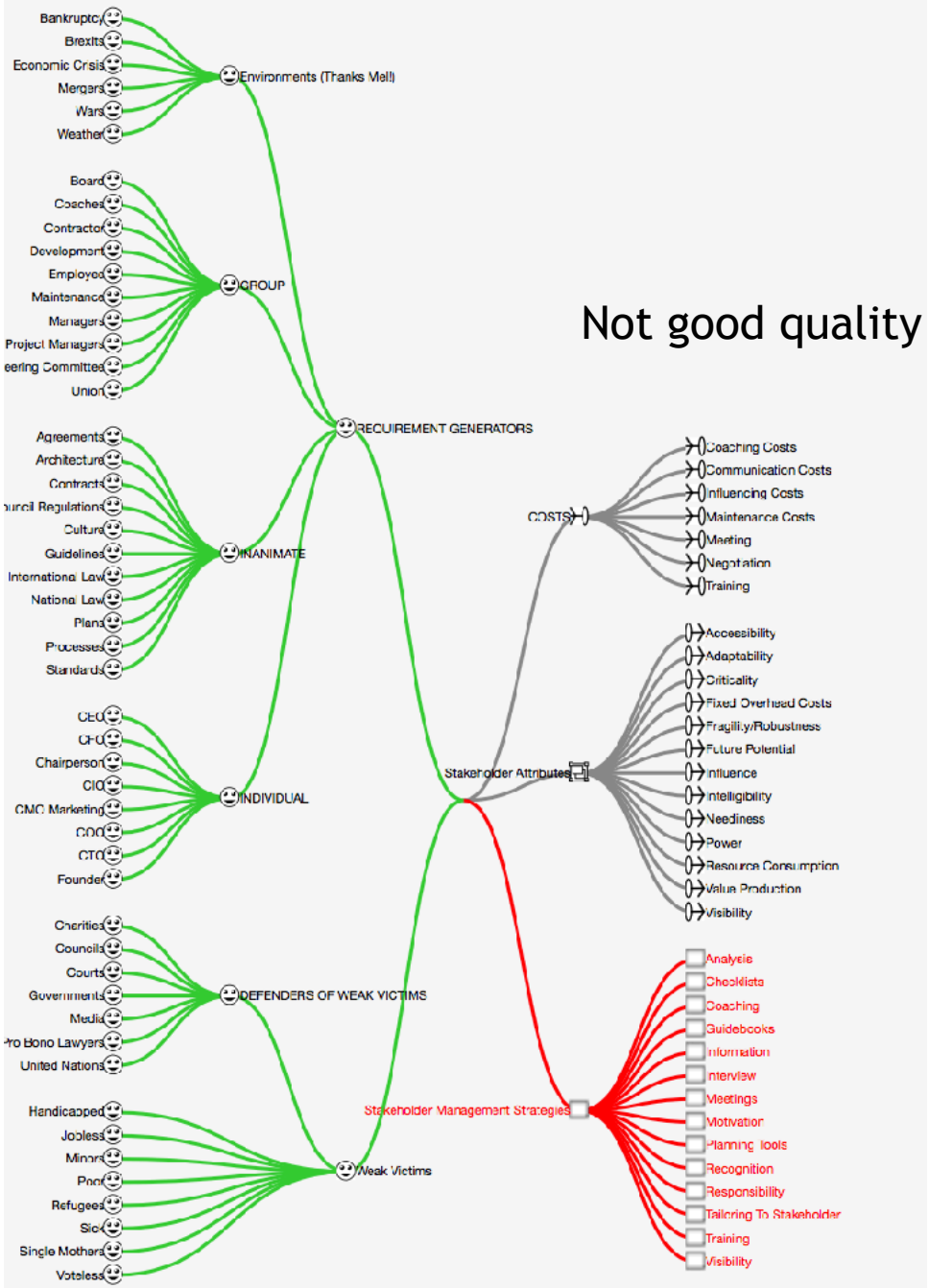
	Business Objectives July 2016:				Value delivered					
	Type of Req	Requirement Description	Outcome required	What achieved?		The Customer	EW	3SP1	3SP2	IT Director	Dev Teams
3	Business Objective	3. To integrate with the SMETS 1 environment using the new chosen technology (removing reliance on the legacy interface) (Note: This objective is incremental to objective 2 and in practice can be merged with objective 2).	Value required: - Integration requirements with existing SMETS1 and "Classic Meter" systems identified - Existing systems integrated successfully.	- The SMETS1 and Classic integration points were identified as digital services to allow for a dataset-focused and modular integration and to facilitate later deprecation of legacy systems.		😊 - Other SPs and UW systems are being integrated as services at the level of each workflow (so far successfully) - New UW middleware is the only problem area here.				😊 Service-based structure designed to integrate legacy systems and pre-SMETS2 technology 3SPs will facilitate the deprecation and decommissioning of old systems and services.	😊 New system designed for adaptability and easy maintenance.
4	Business Objective	4. To instal, commission and be able to operate the first SMETS 2 Meter by Dec 2016.	Value required: - Commercial Releases of the new system agreed with the business and met on time		Pre-Dec 2016	😐 - The DCC failed to meet deadlines and much of the industry has been experiencing difficulties, so this objective has progressively moved out				😐 IT Director under pressure to deliver on time because of impact on related projects	
5	Business Objective	5. To instal and commission 250 SMETS 2 Meters to meet the early roll out obligation	Value required: - Next level of priorities from the Development Roadmap completed - Target of 250 SMETS2 meters installed met by 1Apr2017 (initially). This also required the Customer to get Information Security clearance for itself and the appointed 3SP from the DCC.	- As a result of the difficulties above, the Customer were not able to attempt automation of the next level of automation priorities, let alone commission even one new SMETS2 meter. - The 3SP1 failed to get Information Security clearance (too many qualifications).	Pre-Mar 2017	😐 - The "early roll-out obligation" progressively moved out but the Customer was still required to meet Information Security requirements even though the 3SP1 did not, a £6m fine for not meeting this objective seems to have been avoided for the time-being (but has not been removed).				😐 - The prospect of an industry fine is greatly diminished but not removed. - This still remains an important target but now of lesser importance.	
	Business Risk	Subsequent, unwritten objective: To minimise risk of adverse impact to other objectives from a potentially rogue 3SP	Value required: - If the 3SP failed to deliver adequate services for testing, implementation or subsequent operation, provision has been made in system design and development to provide for such a failure - Monitoring of the 3SP performance was carried out and documented	- A good record of interactions with 3SP1 was kept by the Customer and EW. - As soon as the decision was made to terminate the contact with the 3SP1 a baseline of all relevant IT documentation was taken. - EW extracted from this baselined documentation much of the evidence for the legal challenge to the 3SP1.		😊 - After the EW report, the Customer monitored the 3SP1 carefully from several perspectives, not least of these, Info Security. - It is extremely likely that if the Customer had not switched to the 3SP2, staying with the 3SP1 would have cost them dearly; in development, on-going maintenance and support, not only from a direct cost perspective, but also from the indirect cost, error and time-delay perspectives.	😊 - EW highlighted the severity of the risk associated with 3SP1 on several fronts. - EW BAs were also instrumental in monitoring the activities of 3SP1 and reporting many of the deficiencies of the 3SP1 approach and analysis. - EW BAs also provided much of the evidence for the legal challenge to 3SP1 - It has since become clear that the solution provided by the 3SP1 could not have worked in some areas, let alone worked efficiently.			😊 - The IT Director was instrumental in persuading the more recalcitrant Board to switch from 3SP1. - Support from EW BAs in particular will help boost the wisdom of this move for the future.	

Inanimate Stakeholders



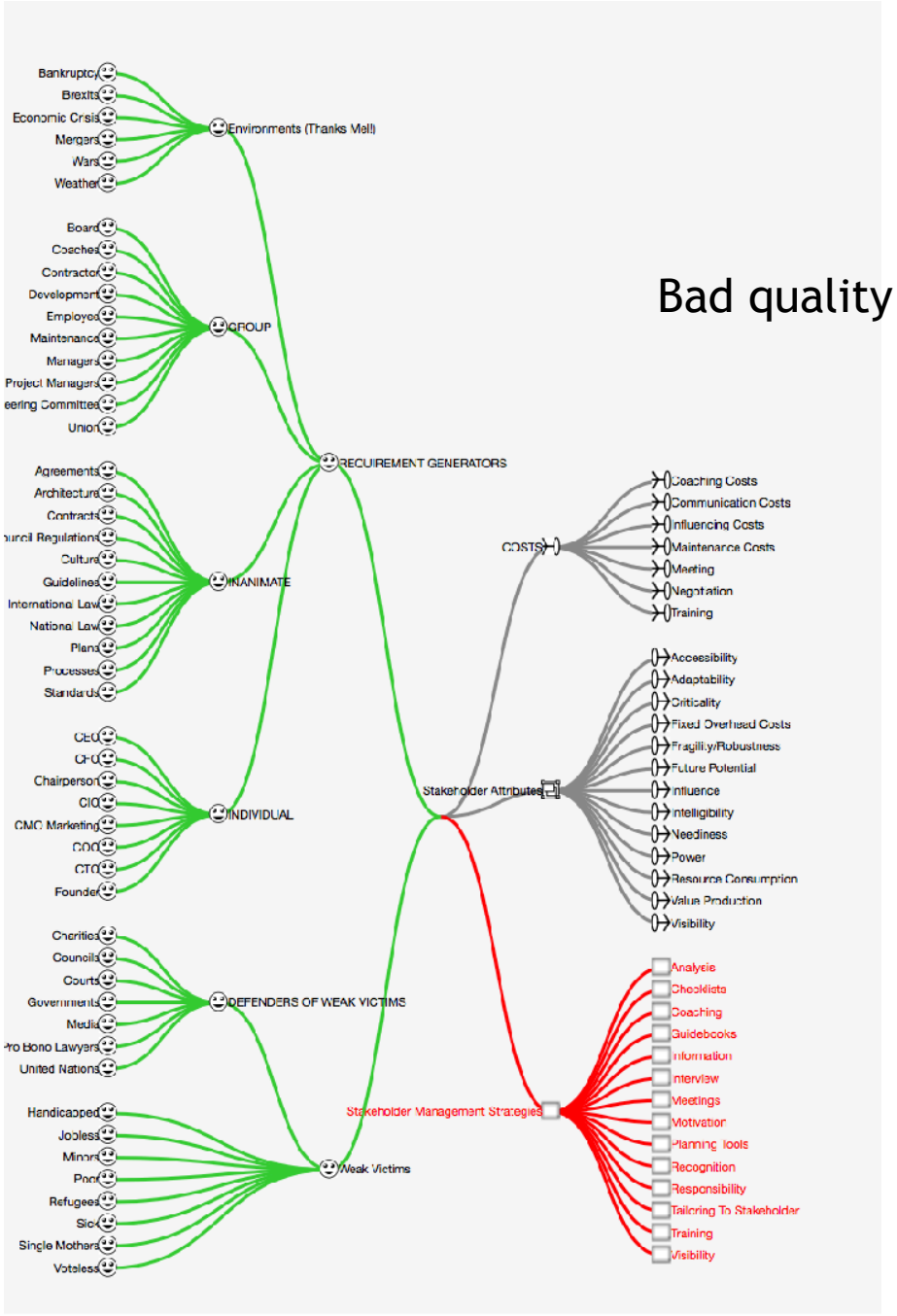
Victims and defenders





Not good quality

Stakeholder Categories



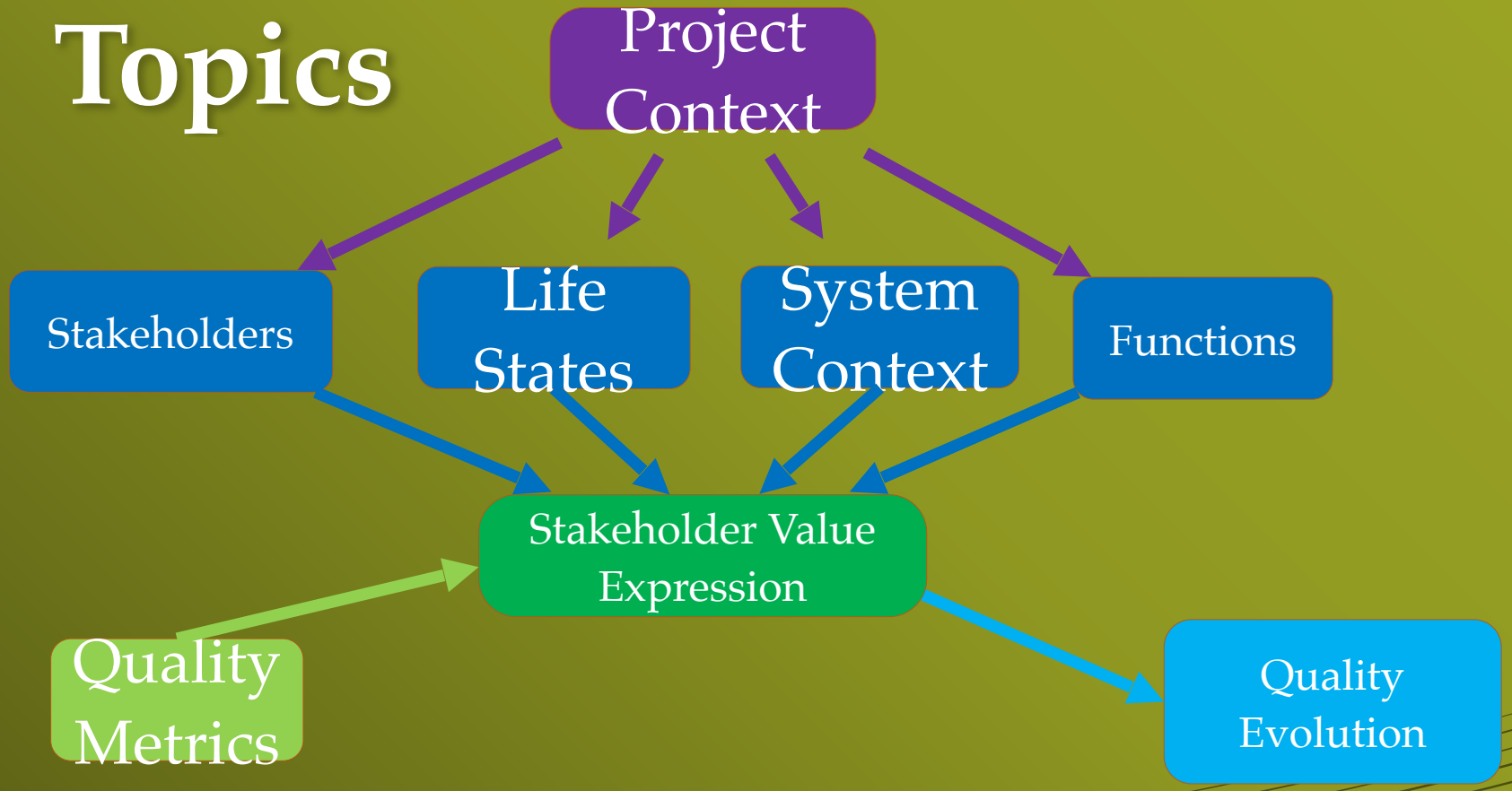
Bad quality discard 2020 tg

Stakeholder Value: Project Success

A CASE STUDY OF THE QUALITY EVOLUTION
OF STAKEHOLDER VALUE EXPRESSION
DURING THE DEVELOPMENT OF THE PROCUREMENT CONTRACT
FOR
A FLEET OF VEHICLES FOR THE NORWEGIAN ARMY, VALUED AT
3000 MILL. NOK – €330M - £273M - $360M

By Simon Wright – Systems Engineering Insultant

Topics



Project Context

Therefore I cannot tell you everything

FORSVARSMATERIELL

Landdivisjonen

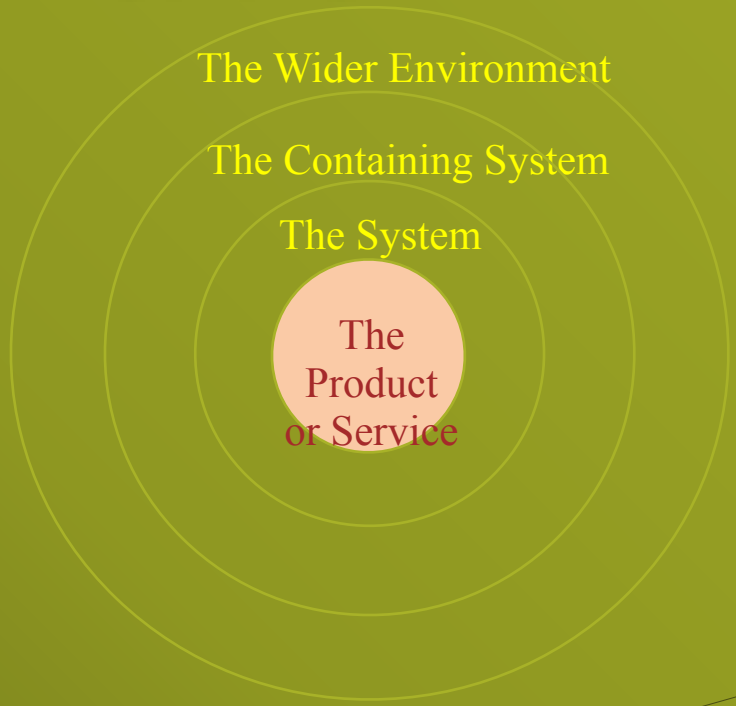
27.06.2017

My thanks go to the Land Division of the Norwegian Defence Material Agency for allowing me to present our work on Project VIDAR

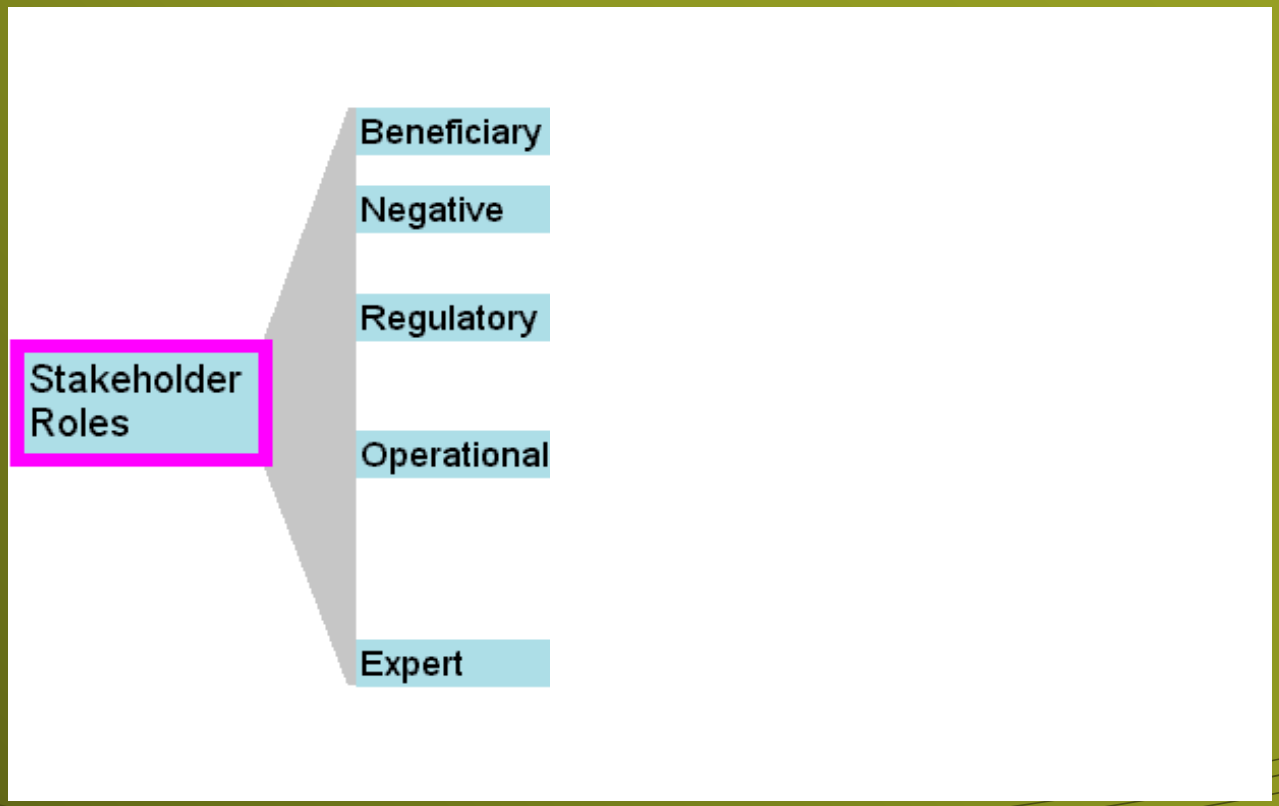
contact

Stakeholder Identification

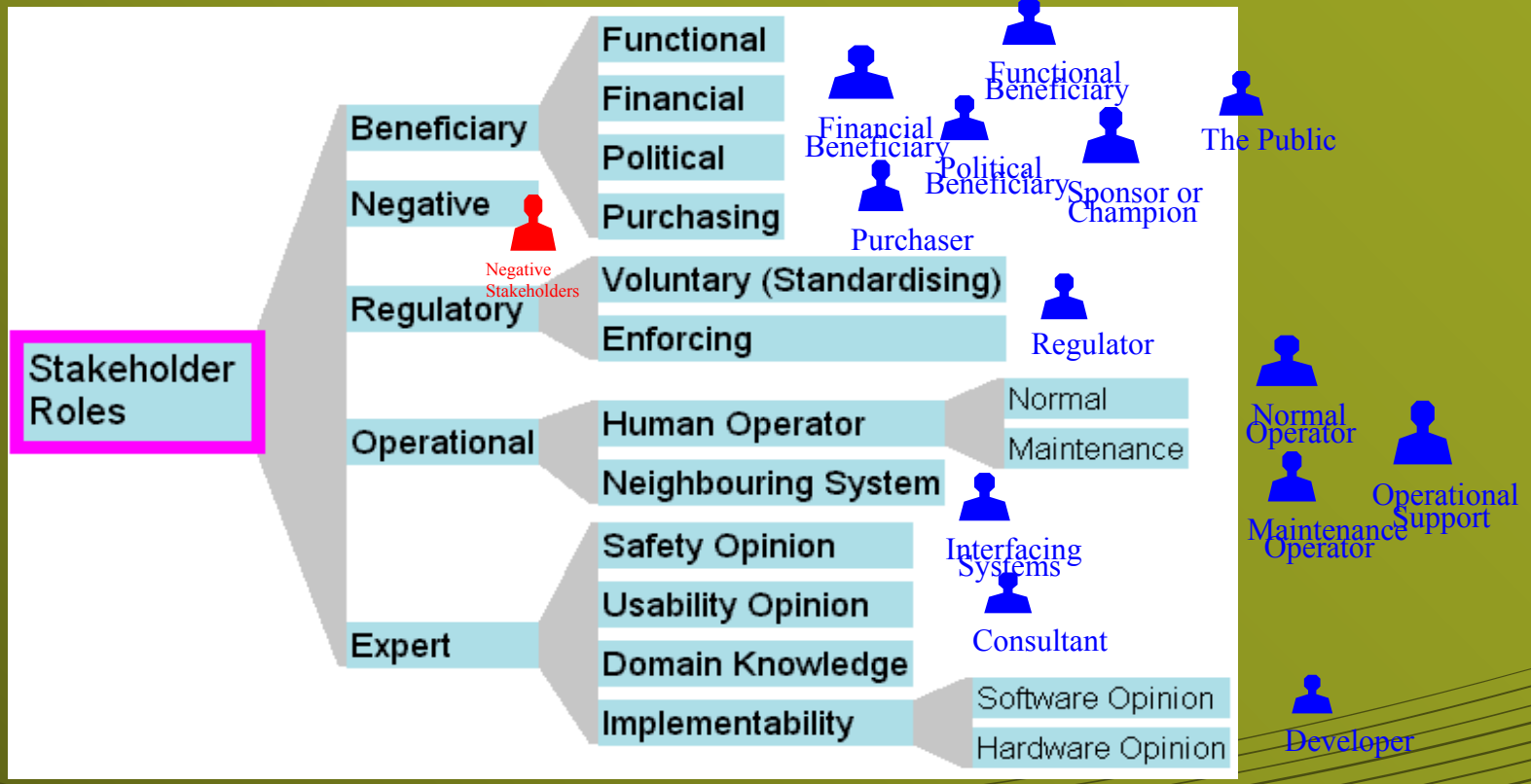
- The Product or Service
  - Contains no stakeholders
- The System (of interest)
  - The Product or Service plus the people who operate the product or deliver the Service
  - Also often includes training, support and maintenance
- The Containing System
  - Those who immediately benefit from the functions carried out by the System or Interface with it
  - Are usually, but not necessarily, different from the operators
- The Wider Environment
  - People who are affected indirectly, such as derived benefit of induced harm.



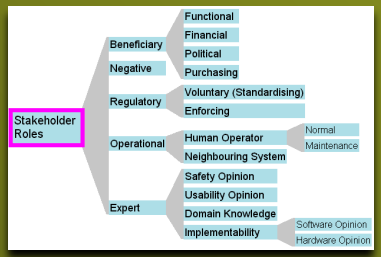
Classes of stakeholder (= role)

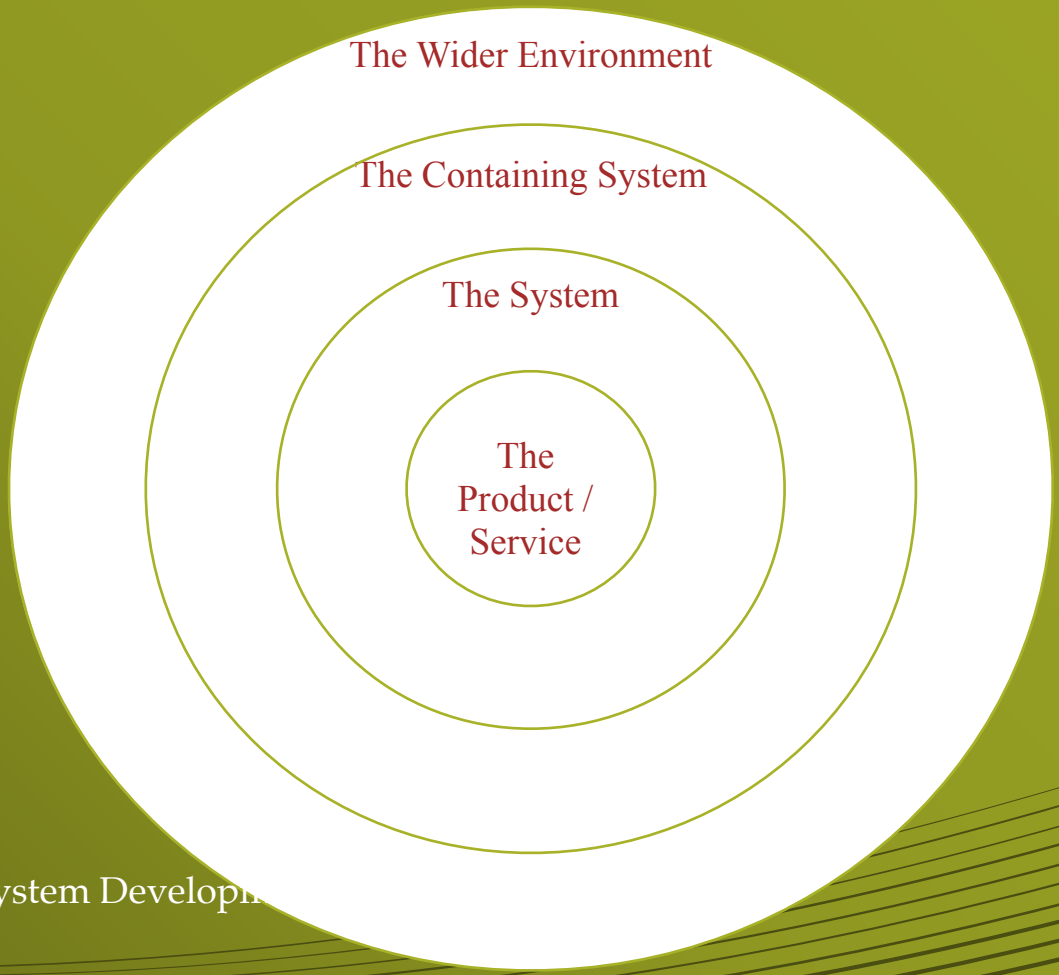


Classes of stakeholder (= role)



Roles to levels





A Taxonomy of Stakeholders - Human Roles in System Developi
Ian F. Alexander
International Journal of Technology and Human Interaction, Vol 1, 1, 2005, pages 23-59
http://www.scenarioplus.org.uk/papers/stakeholder_taxonomy/stakeholder_taxonomy.htm

SPG actual

Stakeholder Analysis

Result: A list of stakeholder roles

Output: Subjects for value statements

As a Commander I want …

As a Loader I want ….

As a Gunner I want ….

Outcome: A shared understanding.

Interfacing Systems

- Many of the domain experts spoke about the need to use systems to perform specific functions that did not feature in the Context diagrams nor in the Stakeholder diagram
- The 'missing' equipment was specific to Norway
- The description of what was needed was incomplete
- We discovered a new State – the Purchased State and a new key value.

purchased

Stakeholder Value

- can be verified
- must be met by the product in order to deliver the expected stakeholder value
- is qualified by measurable conditions and bounded by constraints
- defines performance or capability
- Expressed in a pattern
- "low resistance" to next level.

As a [Actor – who/what does the action]
I want to [Action – what happens e.g. store, update, send data]
the [Object – what is acted upon]
on/at the [Target – where the output is sent]
with [Performance - frequency and/or quality characteristic]
when [Trigger – causes of action; data receipt/user interaction]
unless/ even if [Constraint – business rule or limiting factor]
So that [Rationale - description of value or benefit is achieved].

As a Commander I want to fire (the) two shells at the target within X seconds when the cannon is loaded even if the target is outside of the maximum range

pattern

Planguage Definition

A stakeholder is

any person, group or object,

which has some direct or indirect interest

in a defined system.

Stakeholders can exercise control over

- both the **immediate system operational characteristics**,
- as well as over **long-term system lifecycle considerations**
    - (such as portability, lifecycle costs, environmental considerations, and decommissioning of the system).

Notice:

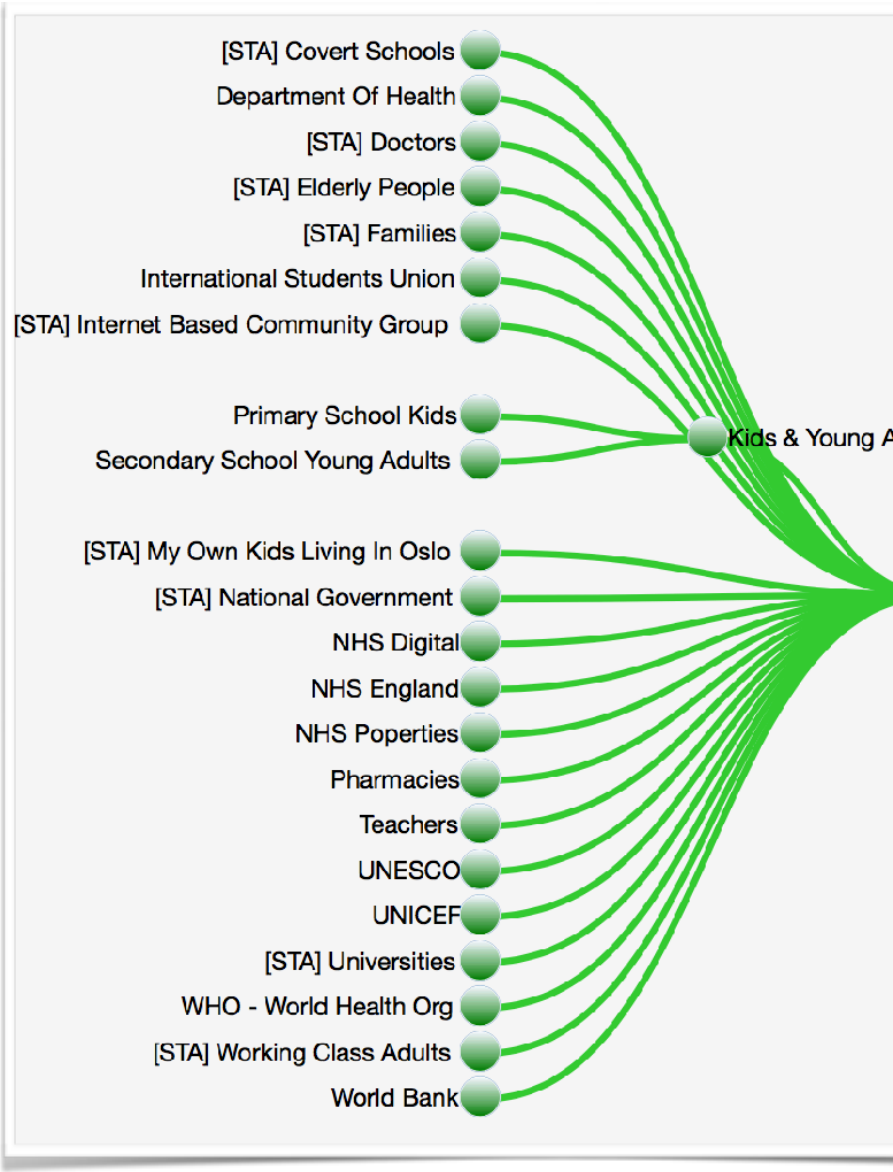
'or object'.

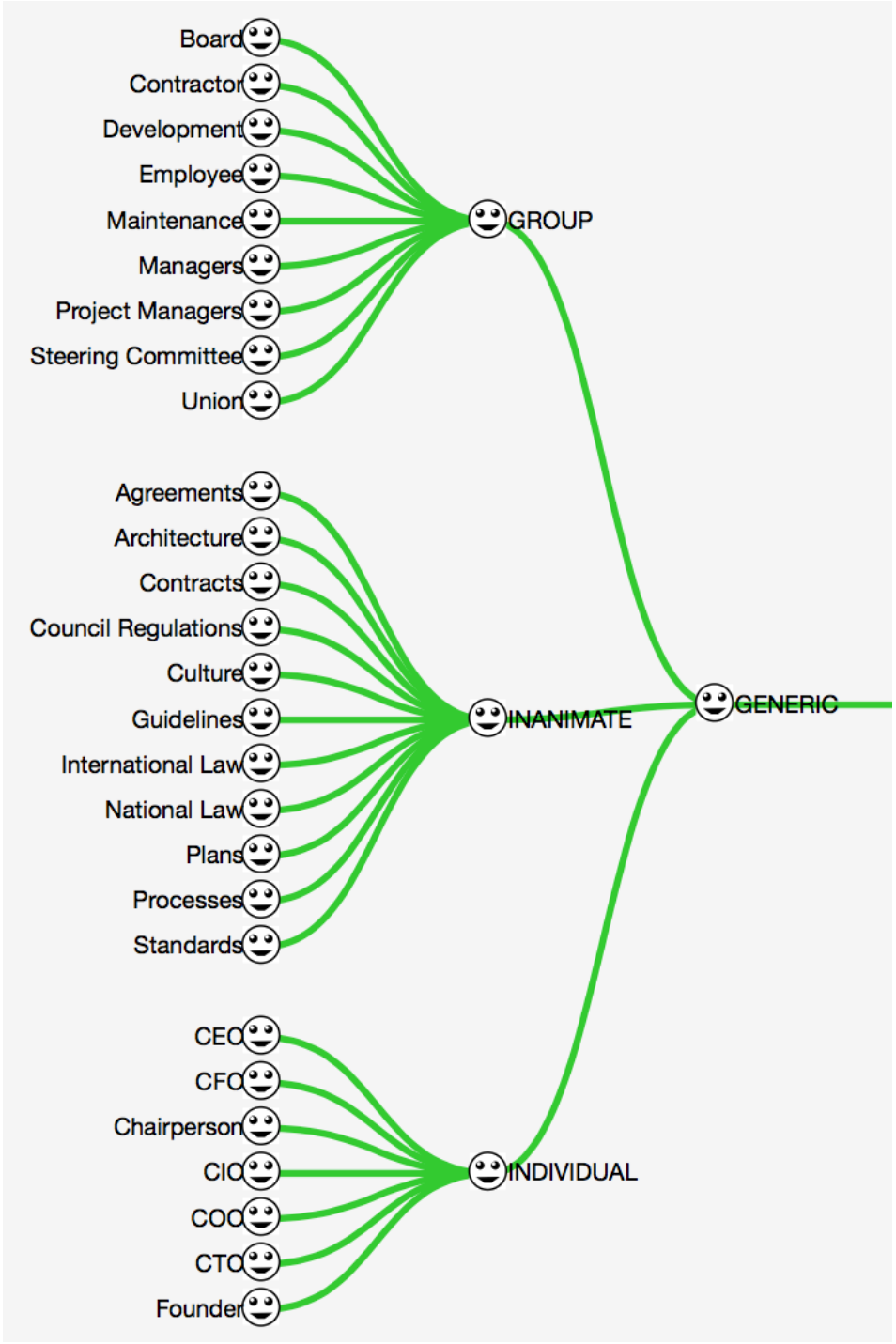
This includes laws, regulations, plans, policies, customs, culture, standards.

Inanimate.

- you cannot ask them or discuss with them.
- But you can analyze them, their priority, the degree of relevance.
- They can determine if your system is illegal, or acceptable.
- Determine success or failure.

Icon **O<-** (Source of requirement)



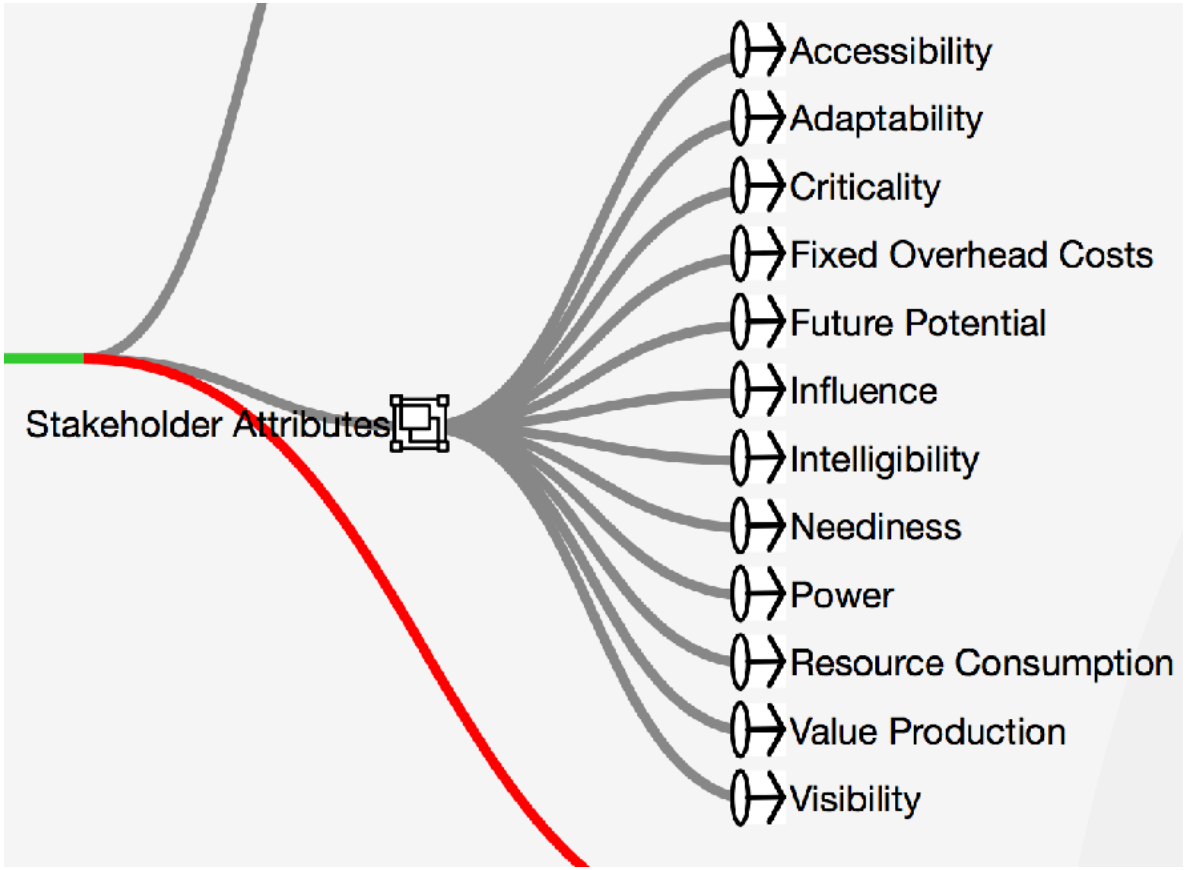


3 Basic Stakeholder Types

Groups
Inanimate
Individual

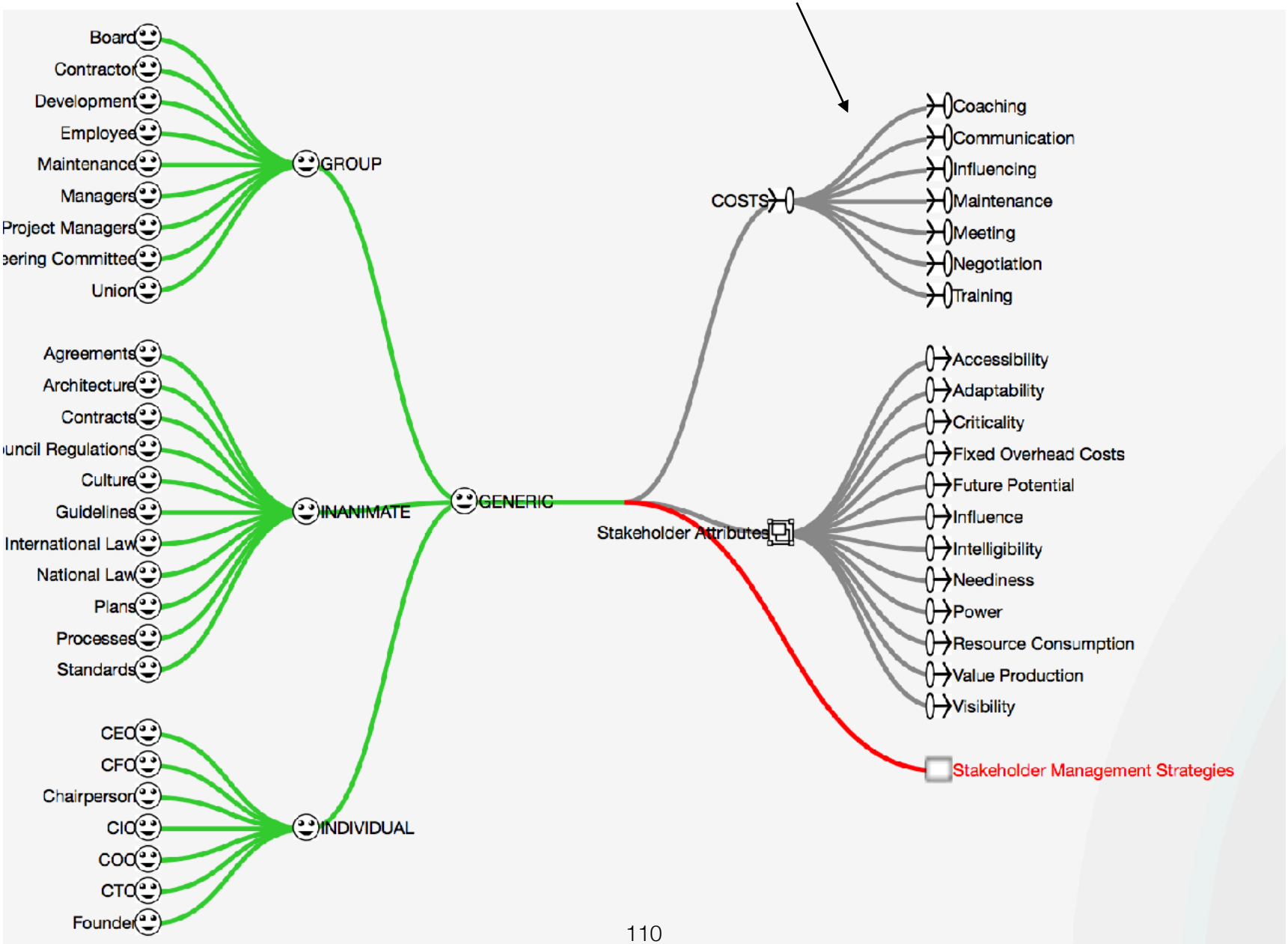
Stakeholder Attributes

- Some attributes of stakeholders
- which can be defined in more detail,
- and can be quantified
- status estimated
- and potentially *improved*

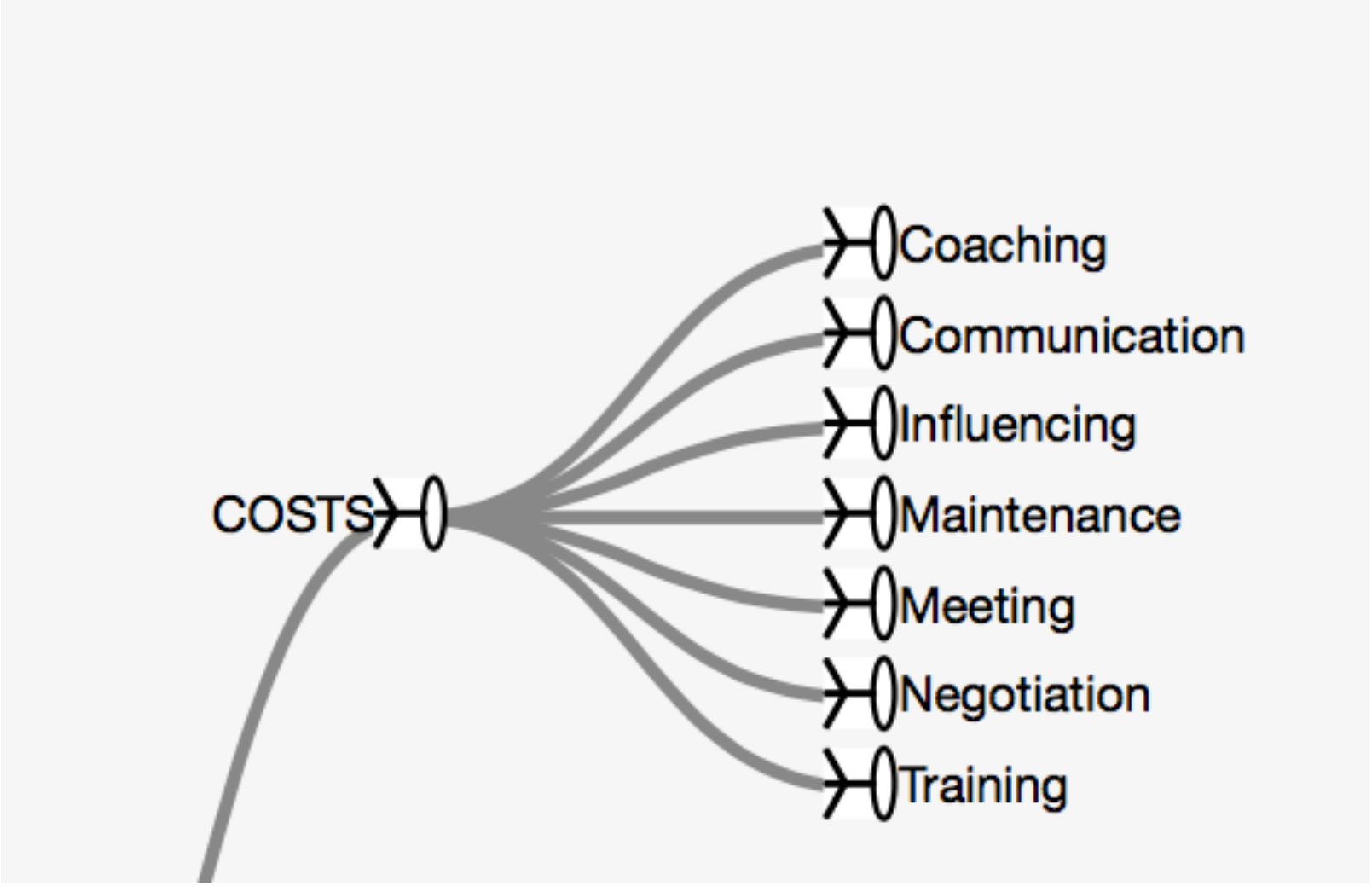


this is an arbitrary but useful, incomplete set. TsG 24 June 2017

Stakeholder Costs



Stakeholder Costs



Gilb's Stakeholder Principles.

1. Some stakeholders are more critical to your system than others.

2. Some stakeholder needs are more critical to your system than others.

3. Stakeholders are undisciplined: they may not know all their needs, or know them precisely, or know their value. But they can be analyzed, coached, and helped to get the best possible deal.

4. Stakeholders may be inaccessible, unwilling, inanimate, oppositional, and worse: but we need to deal with them intelligently.

5. Stakeholders might well ask for the wrong thing, a 'means' rather than their real 'ends'. But they can be guided to understand that. Or their requests can be interpreted in their own real best interests.

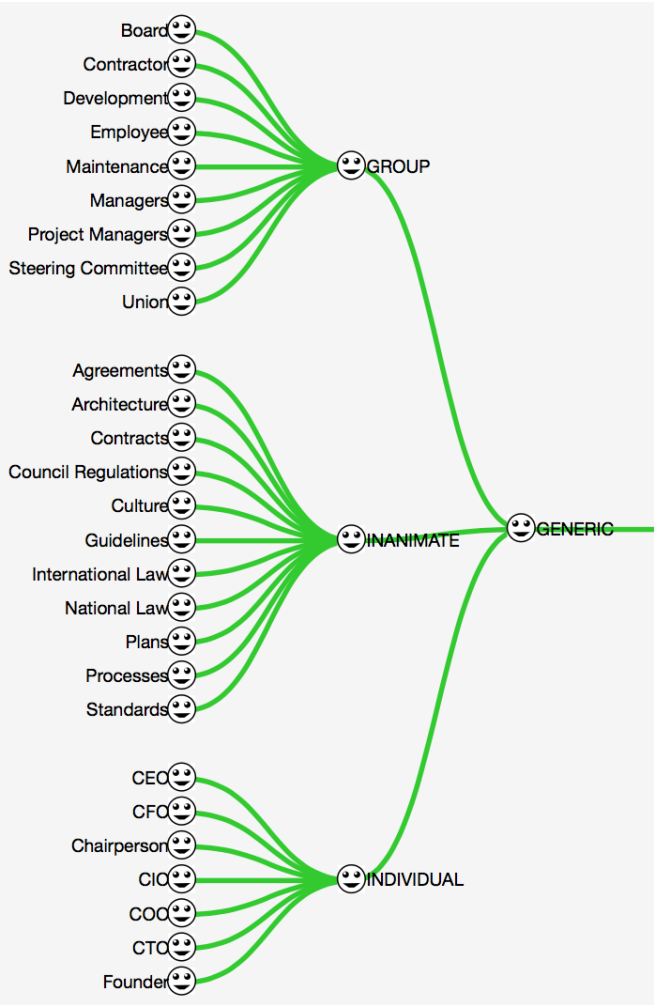
6. Stakeholders do not want to wait years, get delays, invest shitloads of money, and then little or no value. They want as much 'value improvement' of their current situation, as they can get, as fast as they can get it. For as little cost as possible,

7. Stakeholders cannot have any realistic idea of what their needs and demands will cost to satisfy. So their adopted requirements need to be based on value for costs, not on value alone. Delivering small increments, based on high value-to-cost, is one smart way to deal with this.

8. If you think you have found 'all critical stakeholders', I think you should assume there is at least one more, and when you find that one, …. They will emerge, and they are not all there at the beginning.

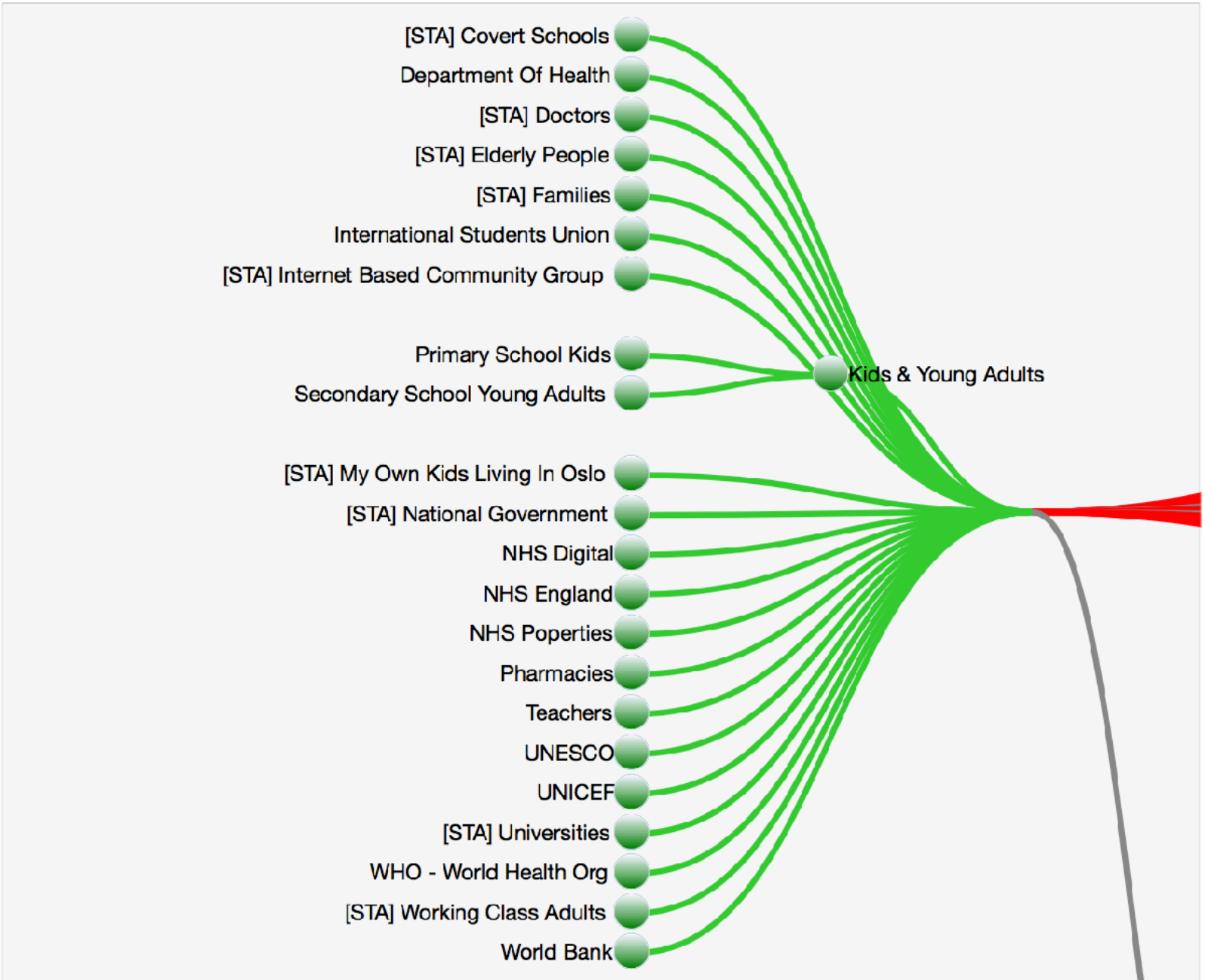
9. If you think you have found all critical *needs* of a stakeholder, there will always be *at least one more* need 'hiding'.

10. If you do not understand, and act on the principles above; you might blame your failure on 'system complexity', and the unexpected and wicked problems. But in reality, it is your own fault and responsibility; deal with it - up front and constantly.

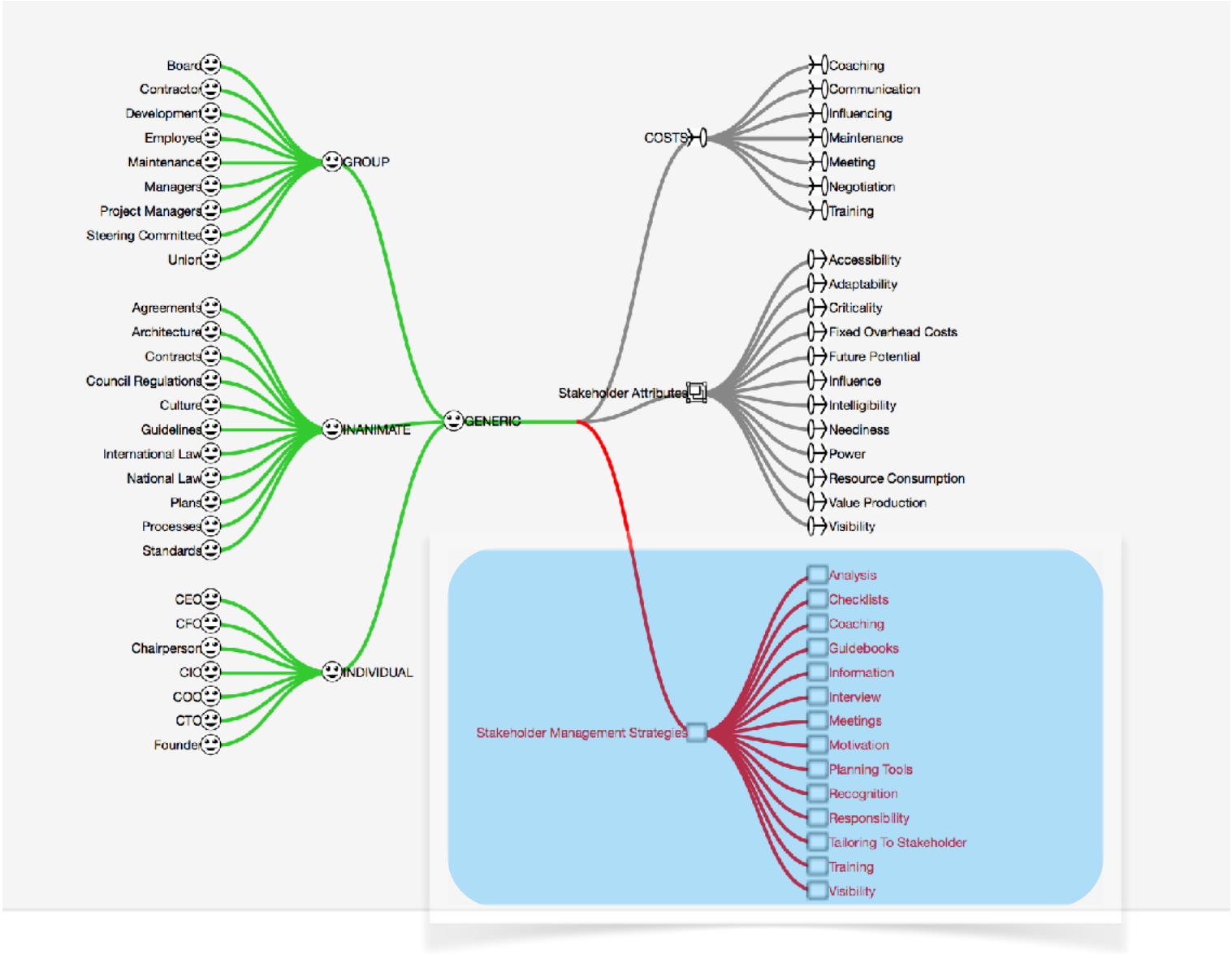


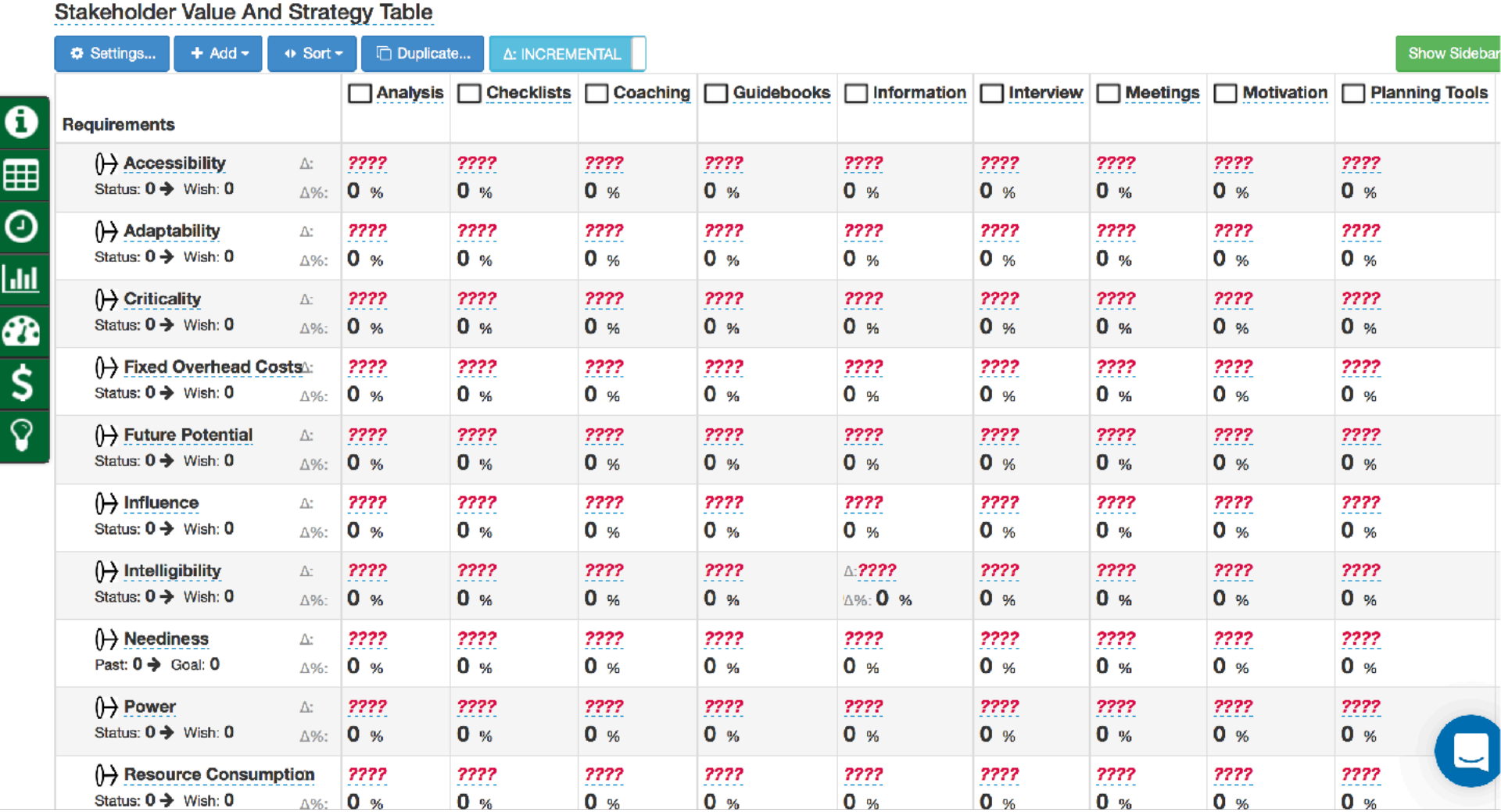
•SOURCE, 2016 Paper
"Stakeholder Power:The Key to Project Failure or Success"
including 10 Stakeholder Principles
http://concepts.gilb.com/dl880 (COPY FEB 2017)
http://concepts.gilb.com/dl872 (FEB 2016)

Stakeholder Diagram



Adding Strategies for Improving Stakeholder Attributes





Stakeholder Ends and Means

the ???? signifies that we did not yet estimate the effectiveness of the ideas for getting better

Analysis

Permalink

Level? Solution Idea Label? (by - 20 minutes ago)

0.0.1 Row: Col:

Scale:

Click inside an ir

Is Part Of: Stakeholder Management Strategies

Summary: Serious analysis of individual stakeholder types so we can have best possible relations

Description: Change... (by **tomgilb** - 2 minutes ago) 3

D1. CONVENIENCE:Determine best times and best ways to communicate with stakeholders, and to get decisions. Document this in the stakeholder object in these plans. Make sure responsible spec owners are aware of and use these possibilities.

D2. VALUE LEVELS: Determine the top 5 at least critical needs of each stakeholder type, and each major stakeholder variation (Scale Parameters). Both short term and longer term. Make estimate of the long term value of reaching suggested Goal levels

D3. Communicate, with stakeholder representatives permission, all plan changes that they are a stakeholder to, to at least the Representative Stakeholder.

D4. PLAN ACCESS: Give read access, and change incident access to stakeholder representatives who want it, to the plans.

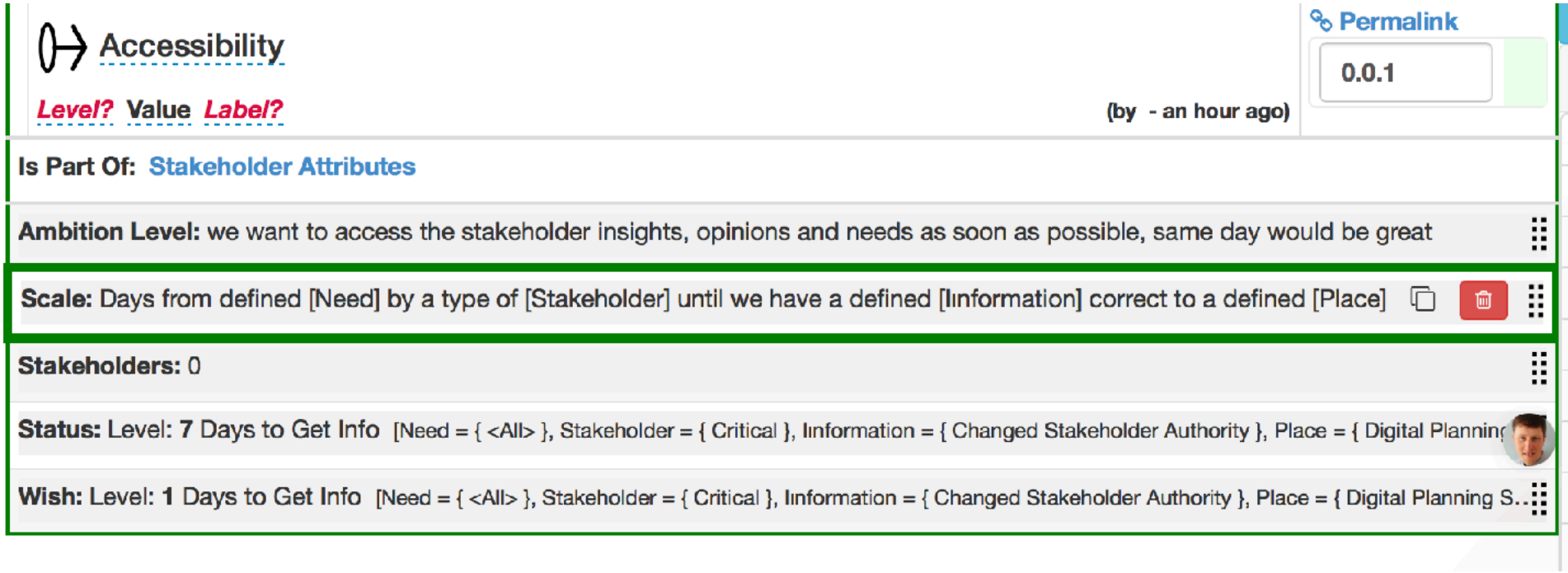
D5. CONTINUOUS CRITICISM: Create a digital stakeholder steering committee to give advice on all aspects of the plan and the project. They will have access to plans and changes, and ability to both log remarks in a common place in the plan, in comments in particular specs, to communicate with Spec Owners, and to email key named participants and managers or committees.

D6. WARNINGS: Stakeholders have the right, under their signature, in a Comment related to any aspect of the plan, at any time to remark on anything they want; but especially on predicted negative consequences of that part of the plan. The idea is that nobody can suppress such opinions. We encourage it. And it is clear and official that they did try to warn people, perhaps named peopler, who have the right to a Comment Answer, and who cannot deny that these warnings were made.

Source:

tom gilb, trying to give a reasonably good example of deep and powerful strategic planning.

‘Accessibility’ defined quantitatively



‘Adaptability’ Value defined

Adaptability

Level? Value *Label?*

(by - an hour ago)

Permalink

0.0.1

Is Part Of: Stakeholder Attributes

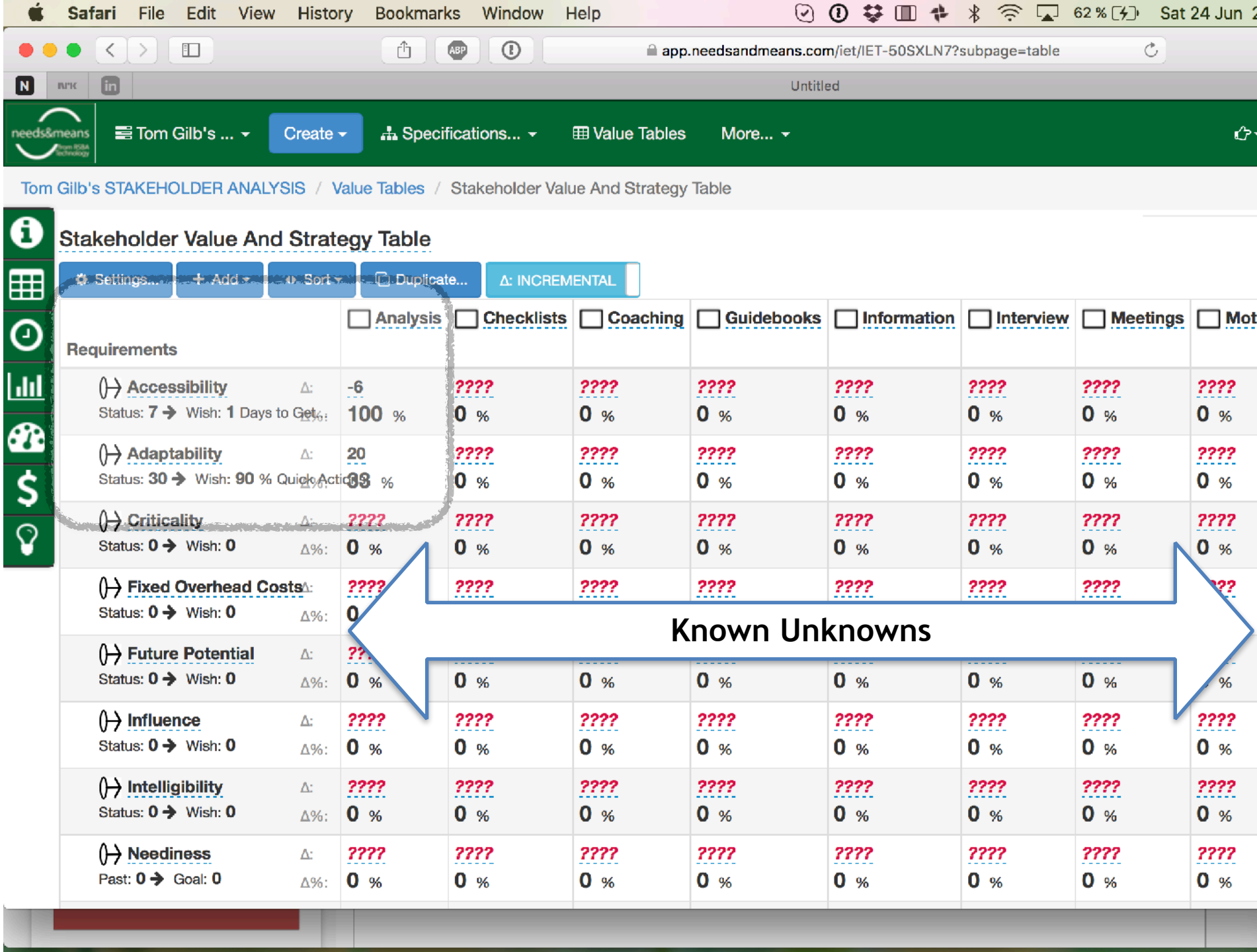
Ambition Level: give a high degree of stakeholder ability to respond to planning changes, both in seeing consequences, reviewing the..

Scale: % capability for a [Stakeholder Class] to correctly and within 5 minutes of effort do a defined [Stakeholder Action]

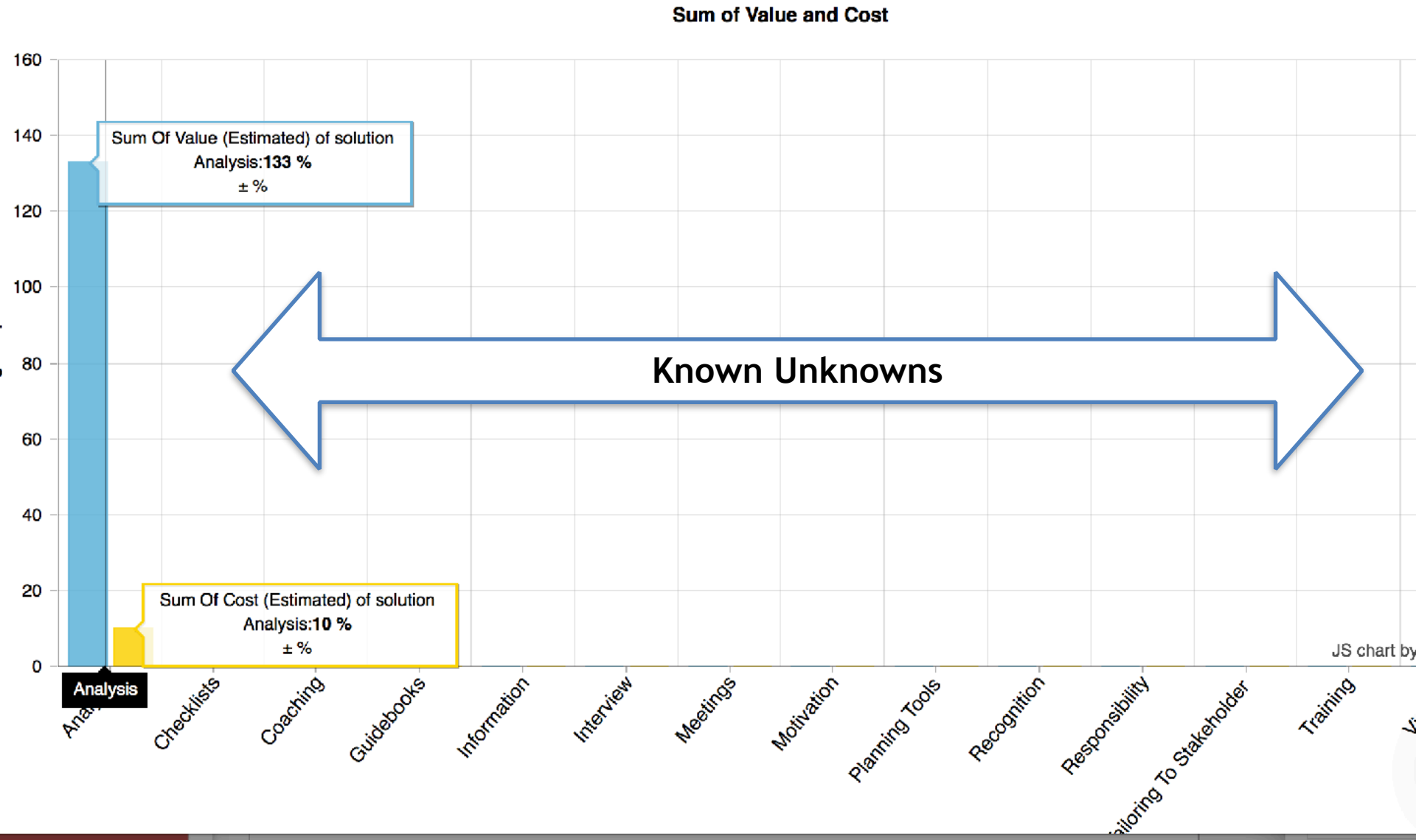
Stakeholders: Architecture, Managers, Project Managers, Steering Committee, Union

Status: Level: **30** % Quick Actions [Stakeholder Class = { <All> }, Stakeholder Action = { <All> }] When 24th June 2017

Wish: Level: **90** % Quick Actions [Stakeholder Class = { <All> }, Stakeholder Action = { <All> }] When 24th June 2017


Safari File Edit View History Bookmarks Window Help
Sat 24 Jun
app.needsandmeans.com/iet/IET-50SXLN7?subpage=table
Untitled
needs&means
Tom Gilb's ...
Create
Specifications...
Value Tables
More...
Tom Gilb's STAKEHOLDER ANALYSIS / Value Tables / Stakeholder Value And Strategy Table
Stakeholder Value And Strategy Table
Settings...
Add
Sort
Duplicate...
Δ: INCREMENTAL
Requirements
Analysis
Checklists
Coaching
Guidebooks
Information
Interview
Meetings
Accessibility
Status: 7 → Wish: 1 Days to Get
Adaptability
Status: 30 → Wish: 90 % Quick Actio
Criticality
Status: 0 → Wish: 0
Fixed Overhead Costs
Status: 0 → Wish: 0
Future Potential
Status: 0 → Wish: 0
Influence
Status: 0 → Wish: 0
Intelligibility
Status: 0 → Wish: 0
Neediness
Past: 0 → Goal: 0
Known Unknowns

gs... + Add Sort Duplicate... INCREMENTAL



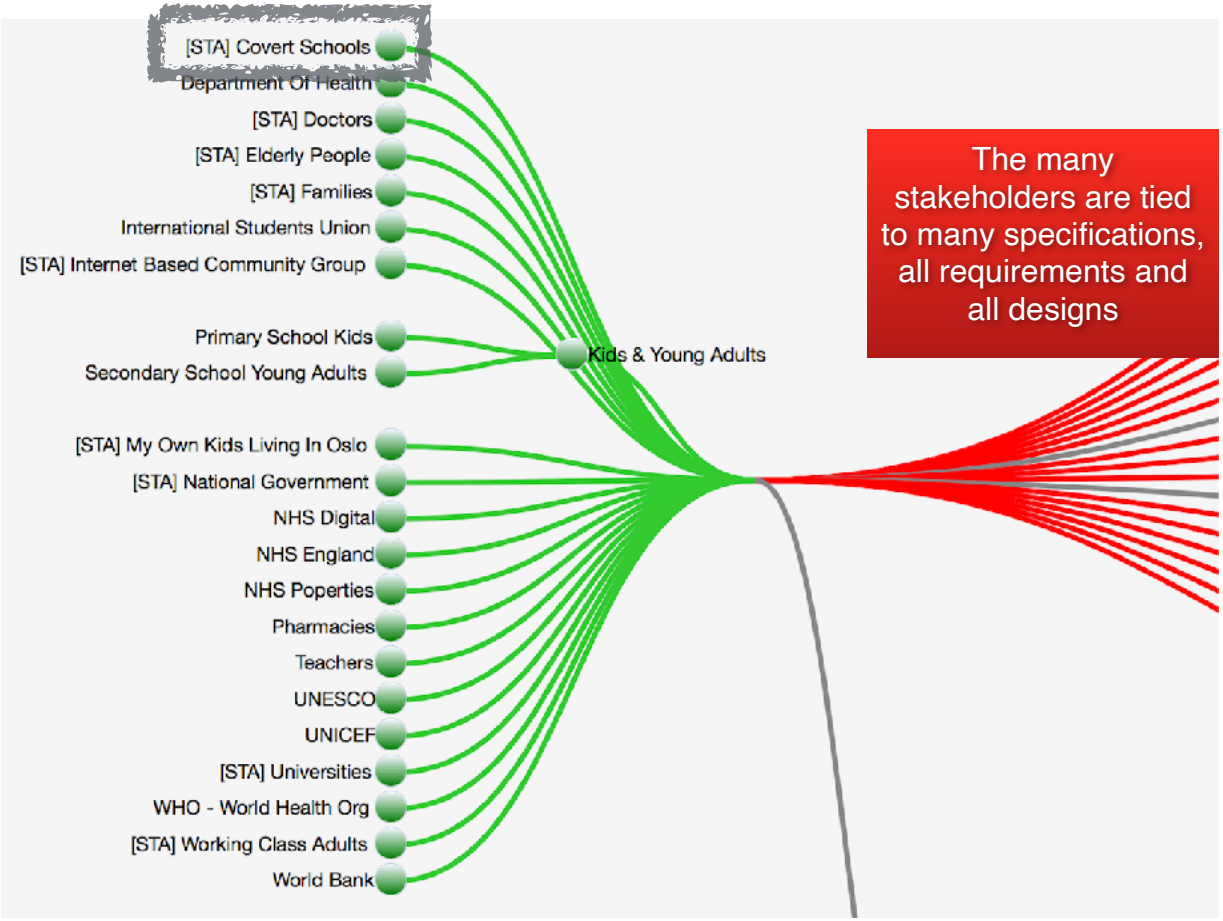
END OF SLIDES ADDED 24JUNE 2017 BY TOM

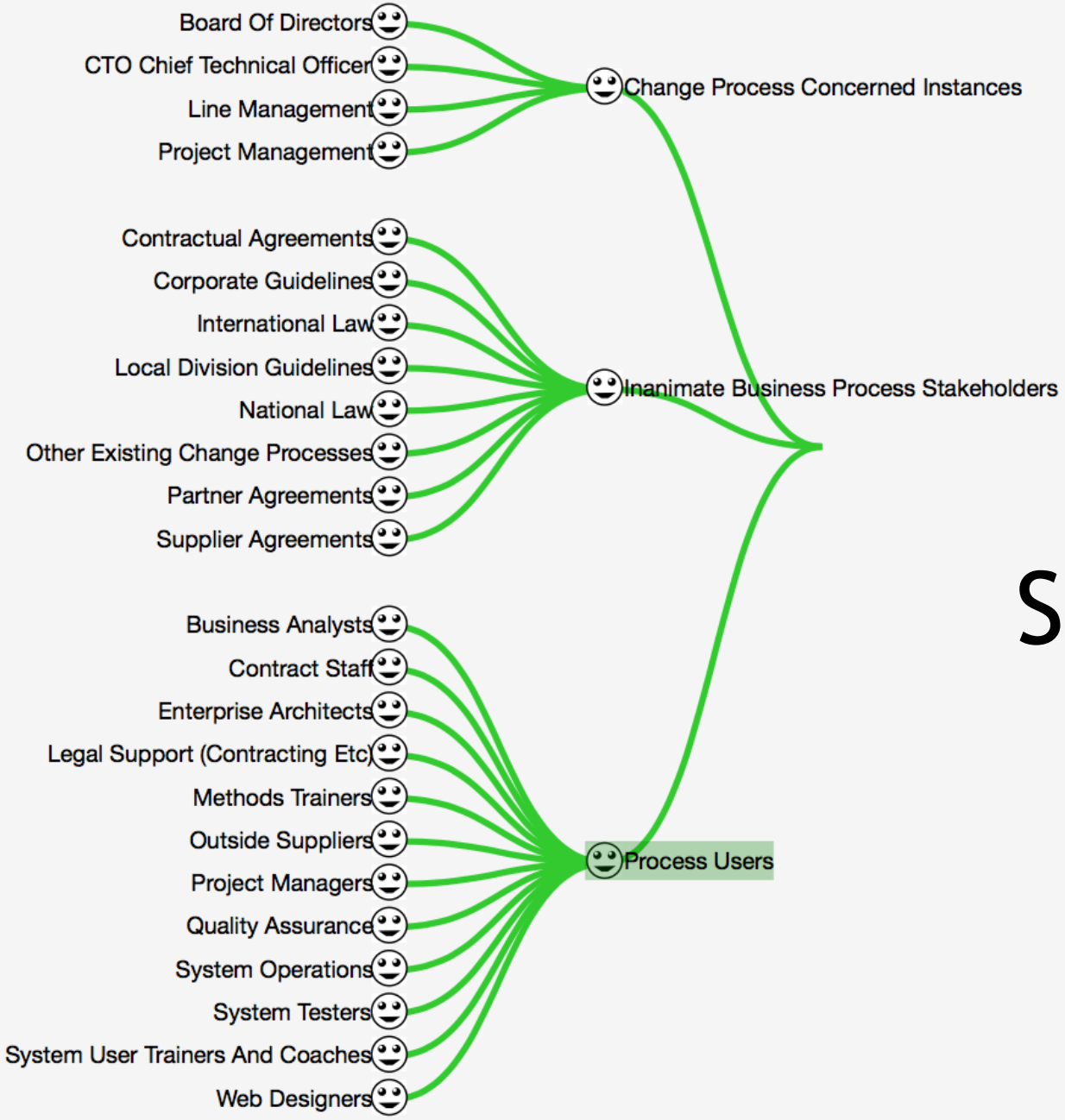
GENERIC STAKEHOLDER STUFF

Oslo Training Workshop Example March 2017 Tool: Needs and Means Method: Planguage

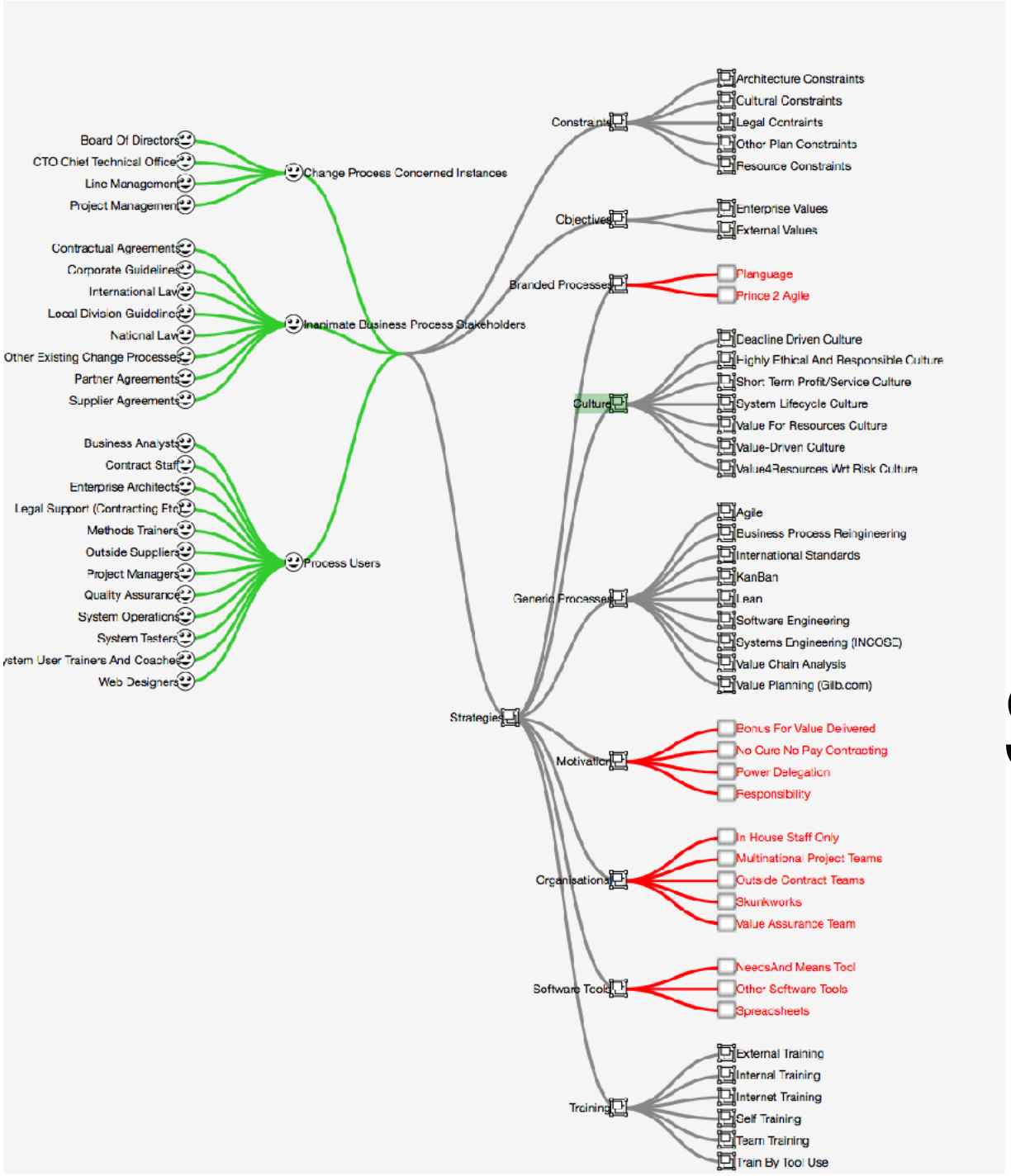
Oslo Software Architecture Meetup, 2 day Course
Planning for Health and education as a team

A set of stakeholders for one health and education project





Business Process Stakeholders



Business Process Strategies

from r smith

www.stakeholdermap.com

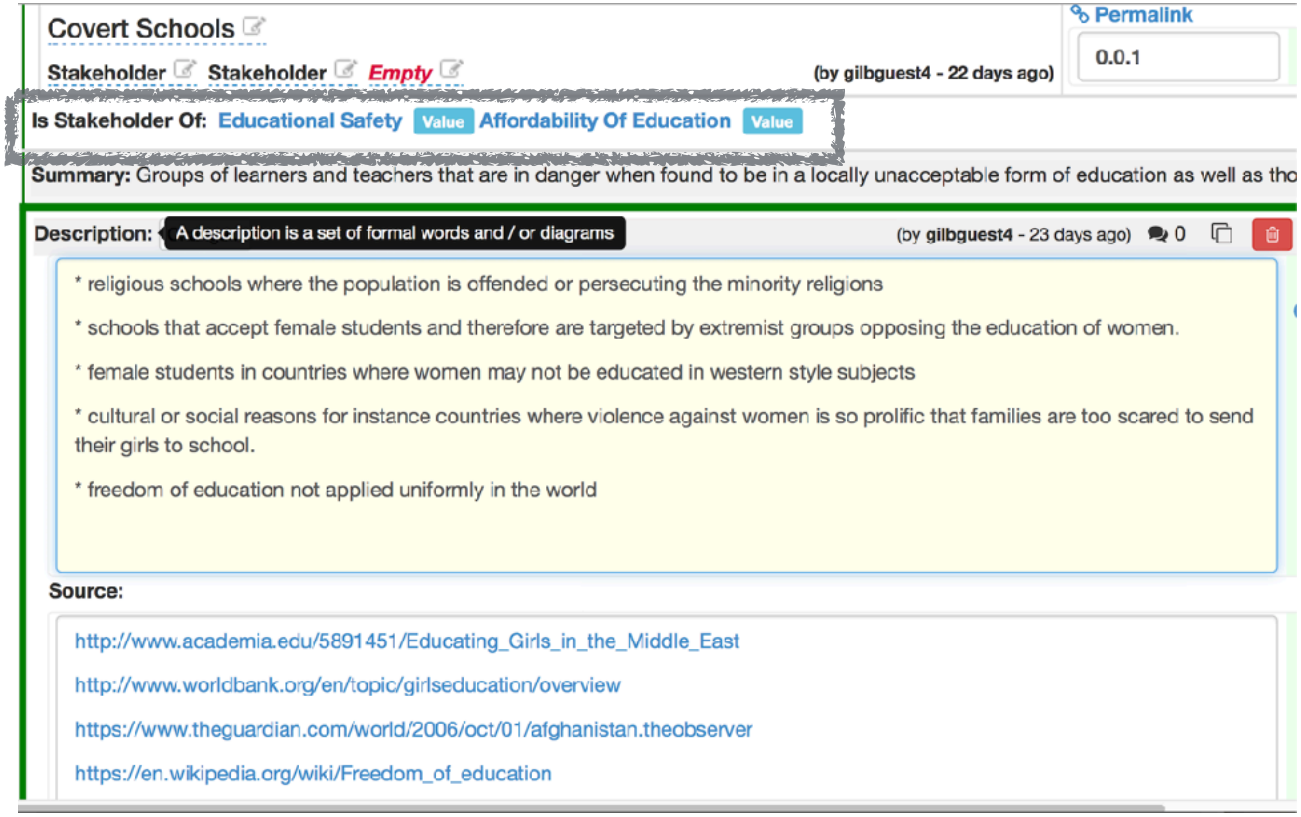
Lots of stakeholder - related content.

e.g. their definition of critical stakeholder ("Key Player") https://www.stakeholdermap.com/stakeholder-analysis/Stakeholder-Analysis-keyplayers.html#

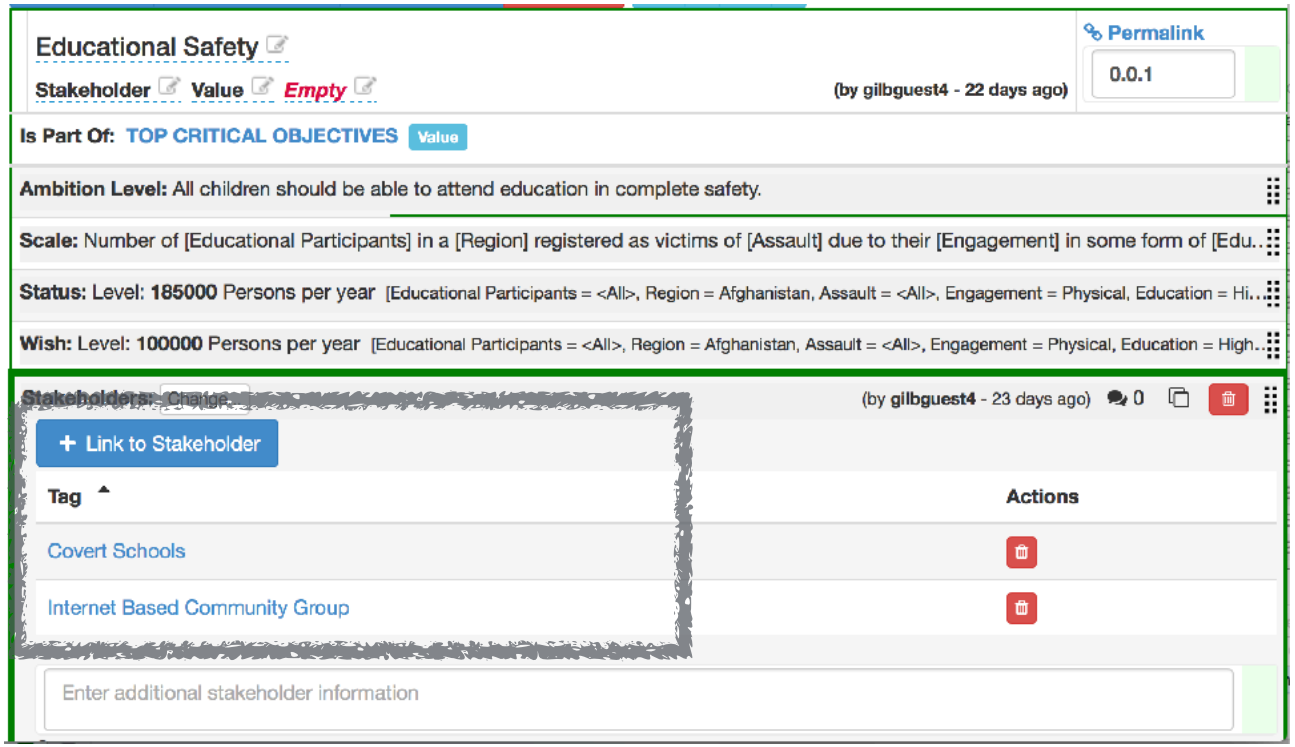
Stakeholder lists: https://www.stakeholdermap.com/stakeholder-list.html

IT stakeholder list: https://www.stakeholdermap.com/stakeholders-it-project.html

Defining a set of Objectives which are related to one defined stakeholder



Defining a list of stakeholders which are related to an Objective



Educational Safety

Stakeholder **Value** ***Empty*** (by gilbguest4 - 22 days ago)

Permalink

0.0.1

Is Part Of: TOP CRITICAL OBJECTIVES Value

Ambition Level: (by **gilbguest4** - 22 days ago) 0

All children should be able to attend education in complete safety.

Source:

https://childrenandarmedconflict.un.org/countries-caac/afghanistan/

http://www.unwomen.org/en/what-we-do/ending-violence-against-women/facts-and-figures

https://www.unicef.org/esaro/7310_Gender_and_education.html

http://theirworld.org/news/10-countries-where-girls-education-has-been-attacked

http://www.ungei.org/srgbv/files/Study_on_Violence_Against_Schoolgfils_final.pdf

Scale: (by **gilbguest4** - 22 days ago) 0

Number of **[Educational Participants]** in a **[Region]** registered as victims of **[Assault]** due to their **[Engagement]** in some form of **[Education]**.

Short Description: Persons per year, **Time Units:** Year

Assault: defined as:
Killed, Physical assault

Education: defined as:
Preschool, High School, University

Educational Participants: defined as:
Teacher, Student

Engagement: defined as:
Physical, Virtual

1 of 2 selected, 20,43 GB available

The Scale definition, scale 'parameters' - give additional information regarding stakeholders: such as where, when, which type, under what circumstances

Educational Safety

Stakeholder **Value** ***Empty***

(by gilbguest4 - 22 days ago)

Permalink

0.0.1

Is Part Of: TOP CRITICAL OBJECTIVES Value

Ambition Level:

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http://www.unwomen.org/en/what-we-do/ending-violence-against-women/facts-and-figures

https://www.unicef.org/esaro/7310_Gender_and_education.html

http://theirworld.org/news/10-countries-where-girls-education-has-been-attacked

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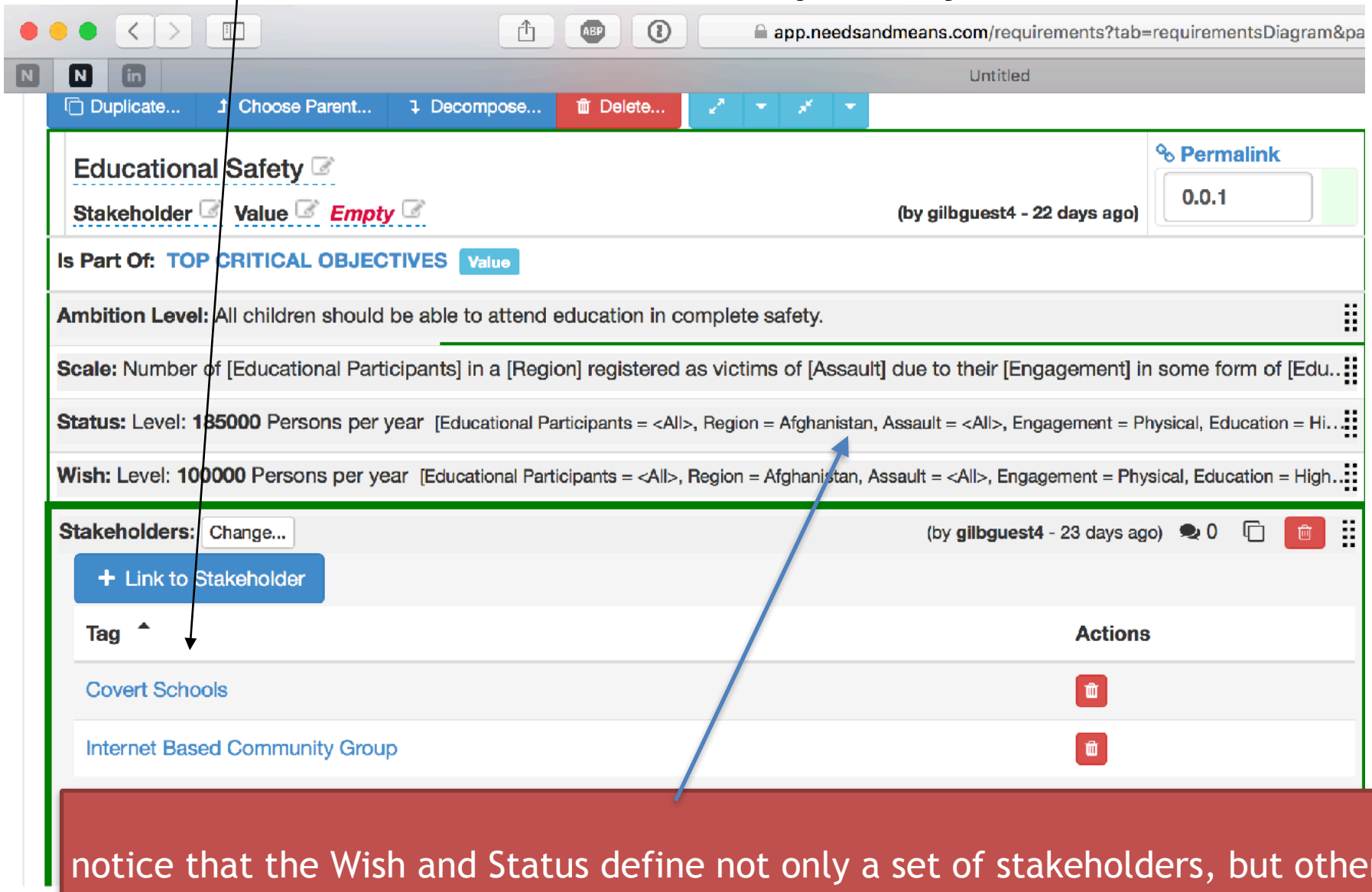
Preschool, High School, University

Educational Participants: defined as:
Teacher, Student

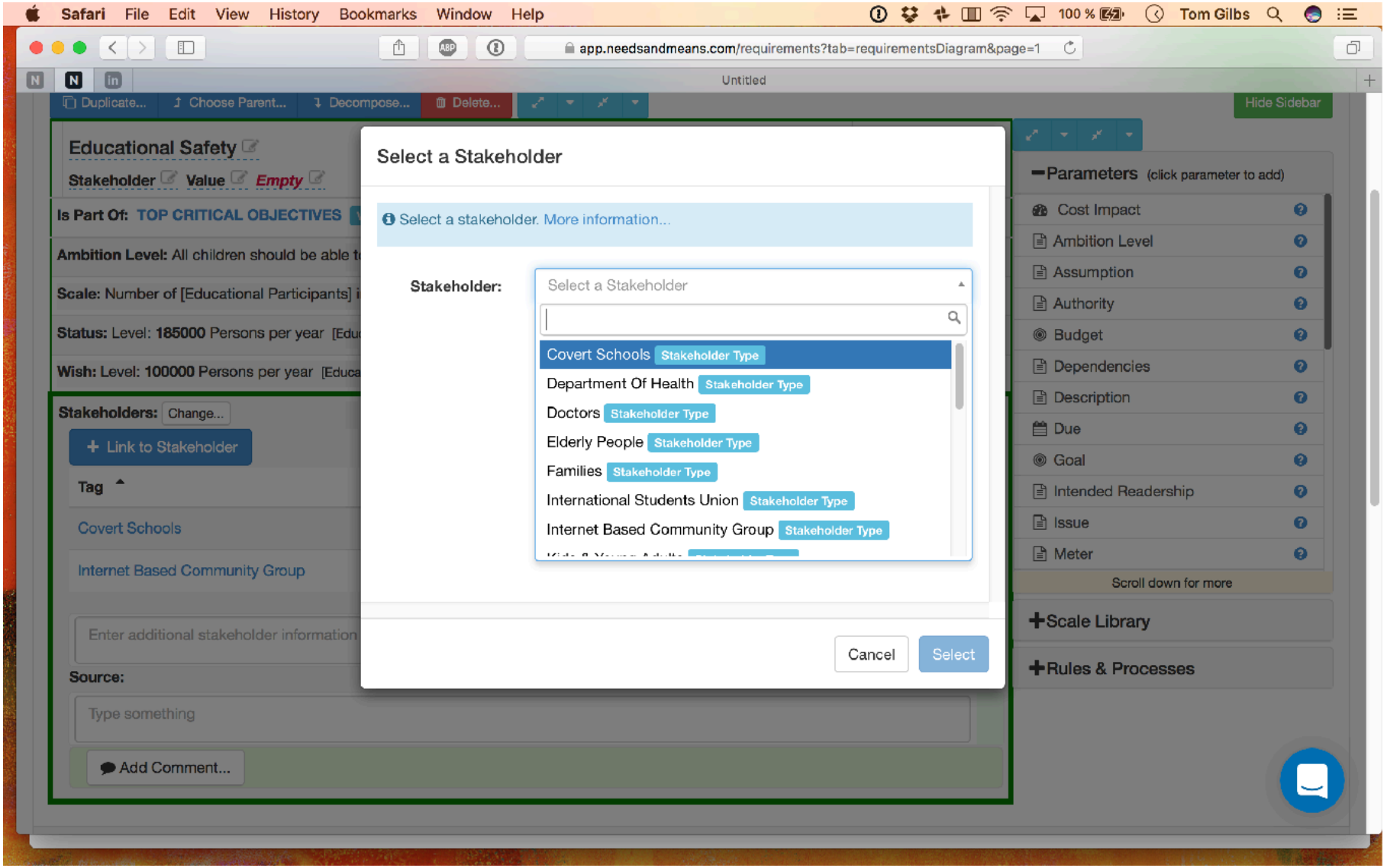
Engagement: defined as:
Physical, Virtual

2 stakeholders are now linked to ‘Educational Safety’ Objective

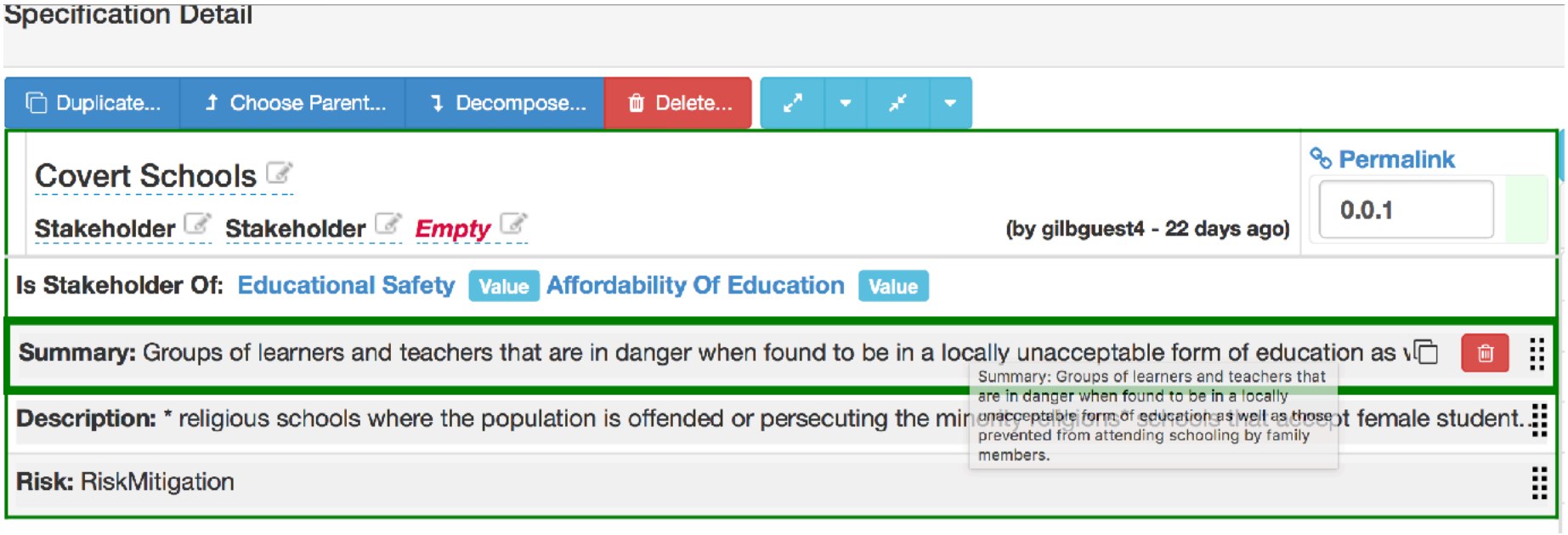


notice that the Wish and Status define not only a set of stakeholders, but other dimensions such as ‘where’ and ‘doing what’

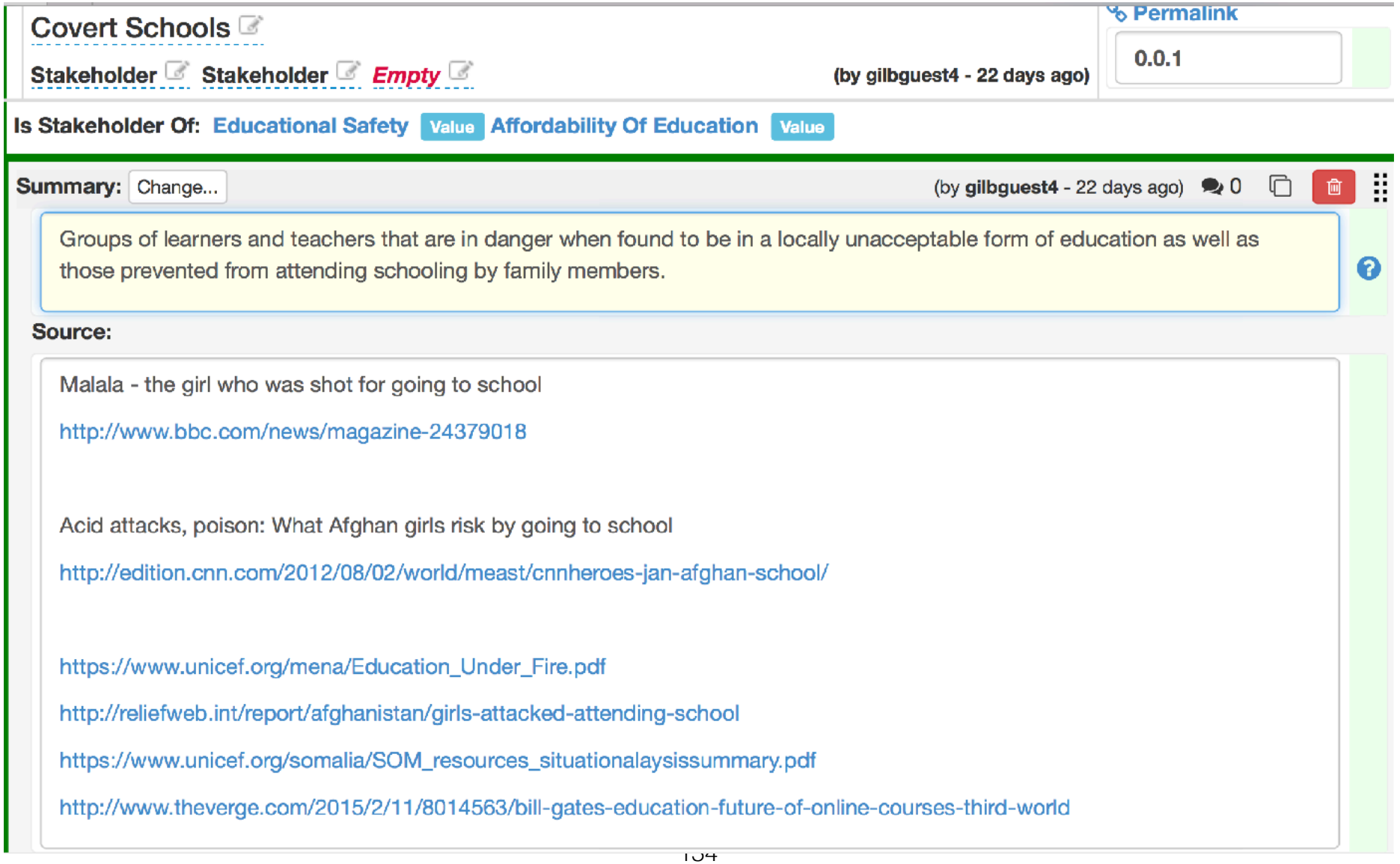
How to add a defined stakeholder to any objective



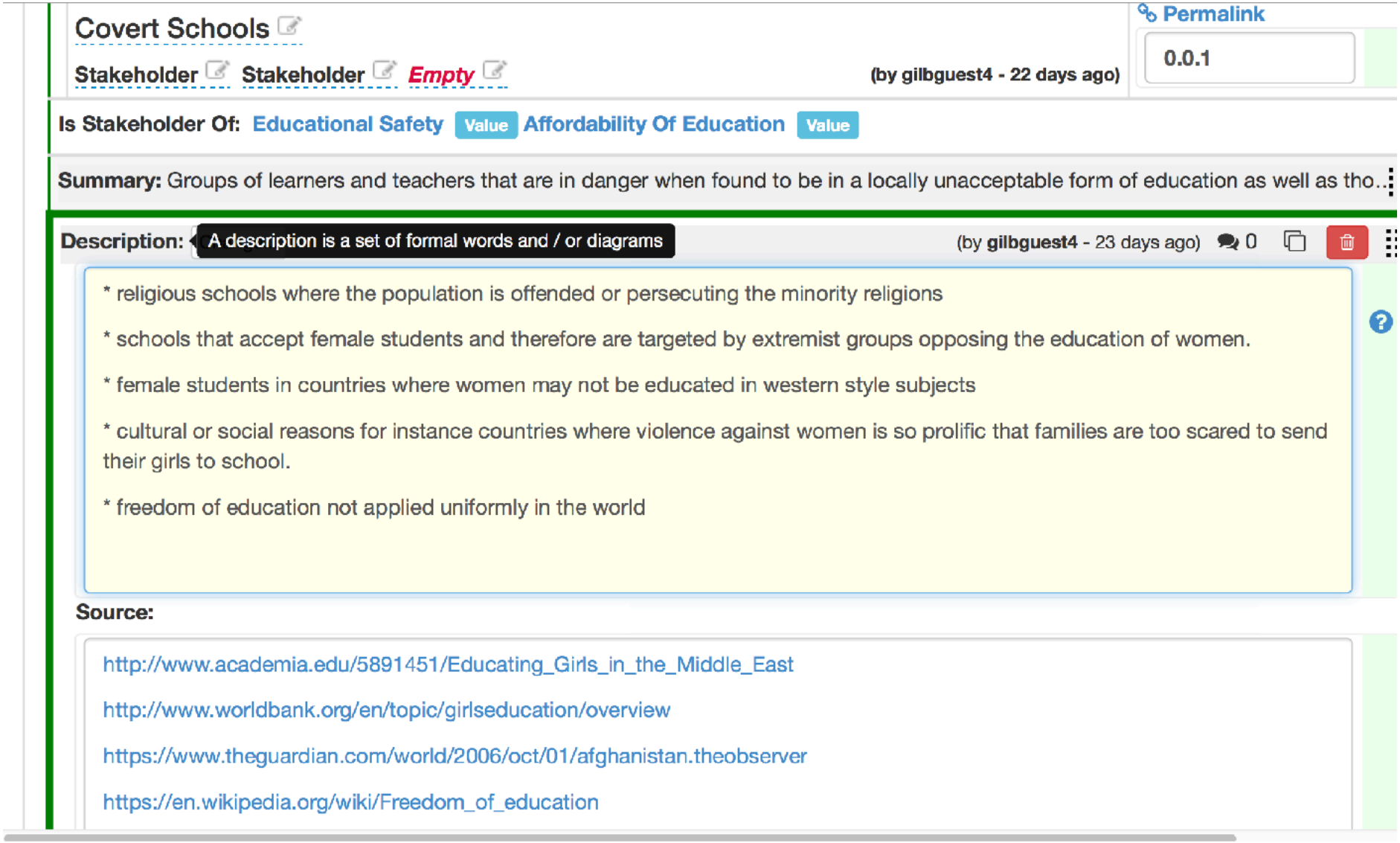
Summary of a Stakeholder spec



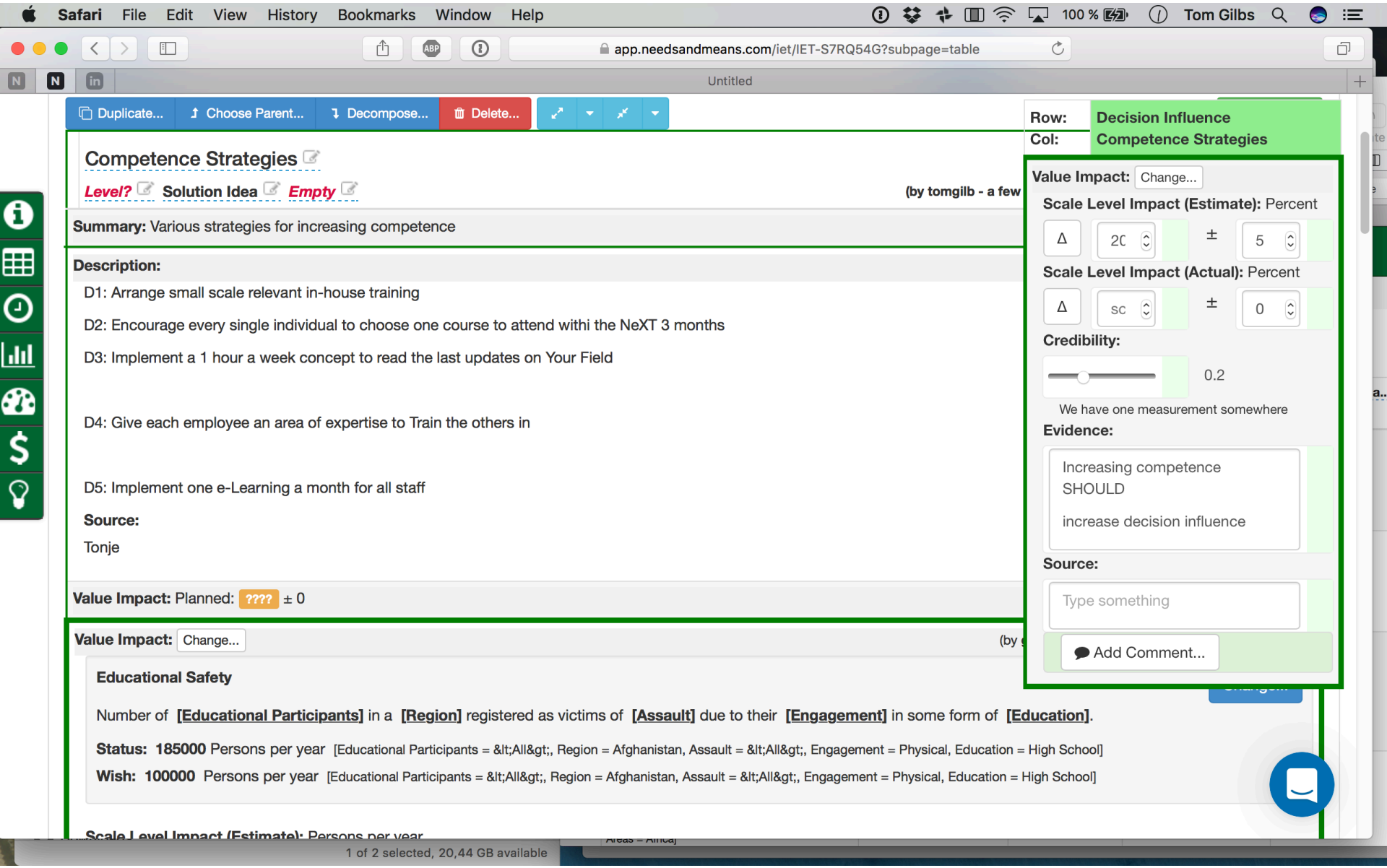
Detail of the Stakeholder summary



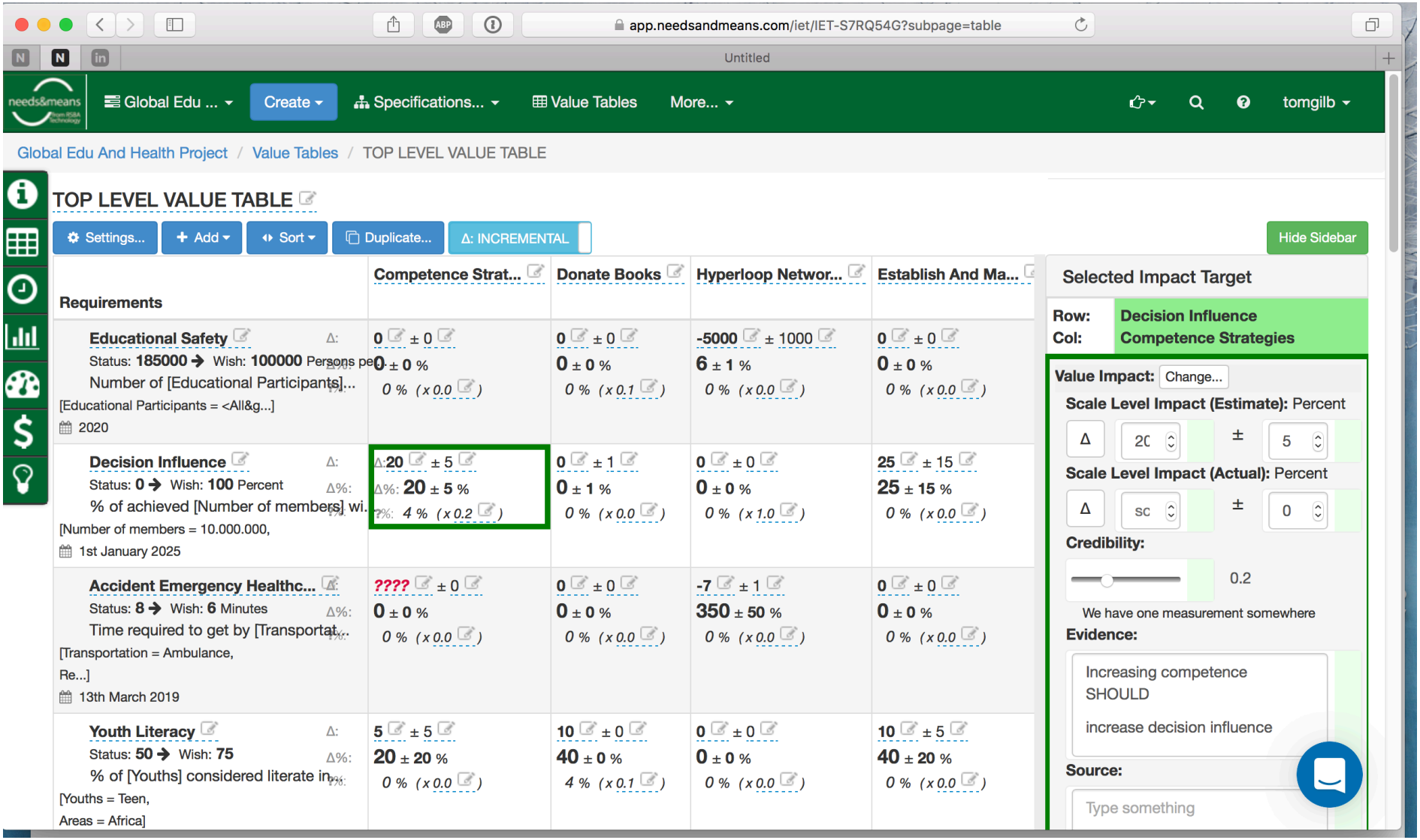
Detail of the Stakeholder Description

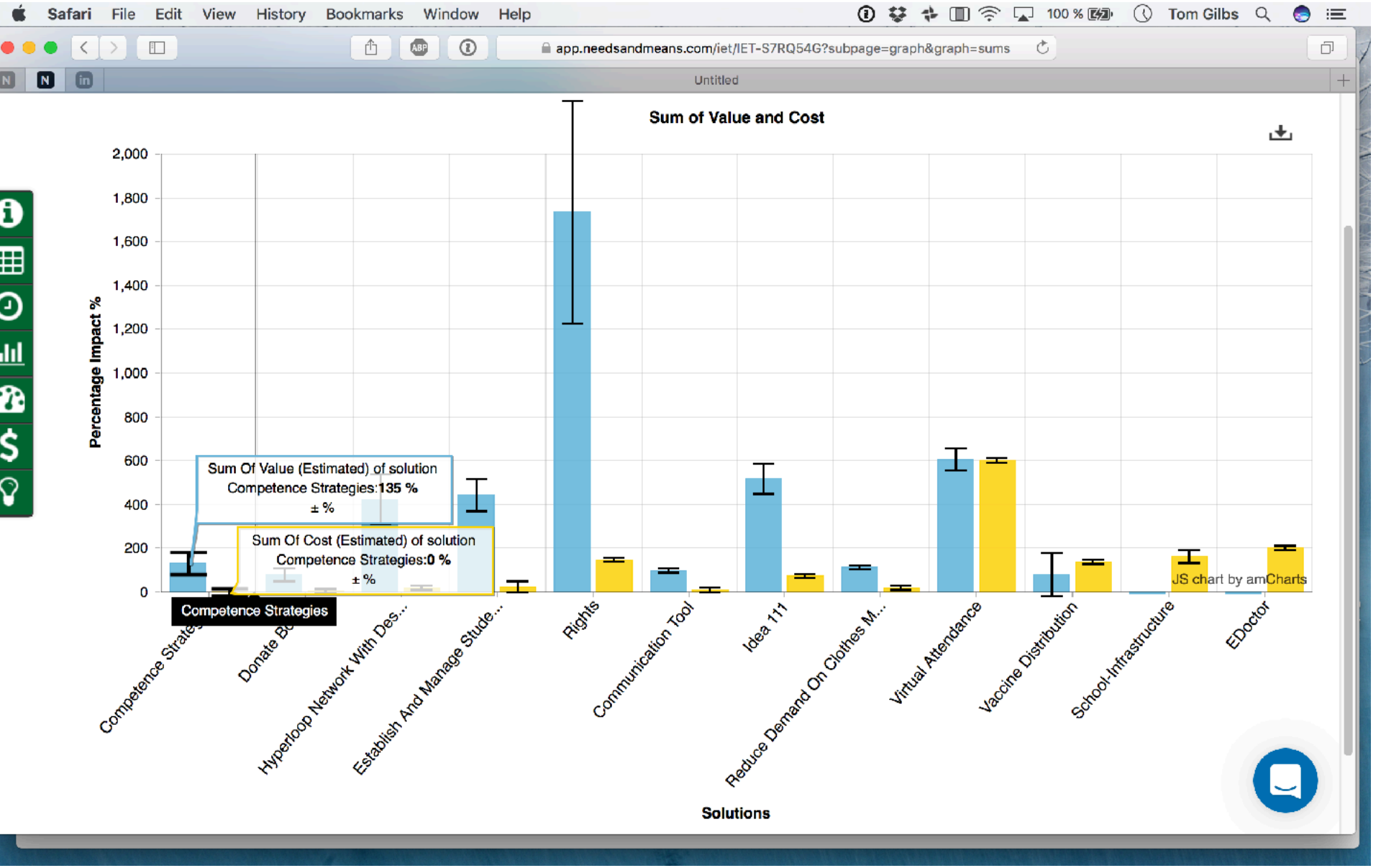


Competence Strategies: A means to ‘Educational Safety’



Estimation of impact of ‘Strategies’, on a defined set of stakeholder and stakeholder circumstances, in the ‘[Scale Parameters]




Safari File Edit View History Bookmarks Window Help
100 % Tom Gilbs
app.needsandmeans.com/iet/IET-S7RQ54G?subpage=graph&graph=sums
Untitled
Sum of Value and Cost
Percentage Impact %
2,000
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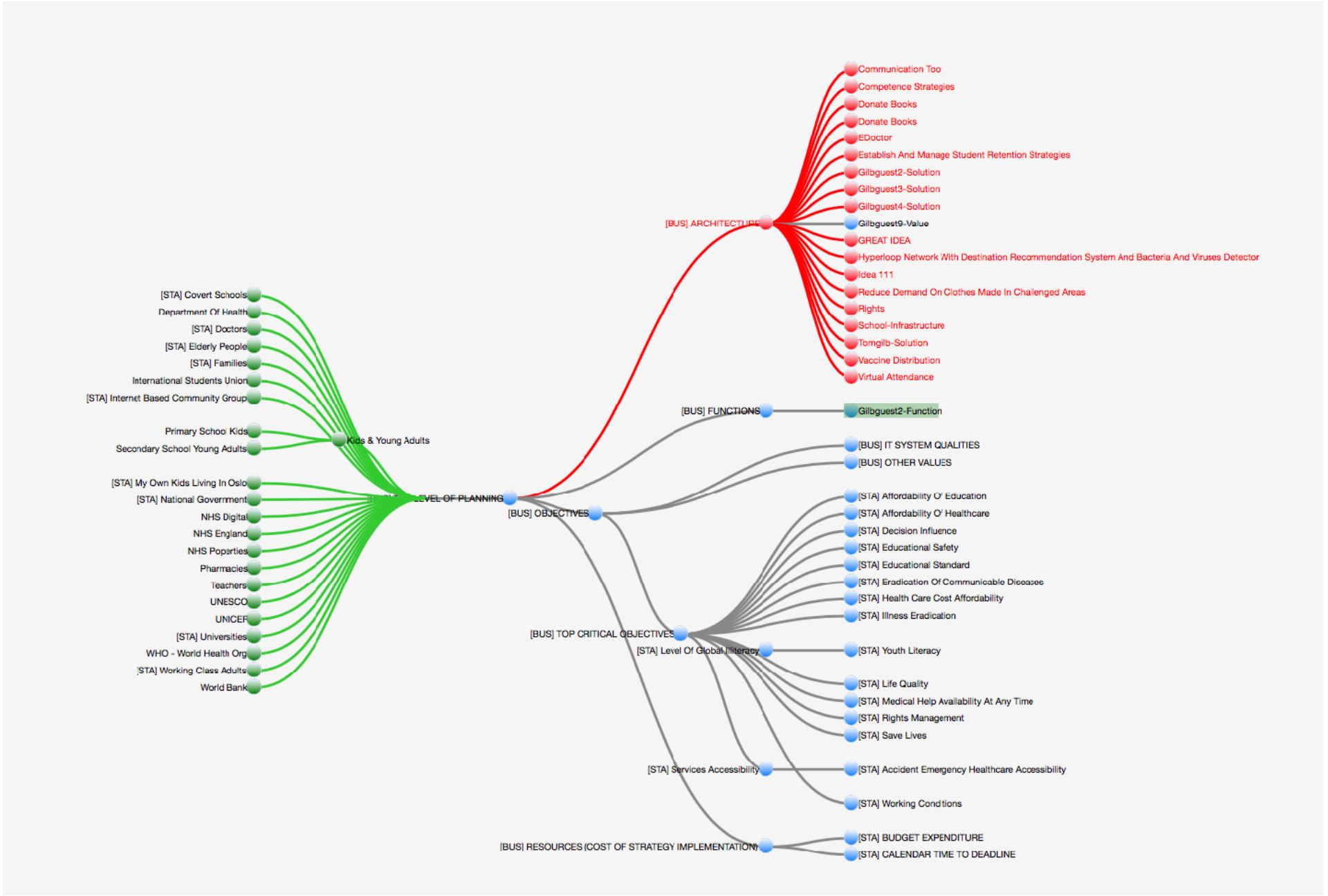
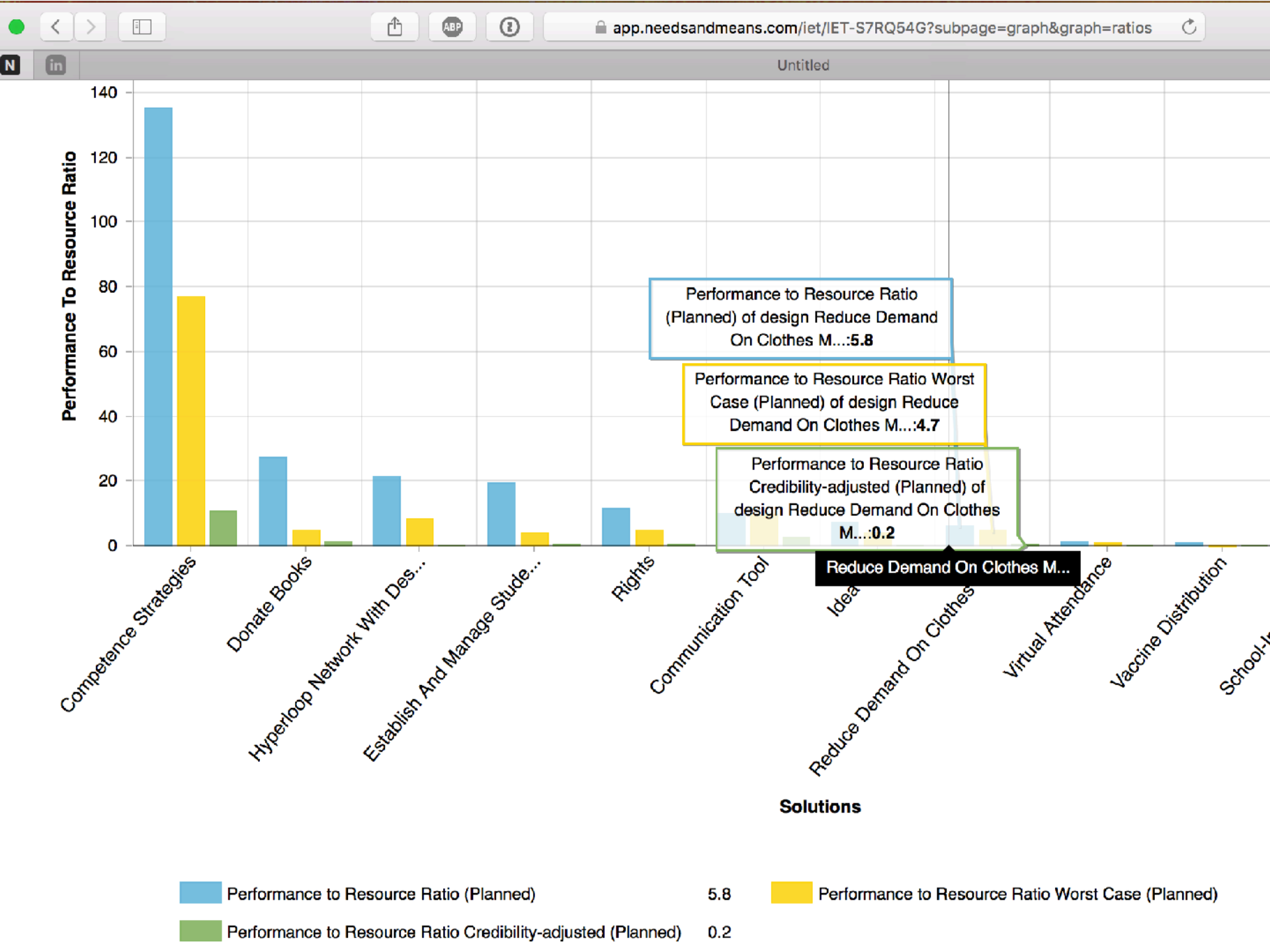
1,400
1,200
1,000
800
600
400
200
0
Sum Of Value (Estimated) of solution
Competence Strategies:135 %
± %
Sum Of Cost (Estimated) of solution
Competence Strategies:0 %
± %
Competence Strategies
Competence Strate...
Donate Bo...
Hyperloop Network With Des...
Establish And Manage Stude...
Rights
Communication Tool
Idea 111
Reduce Demand On Clothes M...
Virtual Attendance
Vaccine Distribution
School-Infrastructure
EDoctor
JS chart by amCharts
Solutions

Plan Element Overview Diagram

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Performance To Resource Ratio
140
120
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60
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20
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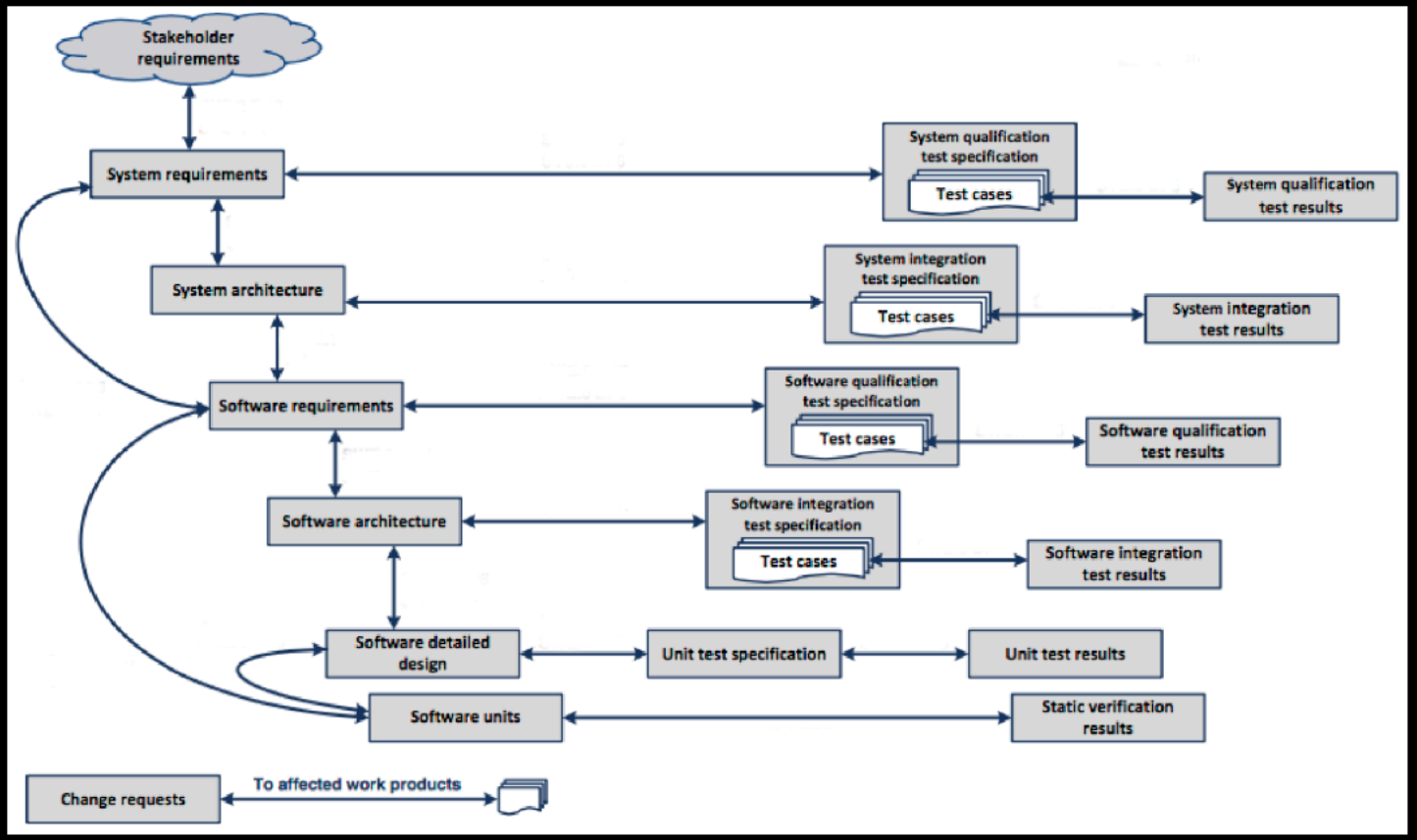
Performance to Resource Ratio (Planned) of design Reduce Demand On Clothes M...:5.8
Performance to Resource Ratio Worst Case (Planned) of design Reduce Demand On Clothes M...:4.7
Performance to Resource Ratio Credibility-adjusted (Planned) of design Reduce Demand On Clothes M...:0.2
Reduce Demand On Clothes M...
Competence Strategies
Donate Books
Hyperloop Network With Des...
Establish And Manage Stude...
Rights
Communication Tool
Idea
Reduce Demand On Clothes
Virtual Attendance
Vaccine Distribution
Solutions
Performance to Resource Ratio (Planned)
5.8
Performance to Resource Ratio Worst Case (Planned)
Performance to Resource Ratio Credibility-adjusted (Planned)
0.2

- **Follow the money!** Whoever is paying is definitely a stakeholder. Also, if the program produces savings or additional costs for an organization, then the organization is also a stakeholder.
- **Follow the resources.** Every entity that provides resources, whether internal or external, labor or facilities, and equipment, is a stakeholder. Line managers and functional managers providing resources are stakeholders.
- **Follow the deliverables.** Whoever is the recipient of the product or service the program is providing is a stakeholder.
- **Follow the signatures.** The individual who signs off on completion of the final product or service (or completed phases of the product or service) is a stakeholder. Note: This may or may not be the recipient referred to in the previous bullet. Often there may be more recipients than signatories.
- **Examine other programs' stakeholder lists.** Include active programs and completed projects.
- **Review the organizational chart** to assess which parts of the organization may be stakeholders.
- **Ask** team members, customers, and any other confirmed stakeholder to help you identify additional stakeholders.
- **Look for the "Unofficial People of Influence**. These may be people who are trusted by high-level leaders or who wield a lot of power through influence and not position.

The goal of following these guidelines is to make sure every possible stakeholder is identified. Some of your stakeholders may play major roles, while others may have minor roles and little or no interest or interaction. Regardless of size or role, every stakeholder's needs must be assessed, and you cannot meet the needs of a stakeholder you have not identified. Reprinted from The Handbook of Program Management

https://www.sebasolutions.com/dev/newsletter/?id=104

Stakeholder Requirements first



Automotive, S.I.G., 2010. Automotive SPICE Process Assessment Model. Final Release, v4, 4, p.46.

salomehonest@gmail.com, salomem@chalmers.se
Salome Maro, Chalmers 2017

Modeling Multi-level Stakeholder Relations Quantitatively using IE Tables

In order to save a large IT Scrum project that failed initially, (the new system drastically killed sales!). Kai modelled the (obviously, 'it failed') 'wicked system'. He built one Impact Estimation Table (aka Value Decision Table) for the top level of the Bring (Norwegian Post Office essentially) organization. This succeeded to resurrect the system, because it mapped the connection between technology and the higher levels of organizational objectives. The IT Development team was then instructed to focus on developing things that led to business (sales!) success.

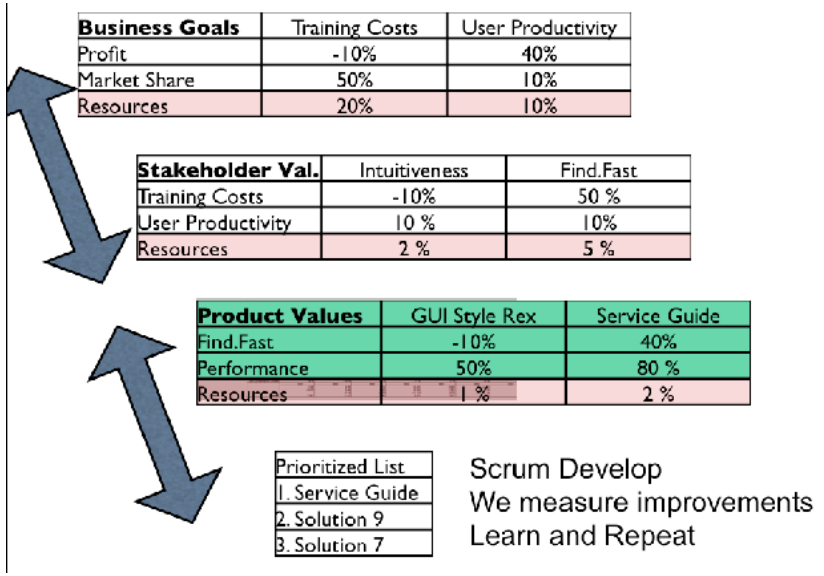
Business Goals: The top management stakeholder level has problems, like *Increase Profit* and *Market Share*. Solutions have been identified (reduce *Training Costs*, and improve *User Productivity*). The expected, estimated, impact of these solutions on the (elsewhere, see Figure W4 for 'how it looks') *quantified* Problems, is given by the numbers estimated (later 'measured as a result) at their intersection. For example Training Costs reduction, if the solution works as expected, promised to move us 50% of the way towards our Market Share objective (the Problem,

Stakeholder Value: These solutions become the the Problem at the next level. The Stakeholder level. Think of these as the 30 or so individual transport companies that had been bought and merged to form Bring. It looks like the Solution named 'Intuitiveness' is estimated to contribute 10% of the progress we need towards the User Productivity problem objective. All objectives are of course quantified, elsewhere.

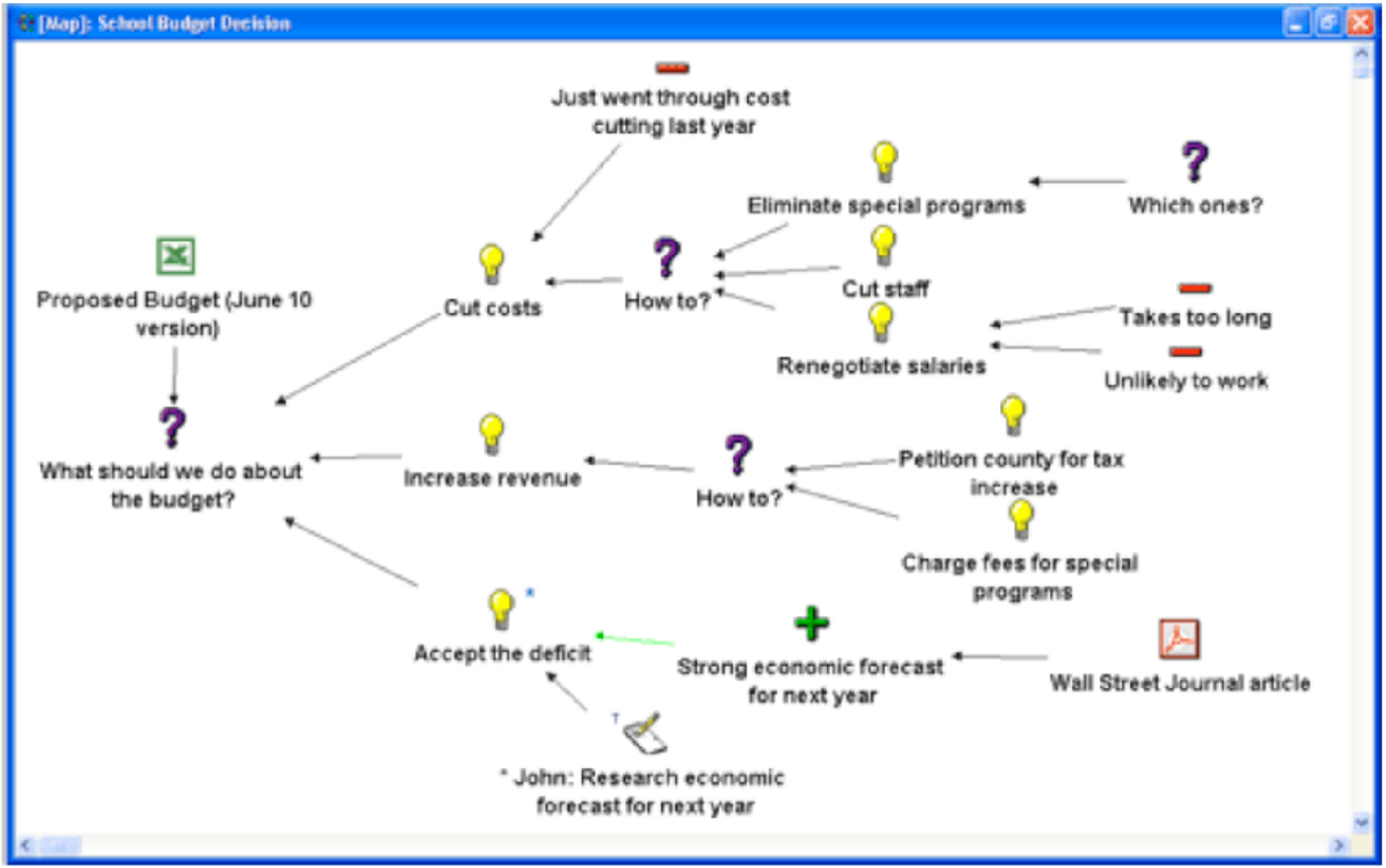
Product Val.:At the third level (Product Values), 'Find.Fast' (one of the Stakeholder solutions, is considered an IT System objective (a problem statement).

It looks like 'Service Guide' is a solution that is expected to contribute 40% towards the 'Find.Fast' Problem solution. And 'Service Guide' *also* is expected to contribute 80% towards a Performance problem.

Scrum Level: The Service Guide solution will be developed and implemented by the Scrum Team. Hopefully its impact will be approximately as expected, and will impact several levels up towards the Business Goals.



A Compendium Map

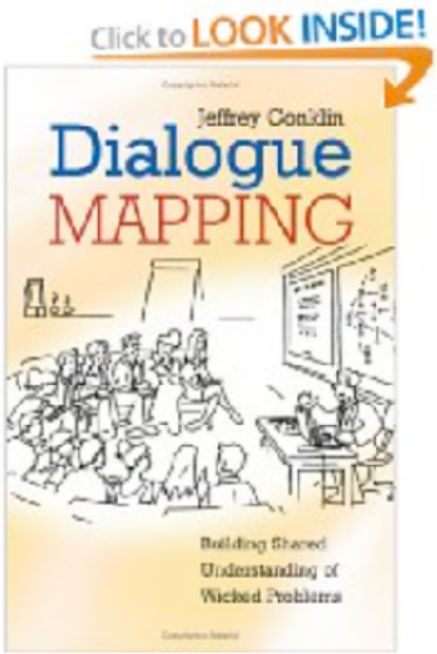


http://heim.ifi.uio.no/~dino/SSW-KF/L10/Conklin-DialogueMapping.pdf

Jeff Conklin:
Dialogue Mapping

Building Shared Understanding of Wicked Problems

By Dino Karabeg



“A tame problem:

1. **Has a well-defined and stable problem statement;**
2. **Has a definite stopping point, i.e., when the solution is reached;**
3. **Has a solution that can be objectively evaluated as right or wrong;**
4. **Belongs to a similar class of problems that are all solved in the same similar way;**
5. **Has solutions that can be easily tried and abandoned;**
6. **Comes with a limited set of alternative solutions.”**

Jeff Conklin

http://cognexusgroup.com/wp-content/uploads/2013/07/Using-Dialogue-Mapping-to-Address-Wicked-Problems-05-23-2013.pdf

Degrees of Wickedness

“It turns out there's a slippery linguistic trap in the name 'wicked problem,' because the name implies there's a 'solution.’

It's more accurate to talk about the degree of 'wickedness' in a situation (or perhaps how messy a given 'mess' is).

(Framing the challenge in this way might help to break our addiction to racing around creating and exacerbating 'problems' with our 'solutions.')

The truth is that a wicked problem is a set of interlocking issues across many domains (i.e. political, environmental, economic, etc.),

and any attempt to bound the scope of the challenge is arbitrary.

Moreover, only a tame problem can be ‘solved'—

wicked problems can only be managed more or less effectively, more or less efficiently.

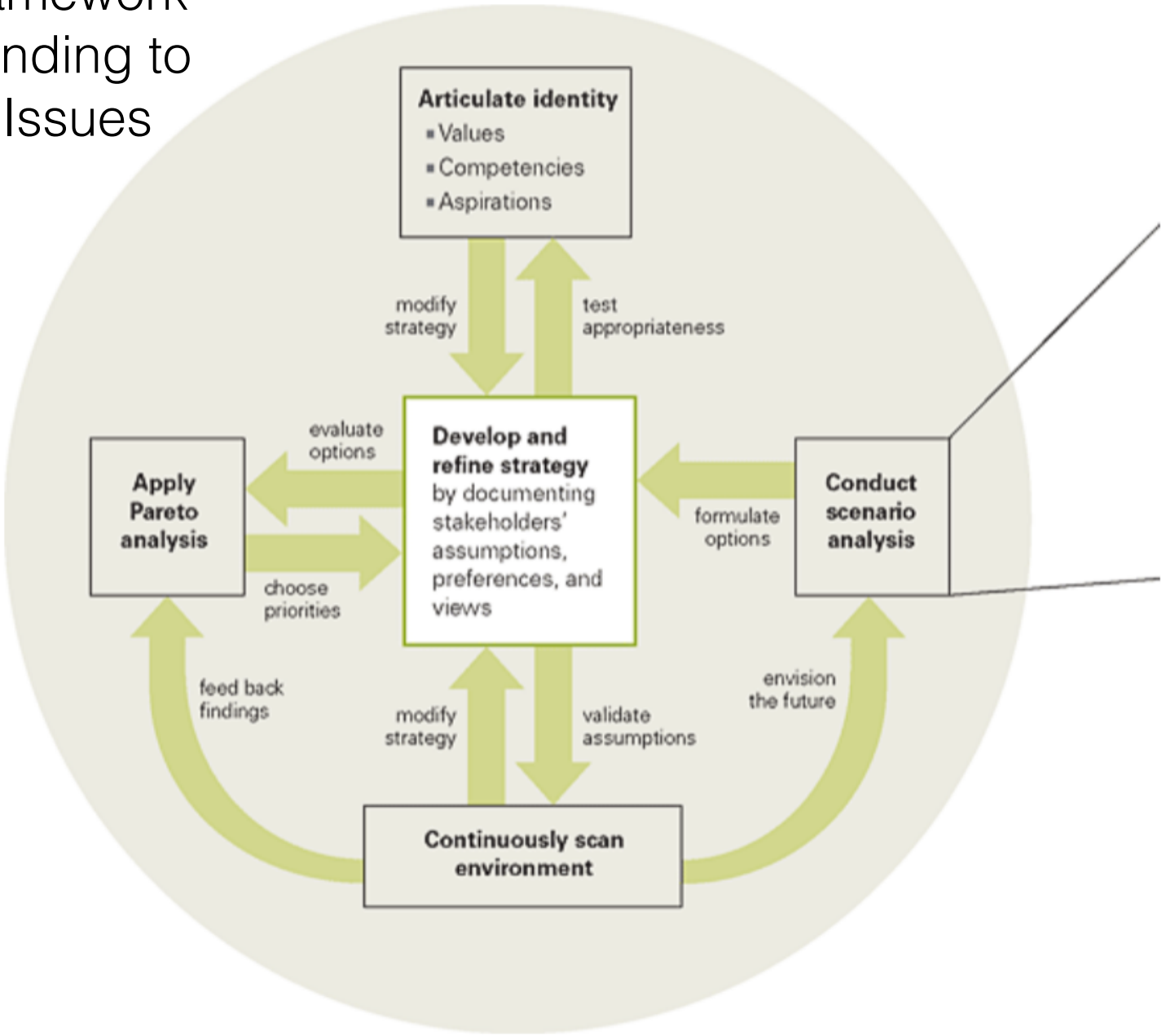
The best we can do is to find more elegant and expedient interventions,

but ultimately the human condition is that there's no getting away from the 'Whac-a-mole' phenomenon that even the most elegant intervention on a wicked problem will make some issue(s) more wicked for some stakeholder(s).”

Jeff Conklin

http://cognexusgroup.com/wp-content/uploads/2013/07/Using-Dialogue-Mapping-to-Address-Wicked-Problems-05-23-2013.pdf

PPG's Framework for Responding to Wicked Issues



PPG's Framework for Responding to Wicked Issues

PPG Industries develops strategies

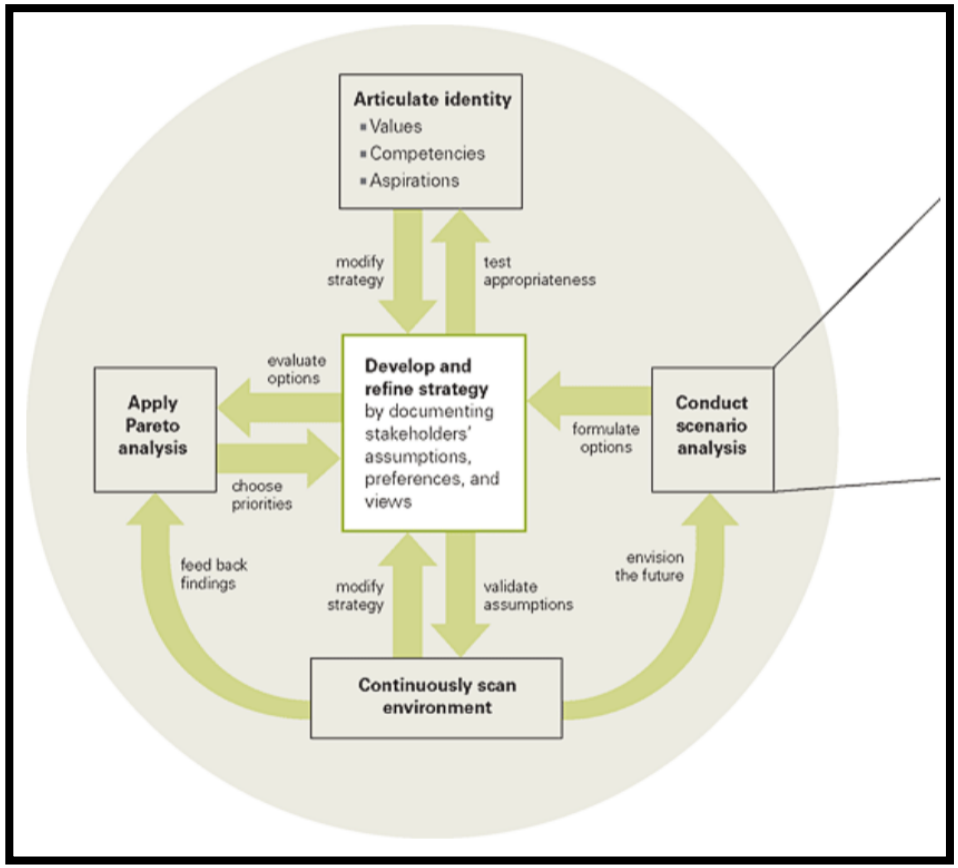
> after seeking and documenting **stakeholders**' *assumptions, preferences, and alternate views*.

It evaluates the appropriateness of the strategies it draws up against its statement of identity and continually scans the environment and tests assumptions to see if it needs to change course.

The assessment of possible scenarios helps PPG formulate new options,

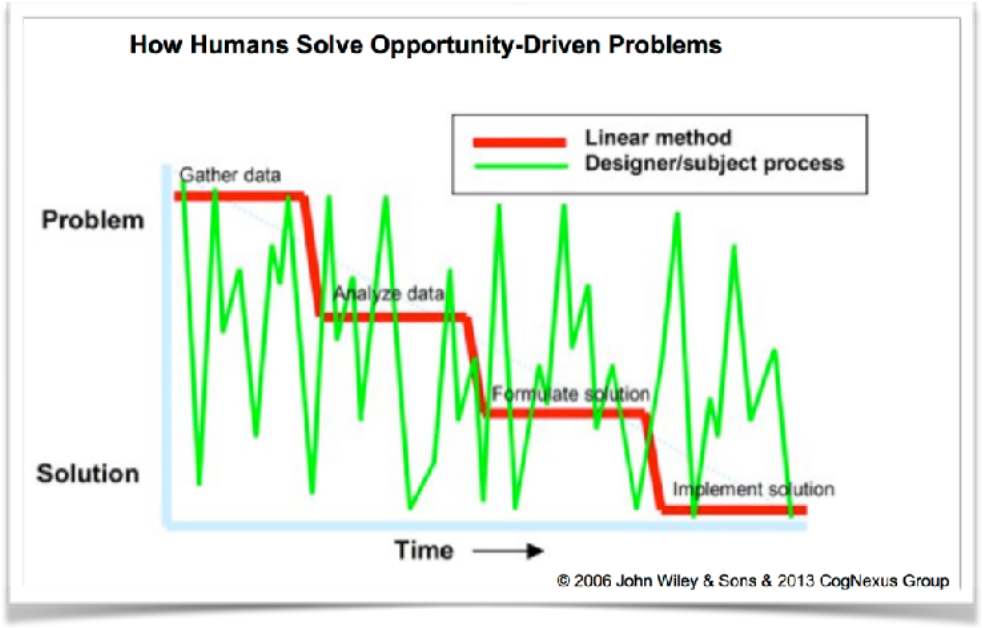
> and its managers apply Pareto analysis to identify **a small number of actions that are likely to have a large impact.**

.



Parallel Planning

- The Red Line is the way in which we're "supposed" to solve problems or design things.
- The green line represents the way that experienced engineers typically approach a novel, complex problem—
- they begin by positing a solution to a partially-understood problem space and then bump into problems or constraints, solve for them, and keep learning and expanding their knowledge of the problem domain as they solve it.
- When you have a whole bunch of **people from different perspectives** doing this in parallel, you get lots of spikes as different people make progress and others run into bottlenecks.
- **Opportunity**-driven problems don't lend themselves to a linear waterfall method, but we keep trying to shoehorn Wicked Problems into that linear approach.



- http://cognexusgroup.com/wp-content/uploads/2013/07/Using-Dialogue-Mapping-to-Address-Wicked-Problems-05-23-2013.pdf

- Slide by Tom Gilb Jan 10 2016

Stakeholder as Source of Request for Requirement (Kasser)

Chapter 10 Examples

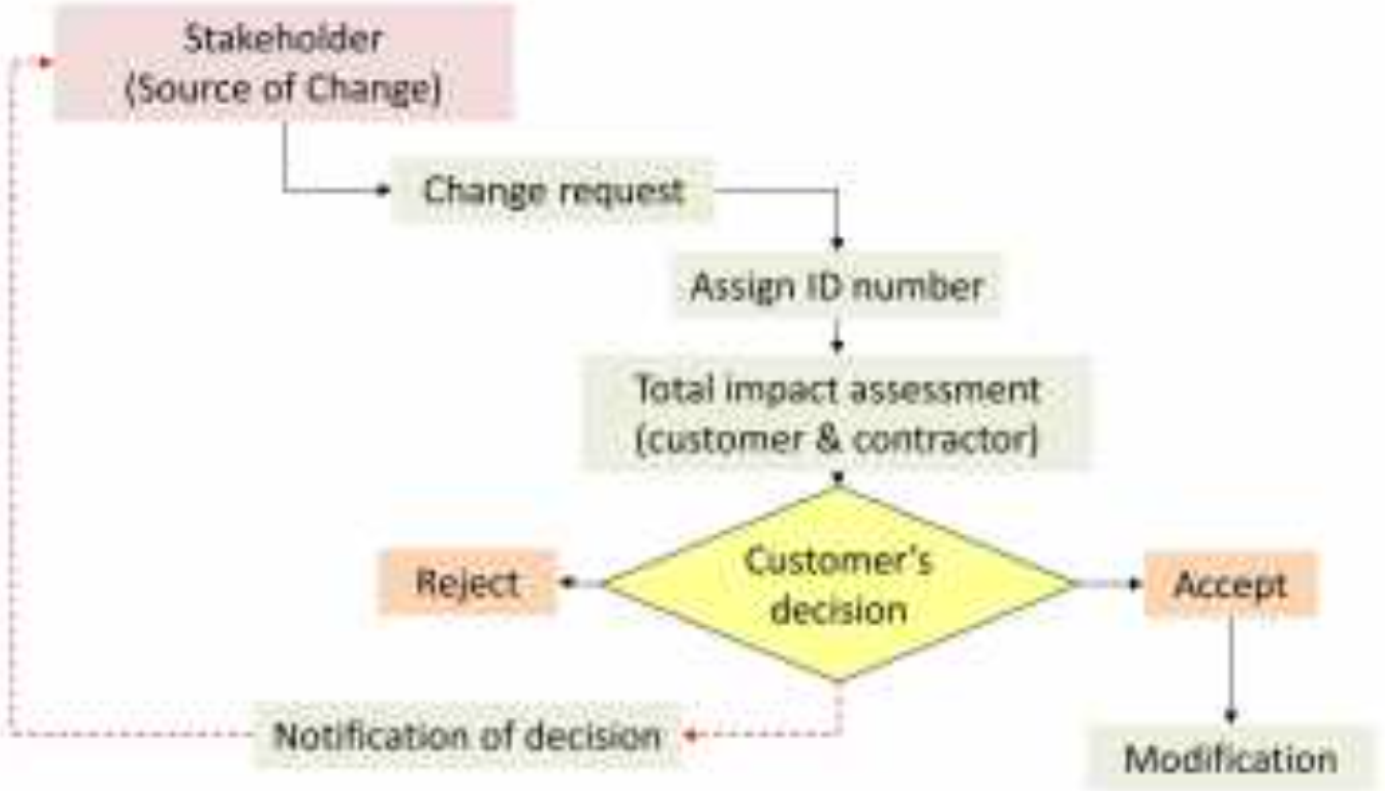
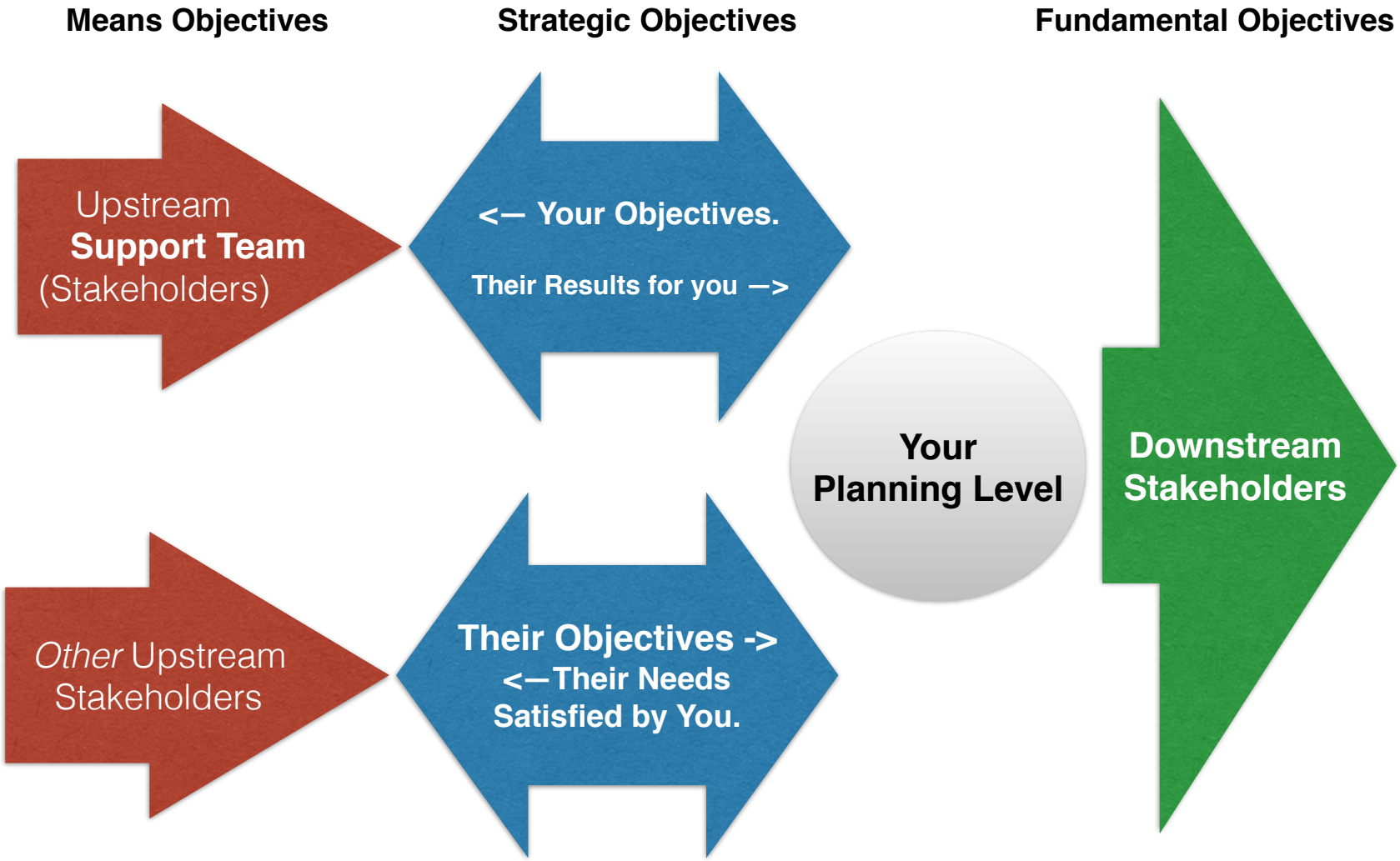
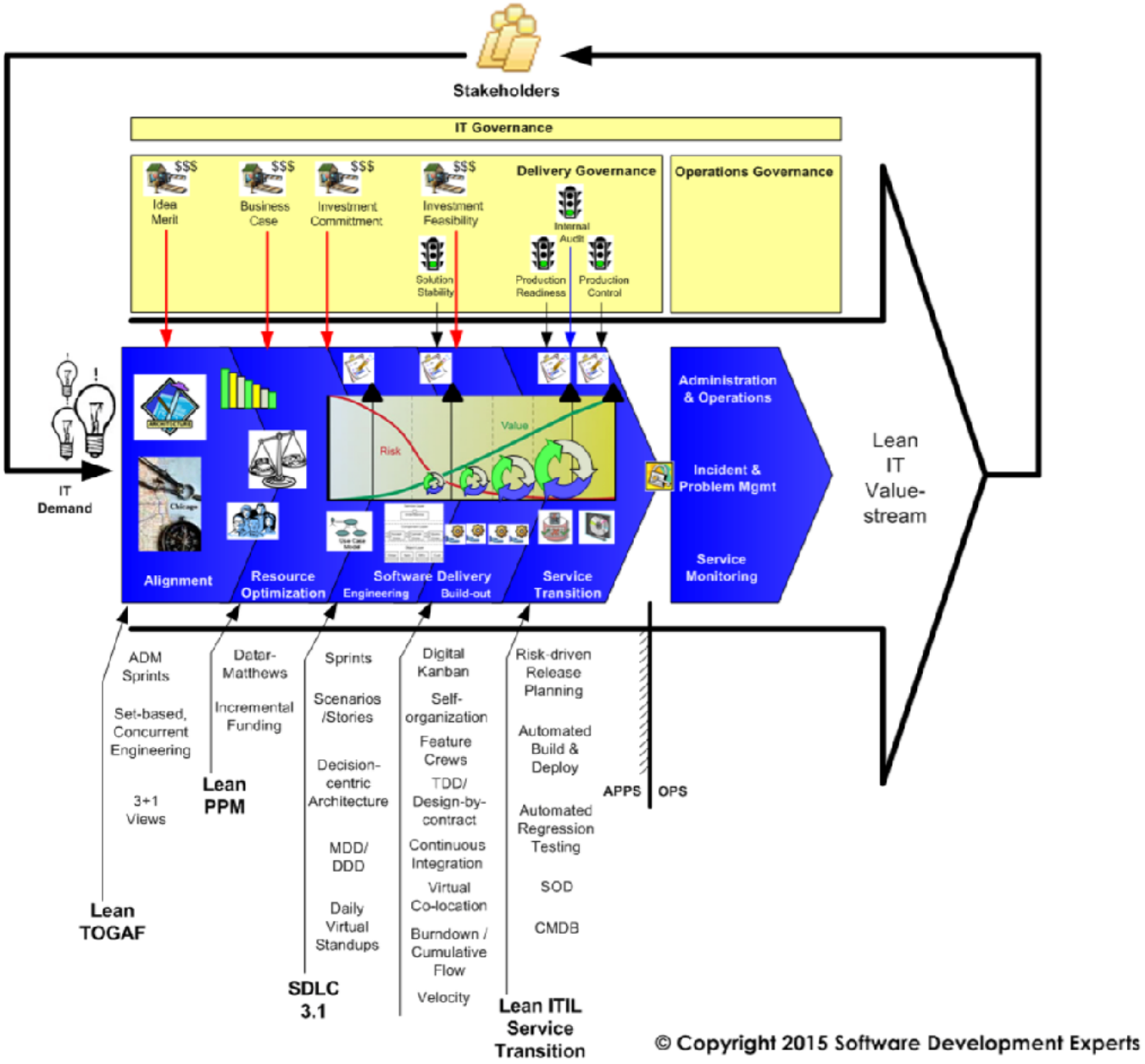
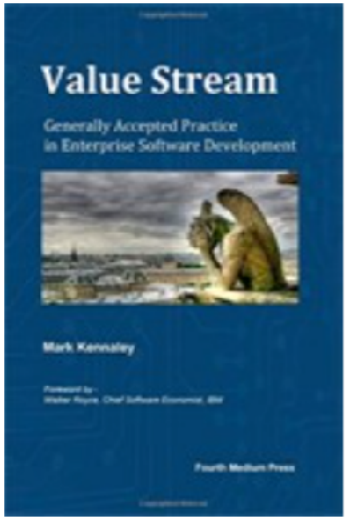


Figure 10.6 Functional view of the generic change management process

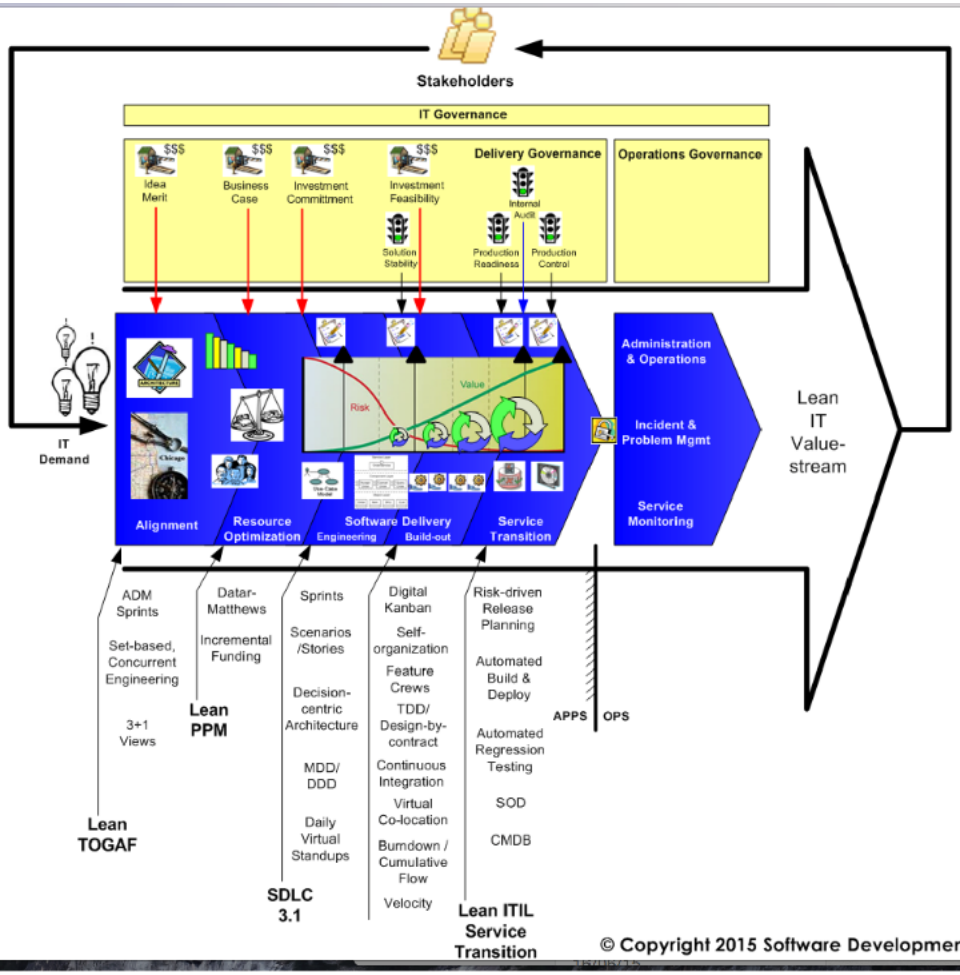
Page 394, Joe Kasser, 'Holistic Thinking
Creating innovative solutions to complex problems', Second Edition

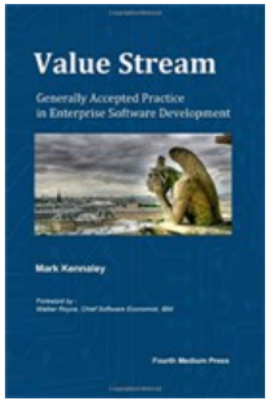

Means Objectives
Strategic Objectives
Fundamental Objectives
Upstream
Support Team
(Stakeholders)
<— Your Objectives.
Their Results for you —>
Your
Planning Level
Downstream
Stakeholders
Other Upstream
Stakeholders
Their Objectives ->
<—Their Needs
Satisfied by You.



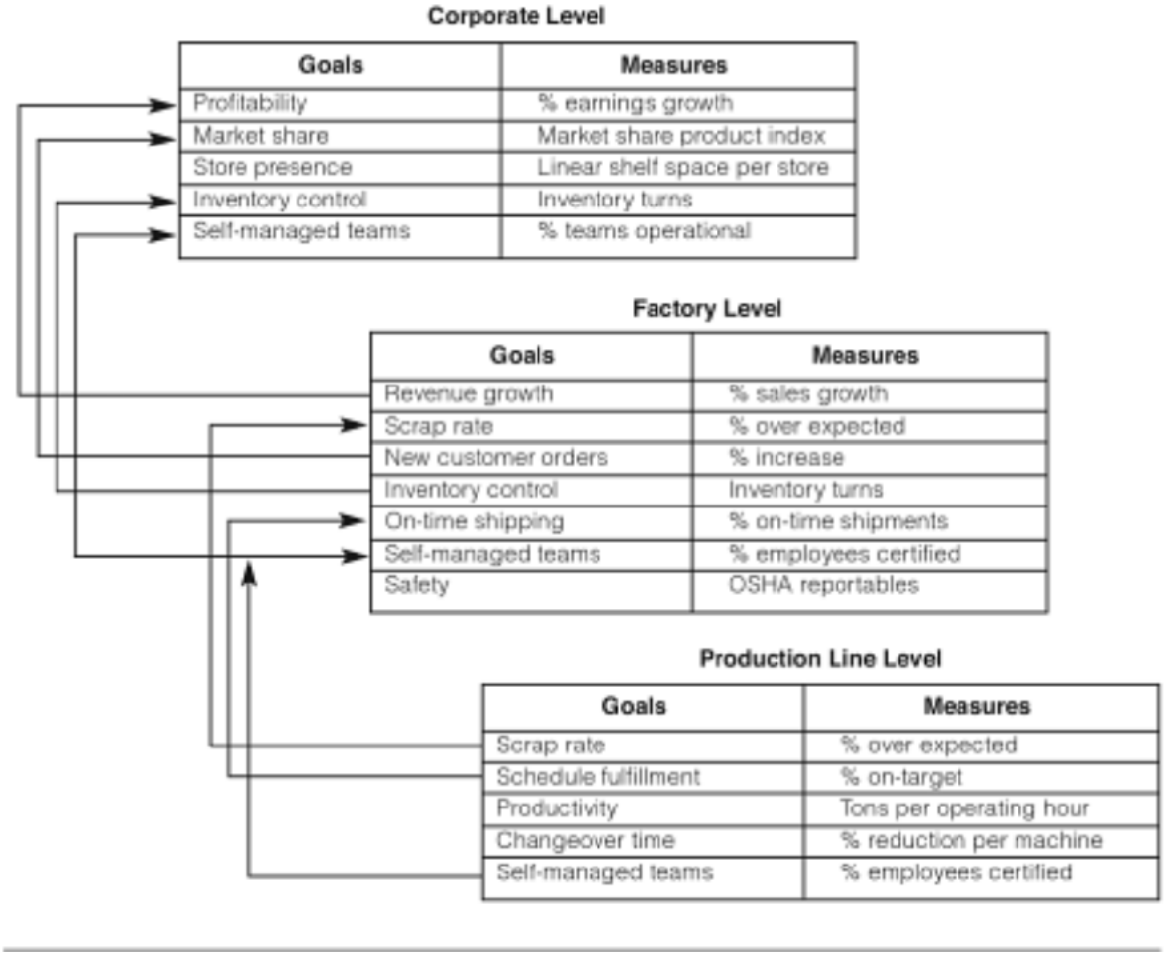


Value Stream Stakeholder





R I Wise



Corporate Level

Goals	Measures
Profitability	% earnings growth
Market share	Market share product index
Store presence	Linear shelf space per store
Inventory control	Inventory turns
Self-managed teams	% teams operational

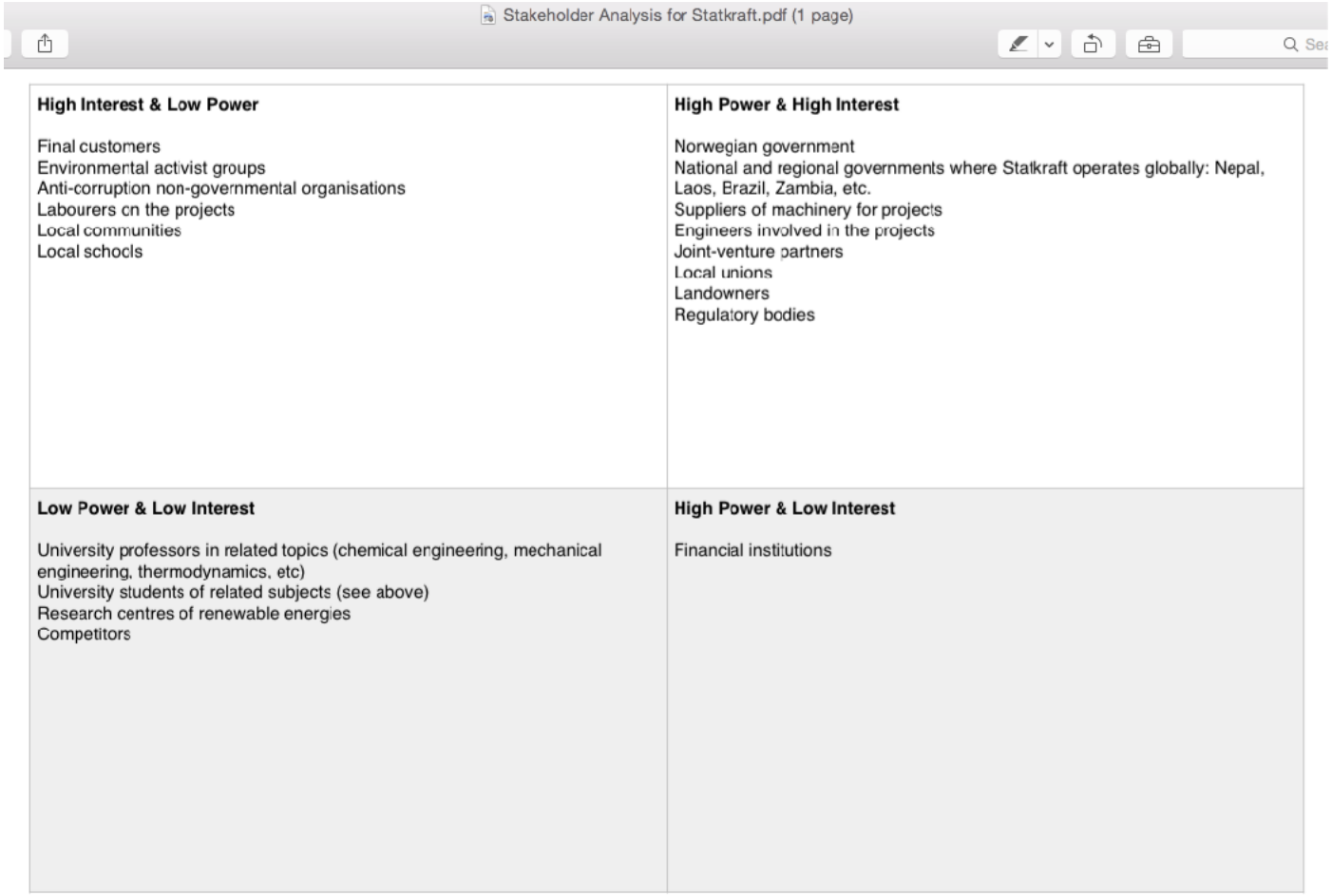
Factory Level

Goals	Measures
Revenue growth	% sales growth
Scrap rate	% over expected
New customer orders	% increase
Inventory control	Inventory turns
On-time shipping	% on-time shipments
Self-managed teams	% employees certified
Safety	OSHA reportables

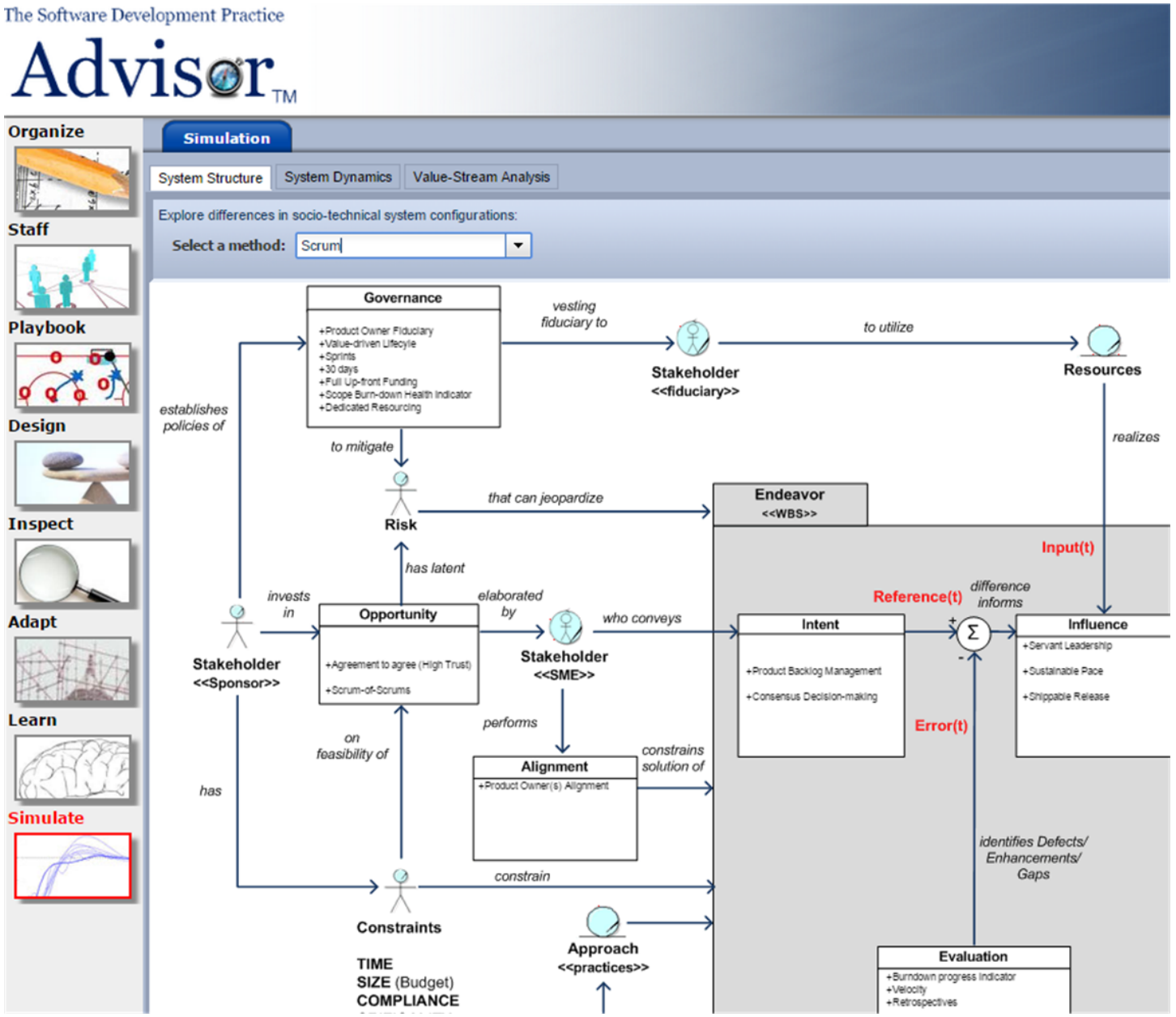
Production Line Level

Goals	Measures
Scrap rate	% over expected
Schedule fulfillment	% on-target
Productivity	Tons per operating hour
Changeover time	% reduction per machine
Self-managed teams	% employees certified

Statskraft Stakeholder Matrix



Courtesy of "Dimitrios Polychronopoulos" griegogrec@gmail.com
Bedriftsøkonomisk Institutt 2015



Brodie's Stakeholder Map 2014 PhD

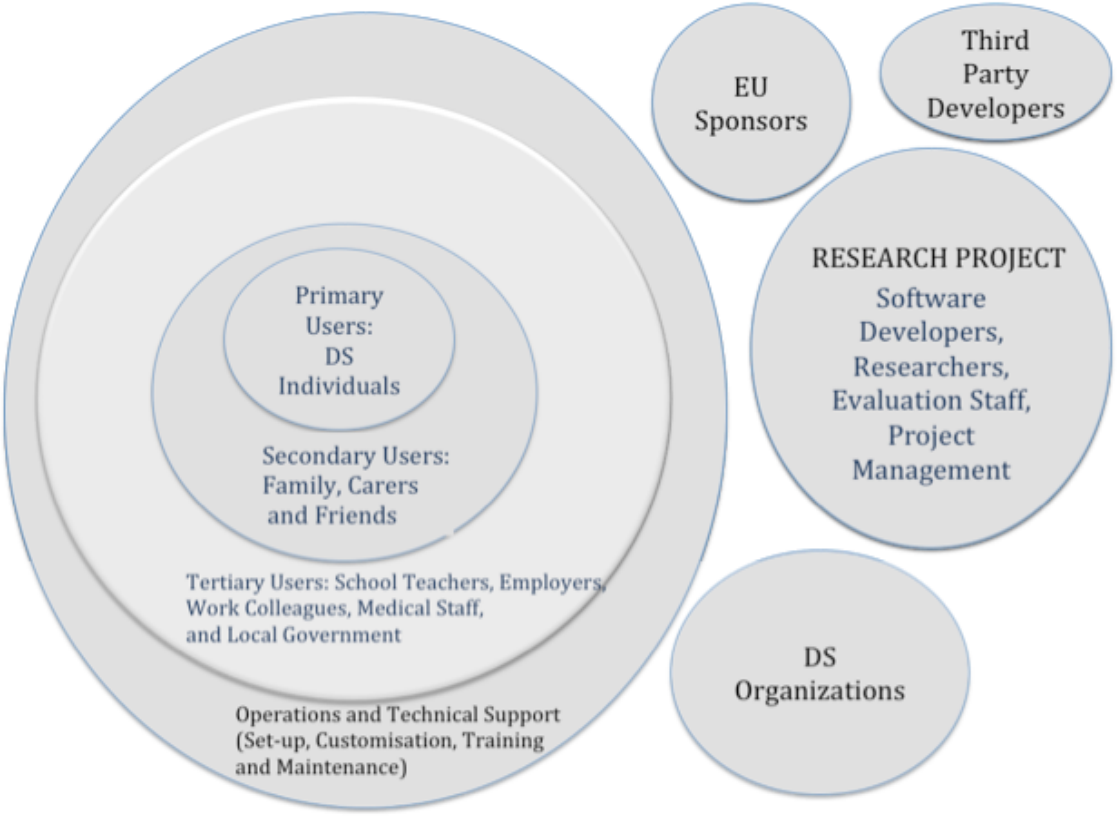


Figure 5.y: Various stakeholders

Brodie's Stakeholder Map 2014 PhD

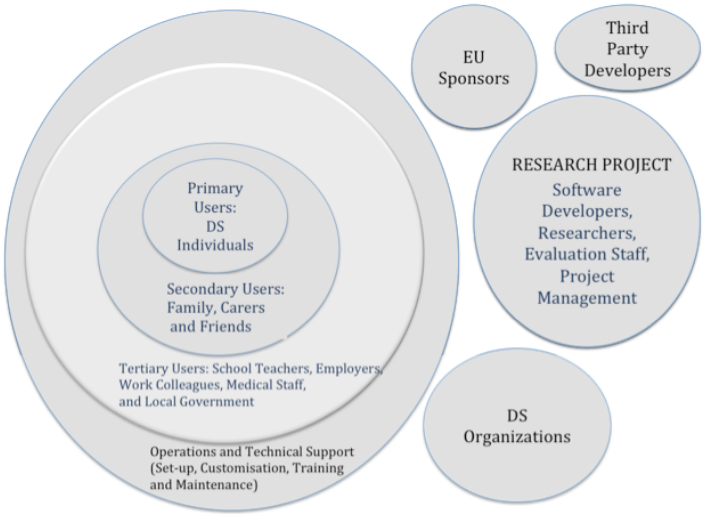


Figure 5.y: Various stakeholders

- **2. The stakeholders**
- The stakeholders identified to date include:
- Primary users (PU) - Down's Syndrome individuals
  - children
  - teenagers
  - adults (19% work and 23% attend a day centre)
- Secondary users (SU) - carers
  - Family or care home (85% + 3%)
  - Monitoring (as opposed to living alongside) (12%)
- Tertiary users (TU) – friends (Note: in their own right some could additionally be primary users)
- Tertiary users (TU) - teachers (including day centre staff) (23% attend a day centre + x% at school)
- Tertiary users (TU) - employers (19% work)
- Tertiary users (TU) - health-related staff (doctors, nurses, dentists, nutritionists, etc.)
- Down's Syndrome organizations
- Project system developers
- Technical support
- Operations
- Researchers
- EU project sponsors
- Legislation
- Third party developers
- Project management
- Research organizations
- Industrial partners.

Down's Syndrome Case Objectives, Functions: Brodie PhD Case 2014

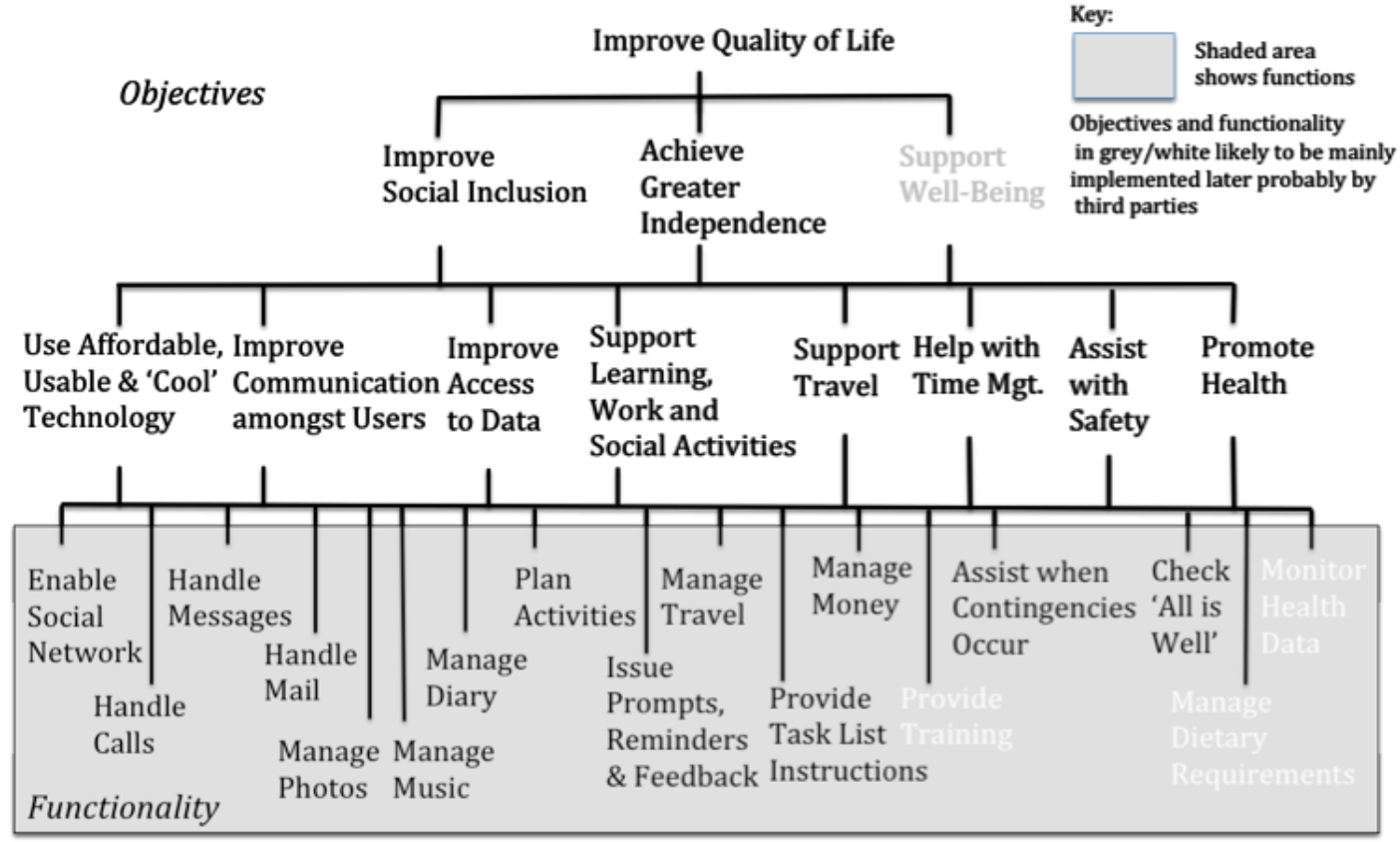
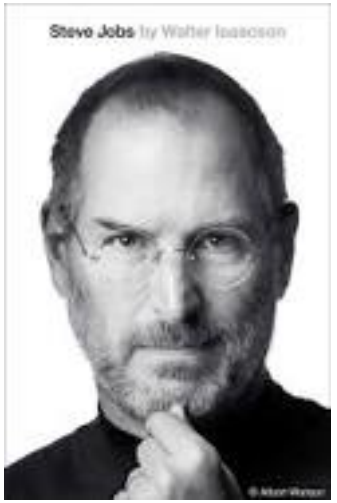


Figure 5.X: Primary user objectives and functionality

Steve Jobs
on Experience and Design

- A lot of people in our industry haven't had very diverse experiences.
- So they don't have enough dots to connect, and they end up with very linear solutions without a broad perspective on the problem.
- The broader one's understanding of the human experience, the better design we will have.
-
- Via Michal Vallo Budapest talk 2014



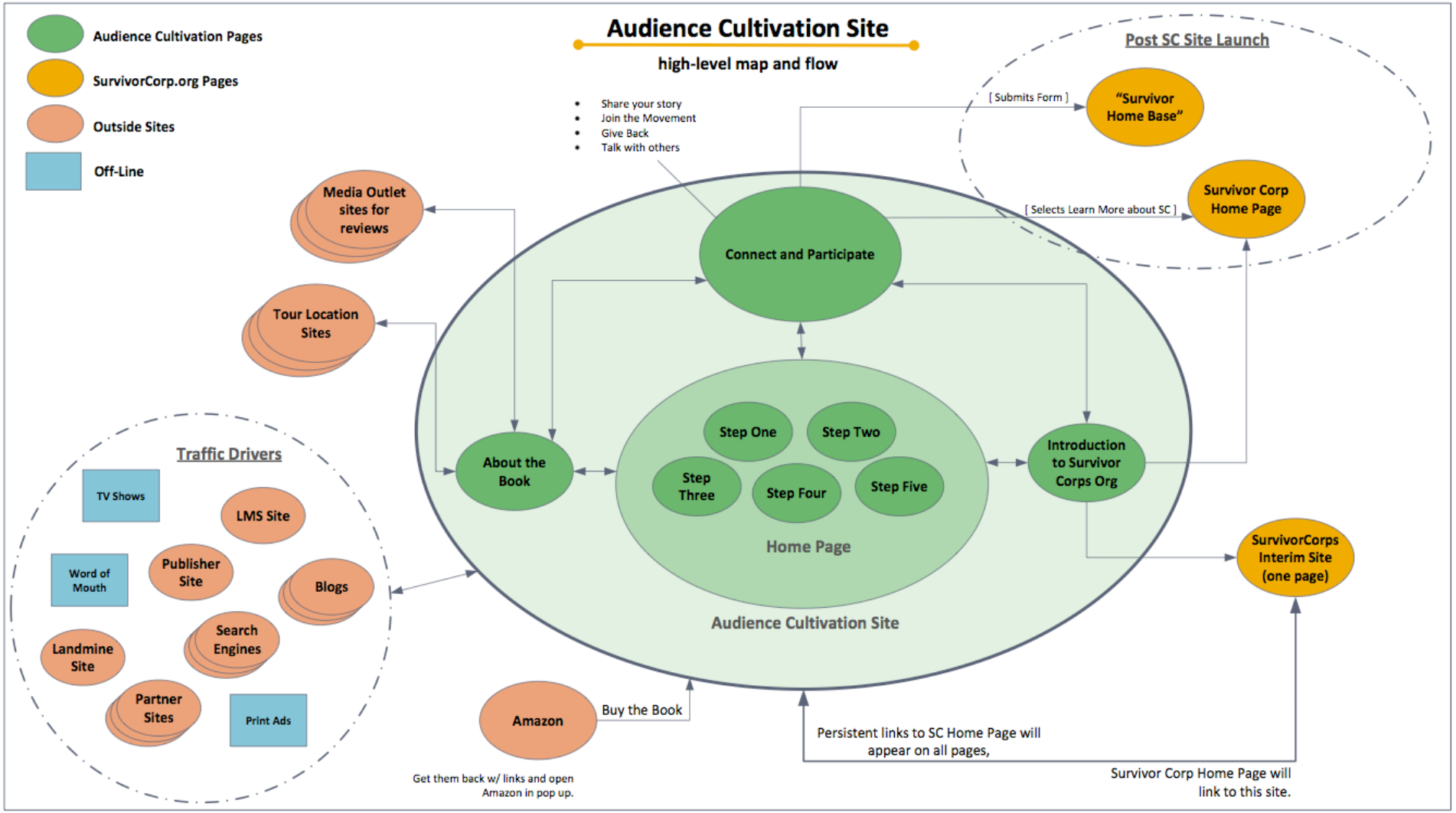
Roxanne Miller's Stakeholder Lists "The Quest for Software Requirements

- ❑ Sponsor/Champion/Client
- ❑ End-User/Customer
- ❑ Business Subject Matter Expert (SME)
- ❑ Business Process Area Experts
- ❑ Technical Subject Matter Expert (SME)
- ❑ Government Authority
- ❑ Regulatory or Compliance Authority
- ❑ Industry Standards Authority
- ❑ Special Interest Groups
- ❑ Cultural Interest Groups
- ❑ Public Opinion Representatives
- ❑ Professional Organizations
- ❑ Market Analysts
- ❑ System End-users
- ❑ System Buyers
- ❑ Recycling and Waste Managers
- ❑ Usability and Efficiency Experts
- ❑ Business Support Departments
  - Audit
  - Sales
  - Marketing
  - Accounting
  - Legal
- ❑ User Acceptance Test Group
- ❑ Development Team Members
  - System Architect
  - Quality Assurance
  - System Analyst
  - Designer
  - Developer (Programmer)
  - Database Administrator (DBA)
  - Data Warehouse Specialist
  - Tester
  - Release Coordinator
  - Technical Writer
- ❑ Production Support Personnel
- ❑ End-user Trainer or Training Personnel
- ❑ Network Planner
- ❑ Usability Engineer
- ❑ Business Operations Support Personnel
- ❑ Technical Operations Support Personnel
- ❑ Implementation Architect
- ❑ Configuration Management
- ❑ Product Disposers
- ❑ Project Sponsor
- ❑ Business Process Owner
- ❑ Project Manager
- ❑ Requirements Management Process Owner
- ❑ Project Team Members
- ❑ Implementation Support Team
- ❑ Project Investors
- ❑ Maintenance and Service Staff

Create value for stakeholders

We believe that all of our shareholders and other **stakeholders** are best served by **...** We will not jeopardize the important **values** we are creating at **NCR** and **...**

- **Stakeholders** are all constituencies with a stake in the fortunes of the company. **NCR's** primary mission is to **create value** for our **stakeholders**..
  - www.**value**basedmanagement.net/articles_mctaggart_governing_full.pdf - Similar
- 1887 , **NCR** took the initiative to identify its mission as to "**create value for stakeholders**". Try as they might, **NCR** ultimately failed with this **...**
- maaw.info/ArticleSummaries/ArtSumEstes92(2).htm
- 1987 A company wide program helped make **NCR** people aware of the company's mission to "**create value for stakeholders**". New products included: **...**
  - www.**ncr**.org.uk/page45.html
- In the late-80s, NCR took the initiative to identify its mission as to "create value for stakeholders". Try as they might, NCR ultimately failed with this mission. The accounting system and accounting culture functioned to deter it from its mission, constantly pulling the company and all management decisions away from stakeholder value and back to stockholder value.
  - http://maaw.info/ArticleSummaries/ArtSumEstes92(2).htm


Audience Cultivation Pages
SurvivorCorp.org Pages
Outside Sites
Off-Line
Audience Cultivation Site
high-level map and flow
Share your story
Join the Movement
Give Back
Talk with others
Post SC Site Launch
[Submits Form]
"Survivor Home Base"
Survivor Corp Home Page
[Selects Learn More about SC]
Media Outlet sites for reviews
Tour Location Sites
Connect and Participate
About the Book
Step One
Step Two
Step Three
Step Four
Step Five
Home Page
Introduction to Survivor Corps Org
Audience Cultivation Site
SurvivorCorps Interim Site (one page)
Traffic Drivers
TV Shows
LMS Site
Word of Mouth
Publisher Site
Blogs
Search Engines
Landmine Site
Partner Sites
Print Ads
Amazon
Buy the Book
Get them back w/ links and open Amazon in pop up.
Persistent links to SC Home Page will appear on all pages,
Survivor Corp Home Page will link to this site.

All Real Stakeholders:

- Many (30-40) multiple stakeholders to consider in QA:
- not just 'user' and 'customer'.
- This is a Scrum 'Product owner' responsibility:
  - but how well is it done in practice?
- We believe it is done badly,
  - and have constructive advice for doing it better.

Stakeholder: Concept *233 .

‘Stakeholders’ are:

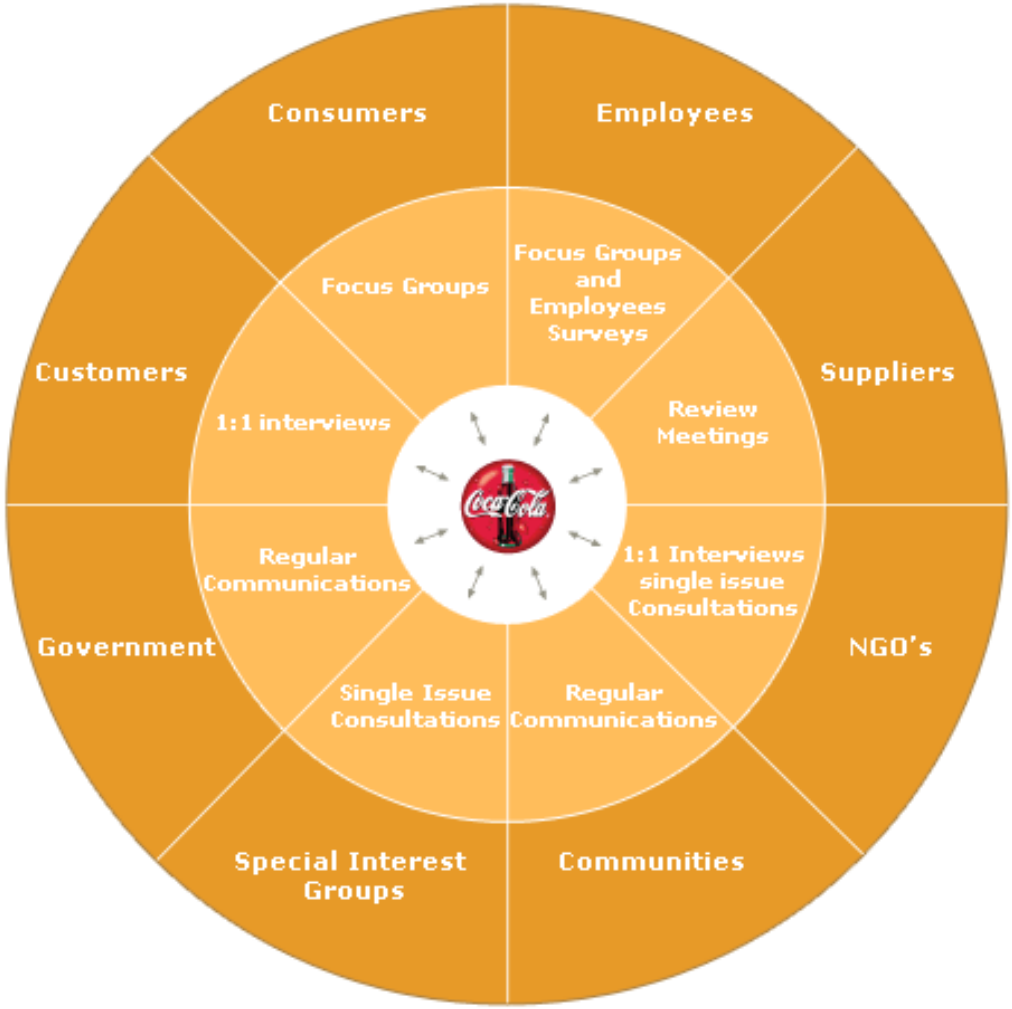
Any person, group or thing

that can determine our systems degree of success or failure,

by having an opinion about

system performance characteristics and

system lifecycle constraints



Stakeholder Related Concepts

Benefit **Concept *009**

Benefit is value delivered to stakeholders.

Client **Concept *235 May 6, 2003 TG**

A client is a person or group who has requested some defined work, system, or product, and will pay for it, directly or indirectly.

Client Stakeholder *650 May 21 2005

A Client Stakeholder states needs, approves requirements and receives benefits or results produced by a Server Stakeholder.

Consumer **Concept *038 May 6, 2003**

A consumer is a person or group, who makes use of ('consumes') a process output (product).

Decision-maker **Concept *237 January 27, 2003**

A decision-maker is a person or group, who will make a specific defined decision.

External Stakeholder: Concept *495 October 27 2001

External stakeholders are stakeholders which are directly impacted by, or which use, a defined focus system.

Internal Stakeholder *494 Oct 27 2001

Internal stakeholders are stakeholders that directly impact a defined focus system. They are related to the environment systems supporting the focus system.

Owner **Concept *102 February 5, 2003**

A person or group responsible for an object, and for authorizing any change to it.

Role **Concept *253 February 27, 2003**

A role is a defined responsibility, interest or scope for people.

Server Stakeholder *651 May 21 2005, 2017

A server stakeholder attempts to deliver some results to satisfy the needs of a client stakeholder

Sponsor **Concept *396 May 6, 2003tg**

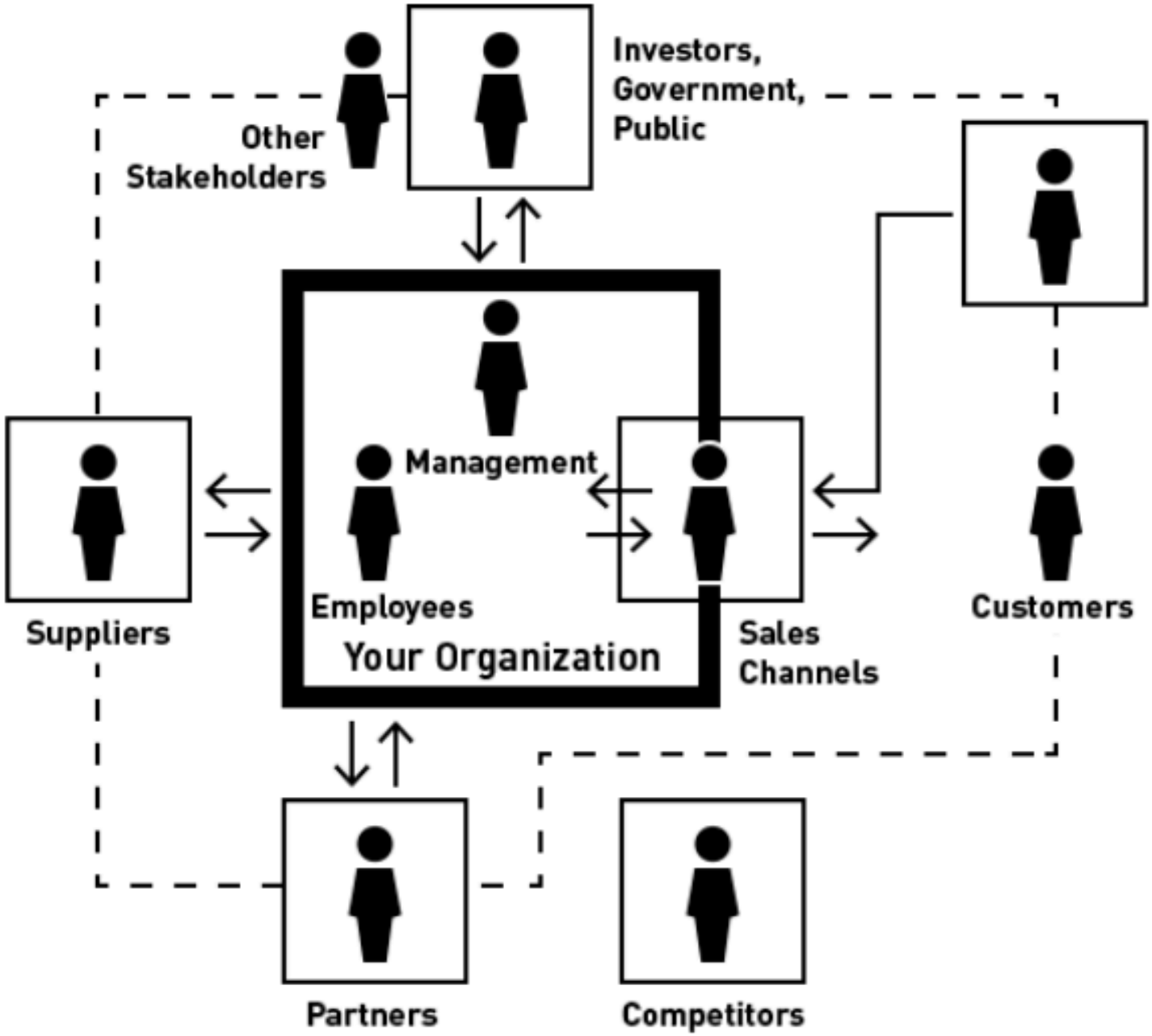
A sponsor is a person or group, who has an interest in supporting the achievement of specific system change.

Support System Concept *152 April 1, 2003

A support system is any system that has performance levels that impact a defined stakeholder environment. A support system is intended to contribute to the stakeholder benefit level.

User **Concept *234 May 6, 2003**

A user is a person or group, who actually will make *practical* use of a system.


Investors,
Government,
Public
Other
Stakeholders
Management
Suppliers
Employees
Your Organization
Sales
Channels
Customers
Partners
Competitors

The Stakeholder Analysis Worksheet

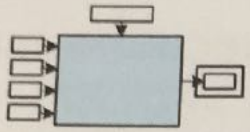
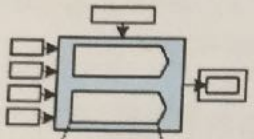
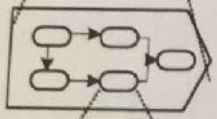
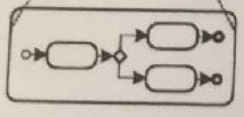
Stakeholder Analysis Worksheet

Organization-in-Scope: Copies-R-Us Store **Process-in-Scope:** Make Copies

Stakeholder Type	Needs/Expectations	KPIs	Objective
Customer	High Quality Copies	Complaints about Quality %	0% Complaints about Quality
Copies-R-Us Corporation	Copiers Produce High Quality Copies	Complaints about Quality %	<2% Complaints about Quality
Customer	Faster Service than Competitors	% of Customers Saying Service is Faster than other Copy Stores	95% of Customers Say Copies-R-Us is Fastest Copy Store
Copies-R-Us Corporation	Reasonable Profit	Average Profit per Job %	10% Profit per Job Average
Credit Agency	Consistent Number of Credit Approval Requests	Number of Credit Approval Requests per Month	> 300 Credit Approval Requests per Month
Delivery Service	Consistent Number of Deliveries	Number of Deliveries per Month	> 100 Deliveries per Month

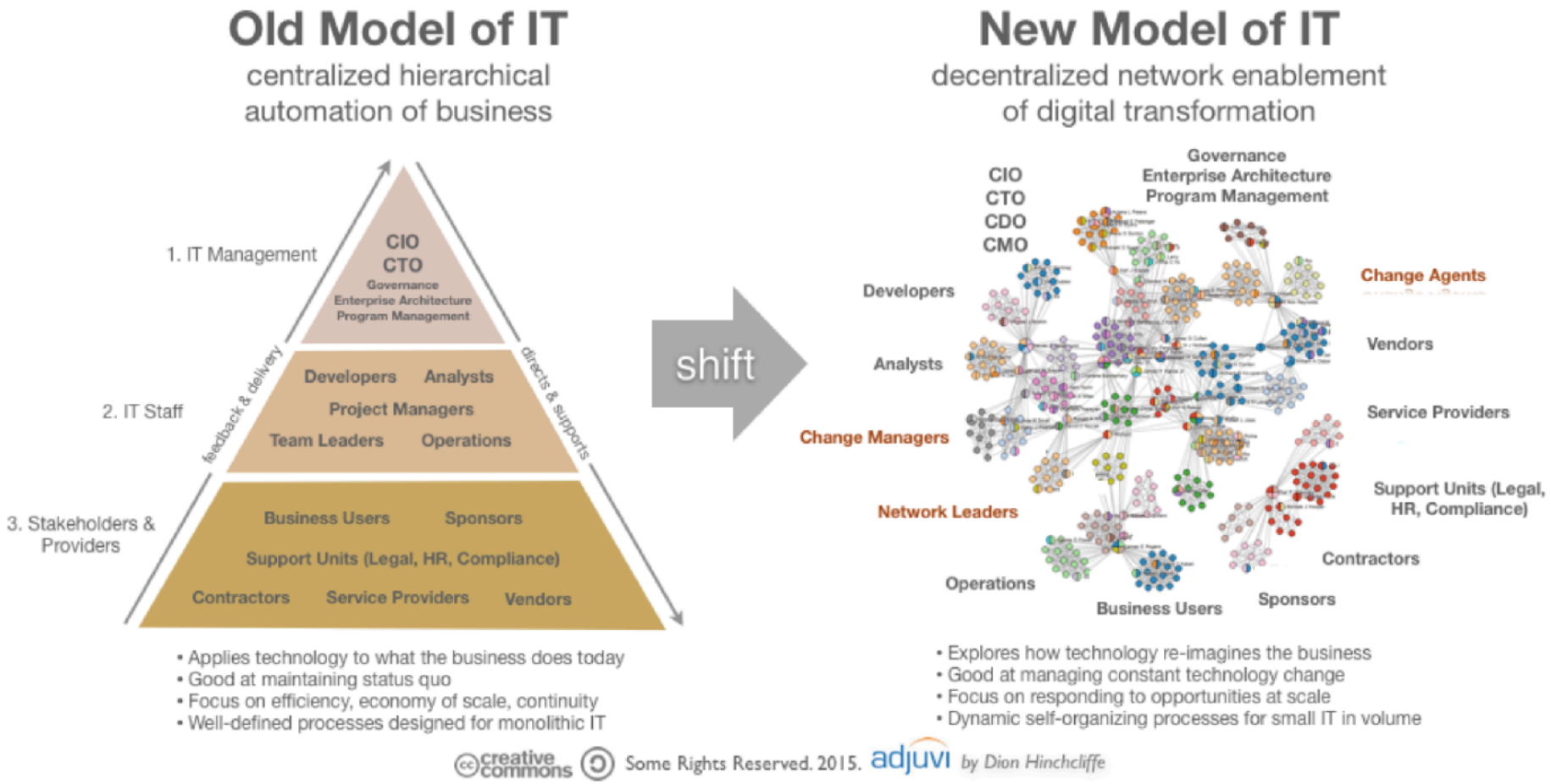
Types of Decomposition and Alignment

Decomposition

Vision Statement	Organization /Process	Stakeholders	KPI/Measures	Manager's Objectives	Business Rules
The goals of this organization are...	**Organization** 	The Stakeholders of the Organization are...	The organization scorecard defines the high priority measures the organization seeks to achieve...	Manager's objectives, incentives & bonuses aligned to organization goals	These policies will govern and be implemented by this organization
The goals of this value chain are...	**Value Chains or Level 1 Processes** 	The Stakeholders of the Value Chain are...	This value chain scorecard defines the high priority measures this value chain will be optimized to achieve...	Manager's objectives, incentives & bonuses aligned to value chain goals	These policies will govern and be implemented by this value chain
The goals of this process are...	**Level 2 Processes** 	The Stakeholders of this process are...	The process scorecard defines the high priority measures this process will be optimized to achieve...	Manager's objectives, incentives & bonuses aligned to process goals	These policies and business rules will govern and be implemented by this process
The goals of this subprocess are...	**Level 3 Process, Etc.** 	The Stakeholders of this subprocess are...	This subprocess scorecard defines the high priority measures this subprocess will be optimized to achieve...	Manager's objectives, incentives & bonuses aligned to sub-process goals	These business rules will govern and be implemented by this subprocess

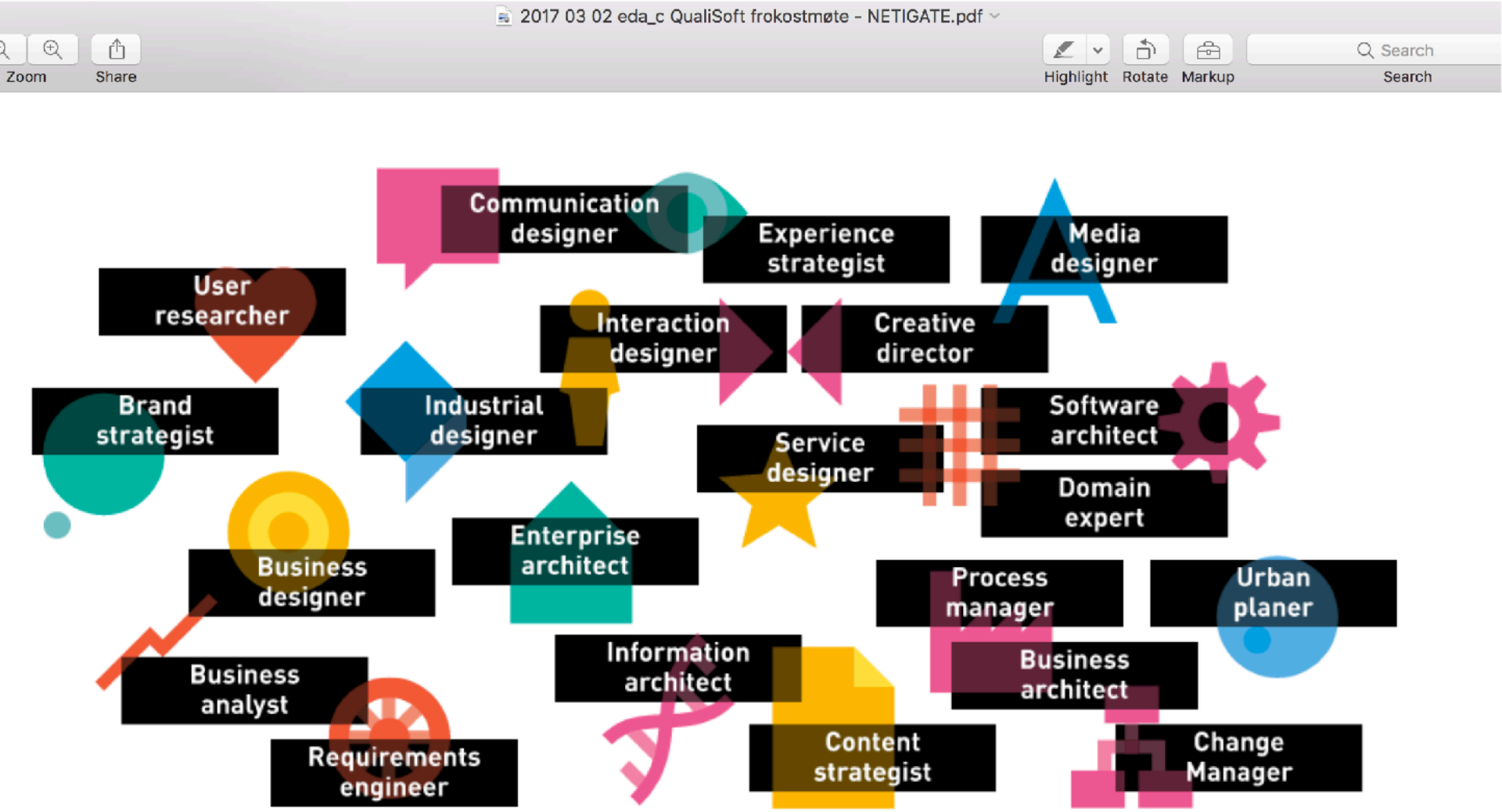
Alignment

BPTrends Associates



https://dionhinchcliffe.files.wordpress.com/2015/05/old_it_versus_new_it_networks_of_change_agents_enablement.png

Developer Stakeholders



Source: Milan Guenther 2017

Stakeholder Interests

For example they might have an interest in

1. *Setting the objectives for a process.*
2. *Evaluating the quality of the product*
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4. *Avoiding problems for themselves as a result of our product or system.*
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Stakeholder Map

Suzanne Robertson
& James Robertson

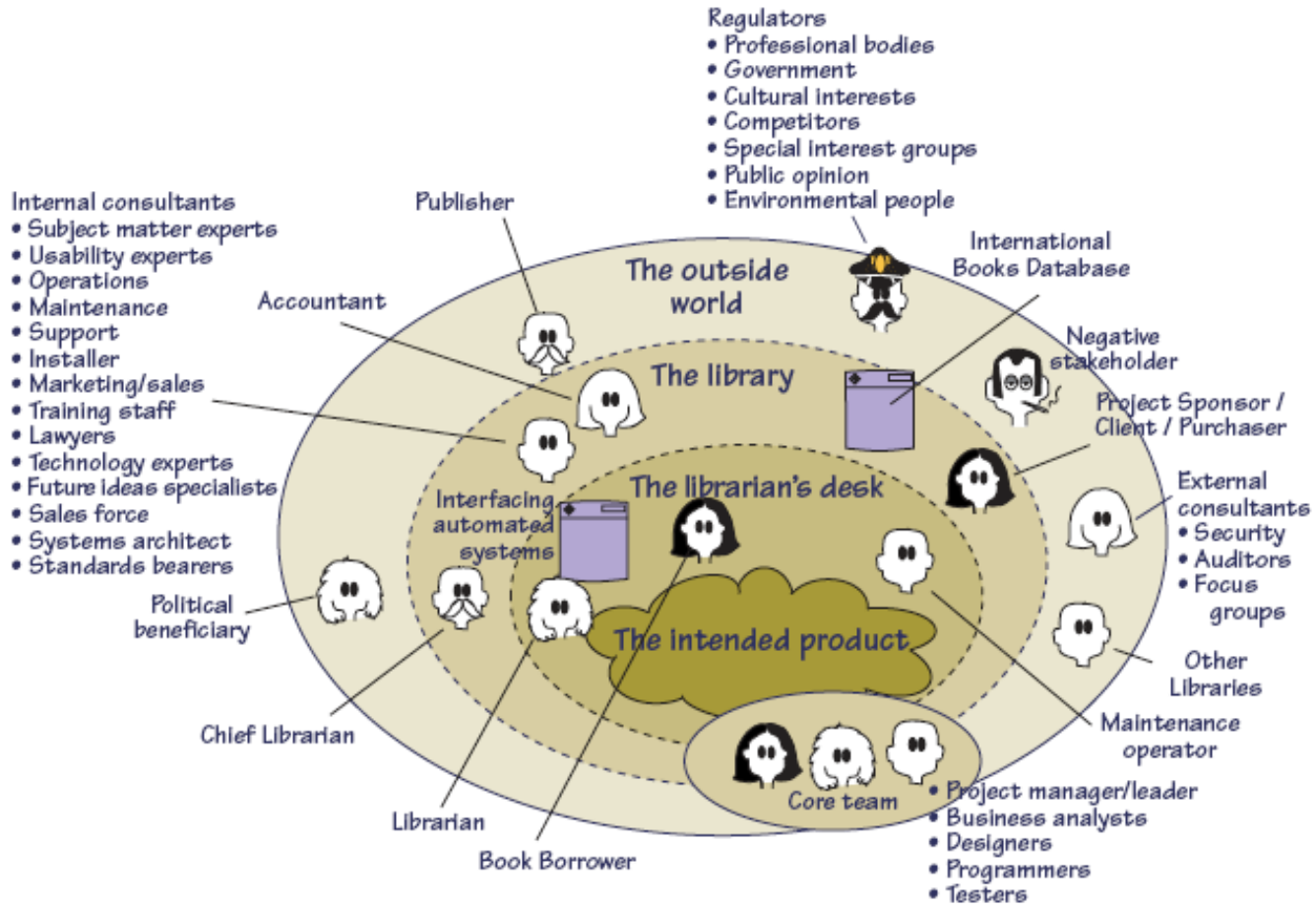

Figure 1: A Stakeholder Map for the Library Loans project

http://www.requirementsnetwork.com/sites/requirementsnetwork.com/files/Volere_Requirements-A_Socio_Technical_Discipline.pdf

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Each member of the design team will surely have an implicit mental image of the users, and each designer's image will be different.

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And that requires writing down the attributes of the expected user set, including:

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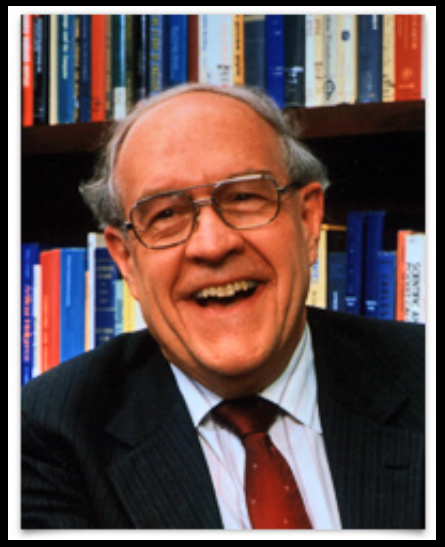
The Mythical Man-Month,
Anniversary Edition 1995, pp 258-9



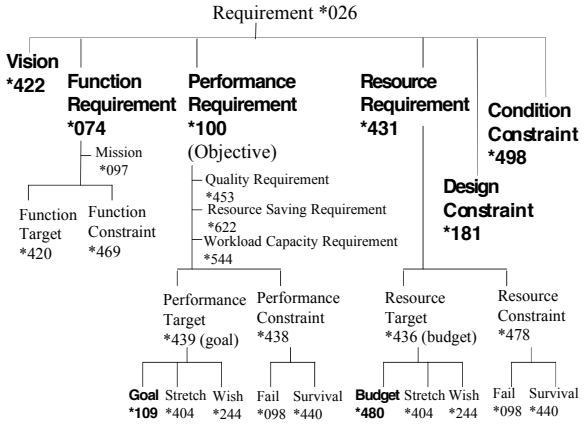
‘Requirement’: Defined

– **“stakeholder-prioritized future state”.**

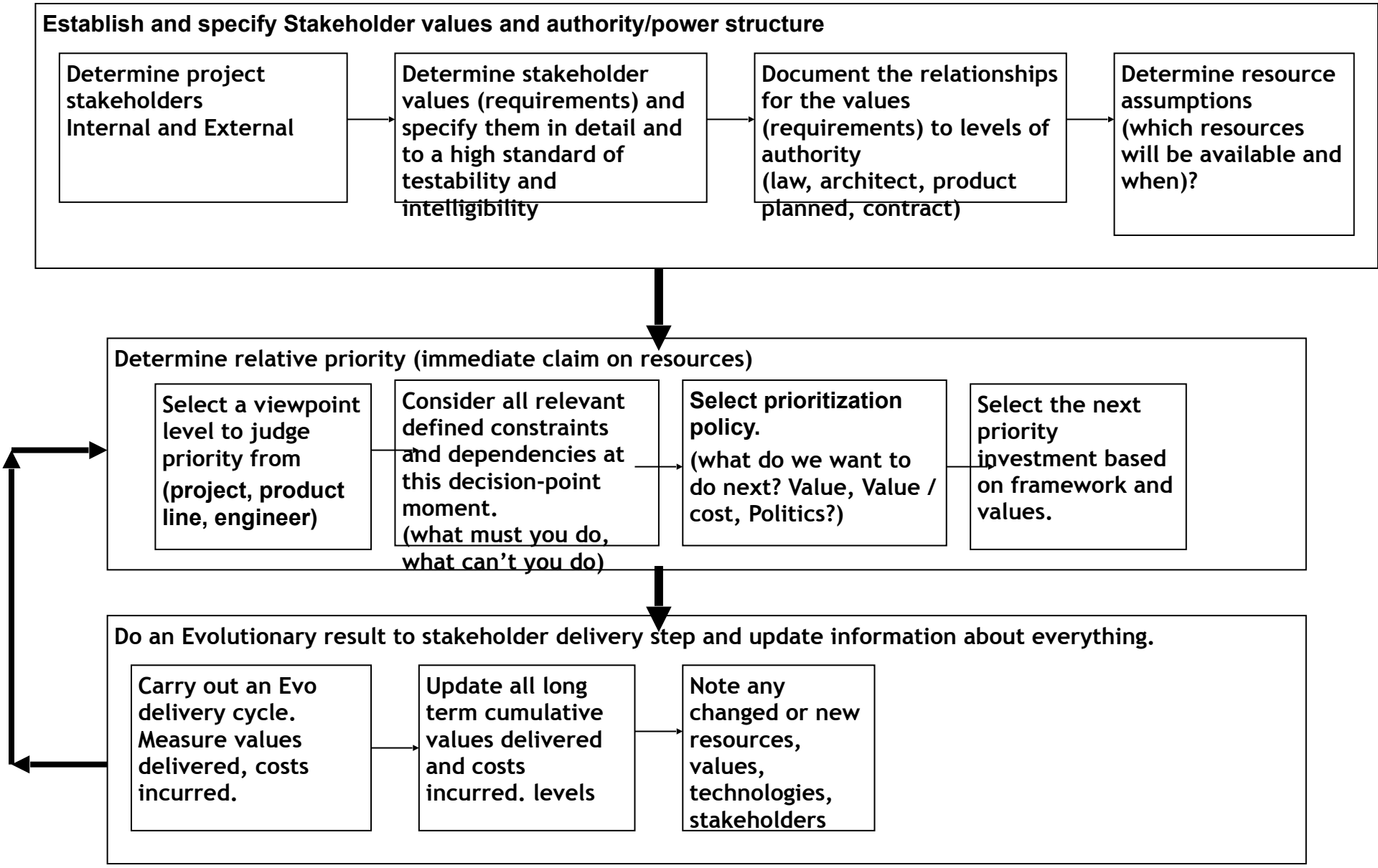
- **Some consequences of this definition:**
  - **requirements are *not* ‘absolute’**
  - **a requirement’s effective priority’ is *variable*, and depends on *many* factors, like**
    - **Value of doing it, cost of doing it, related constraints,**
    - **stakeholder power, formal requirement inclusion.**

– **Planguage helps you intelligently manage requirement priorities, so that you get maximum value for your limited resources (= ‘competitiveness’).**

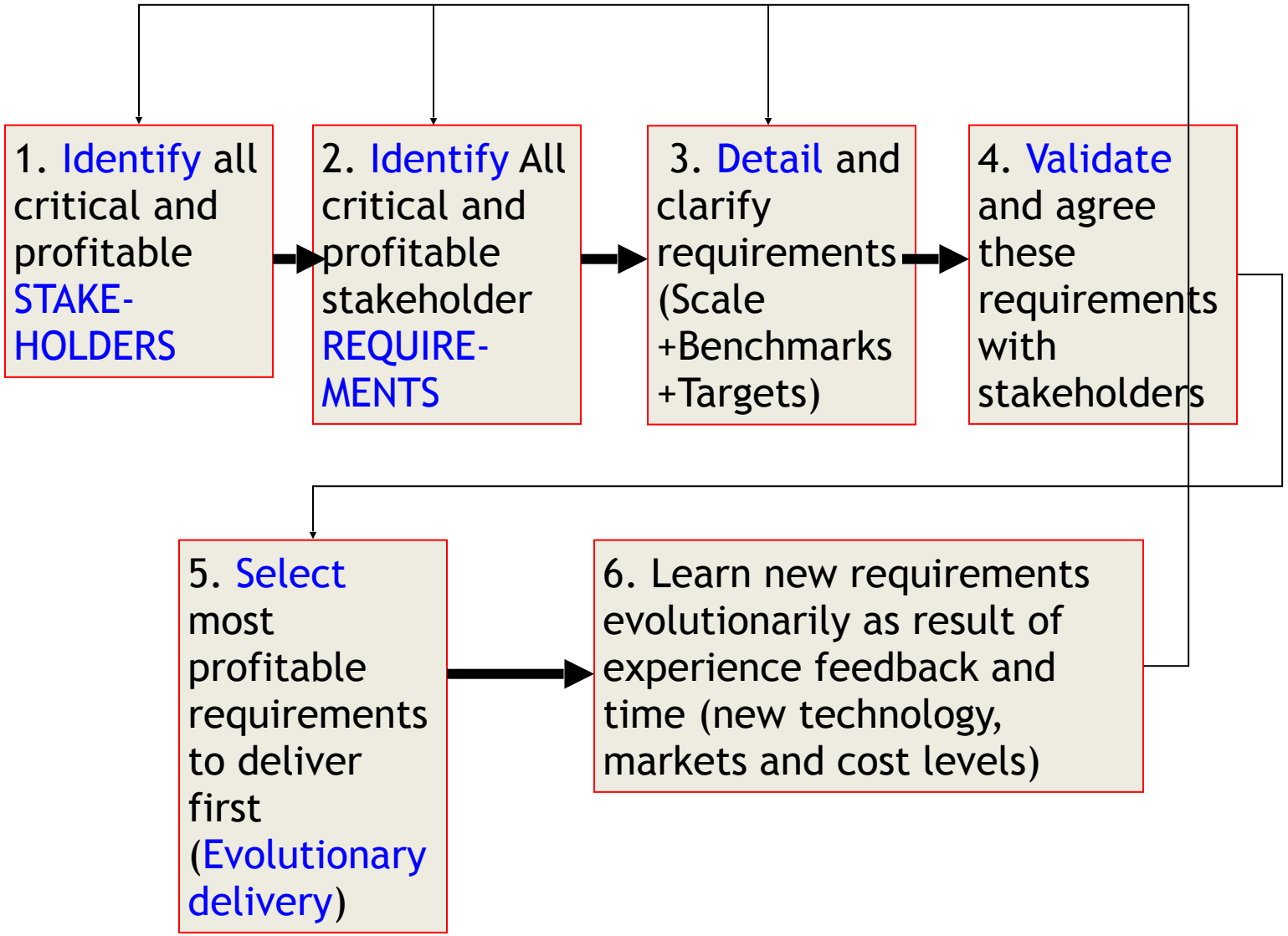
Some Formally Defined Requirement Concepts and types



Priority Determination Process



Stakeholders:
How to find out about, and confirm, their requirements



1. Exercise in specifying a requirement
10 minutes each point (1.1 etc.)

As a team: (5 MINUTES?)

1.1 Name 4 critical Requirements for each Stakeholder. Draw Quality Arrows

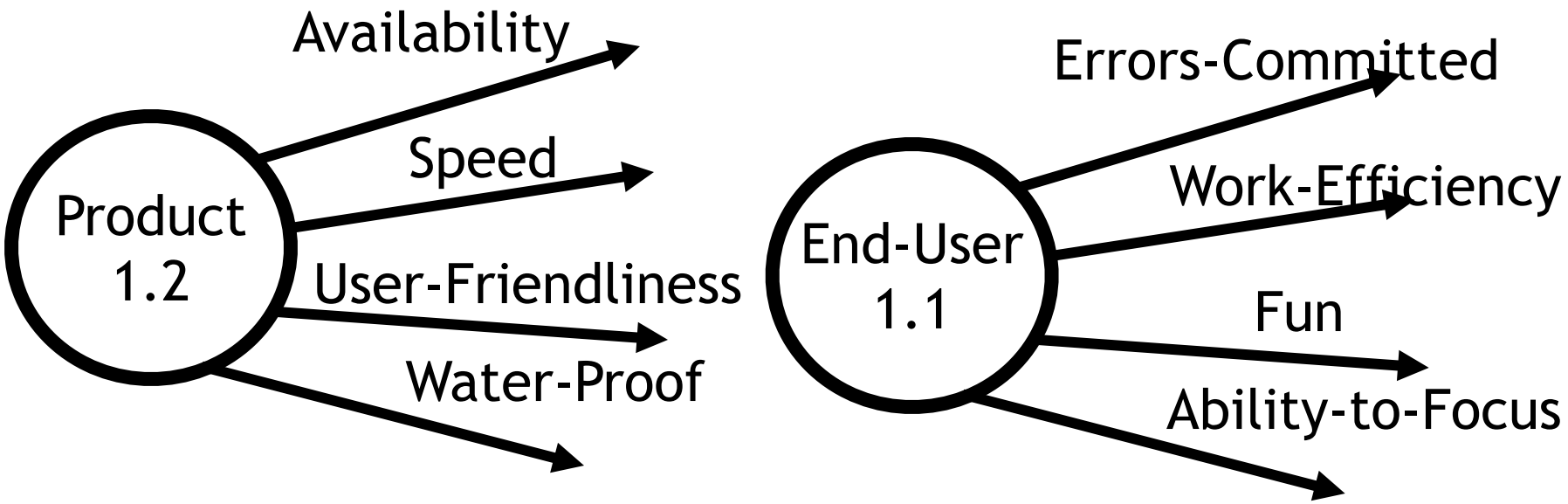
1.2 Name 4 critical Quality attributes for the Product. Draw Quality Arrows

Each team member: (5 MINUTES?)

1.3 Either: Detail at least one important Requirement for each Stakeholder

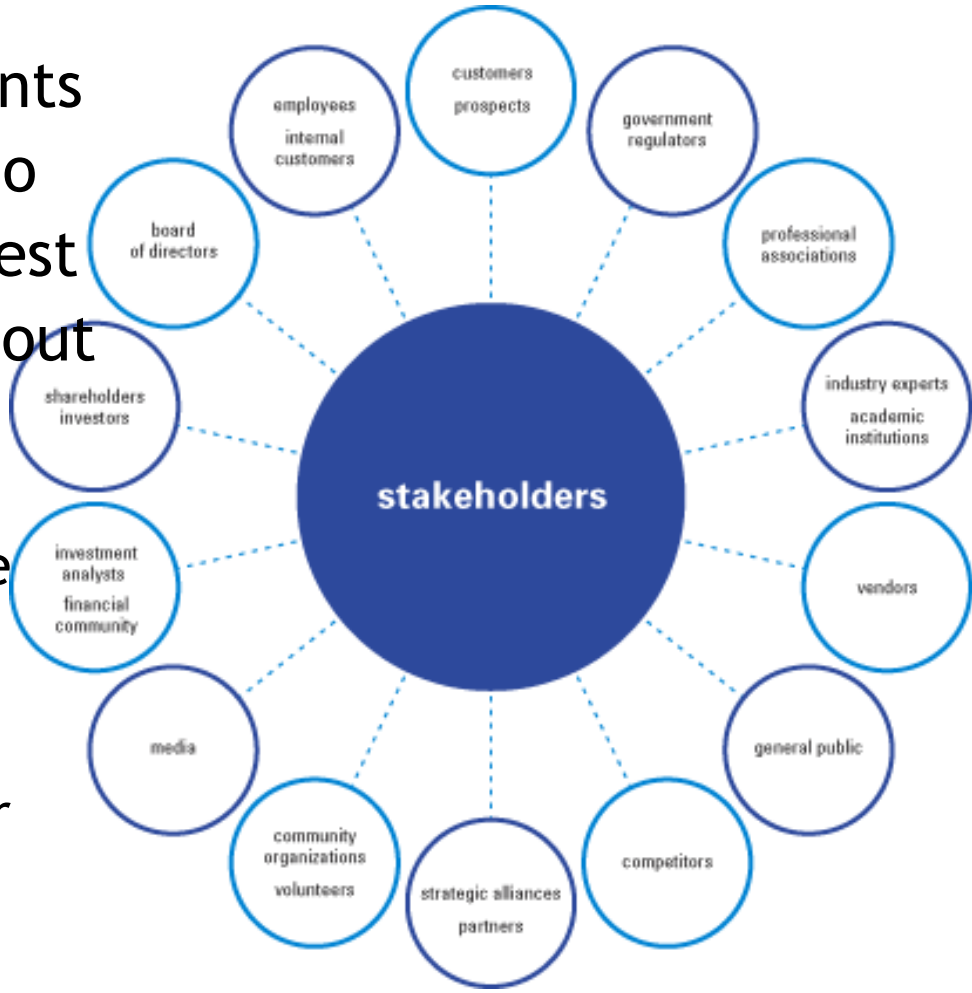
Or: 1.4 Detail at least one important Requirement for the Product

1.5 Each team member explains their effort to the others. (5 min.)



No Stakeholder?

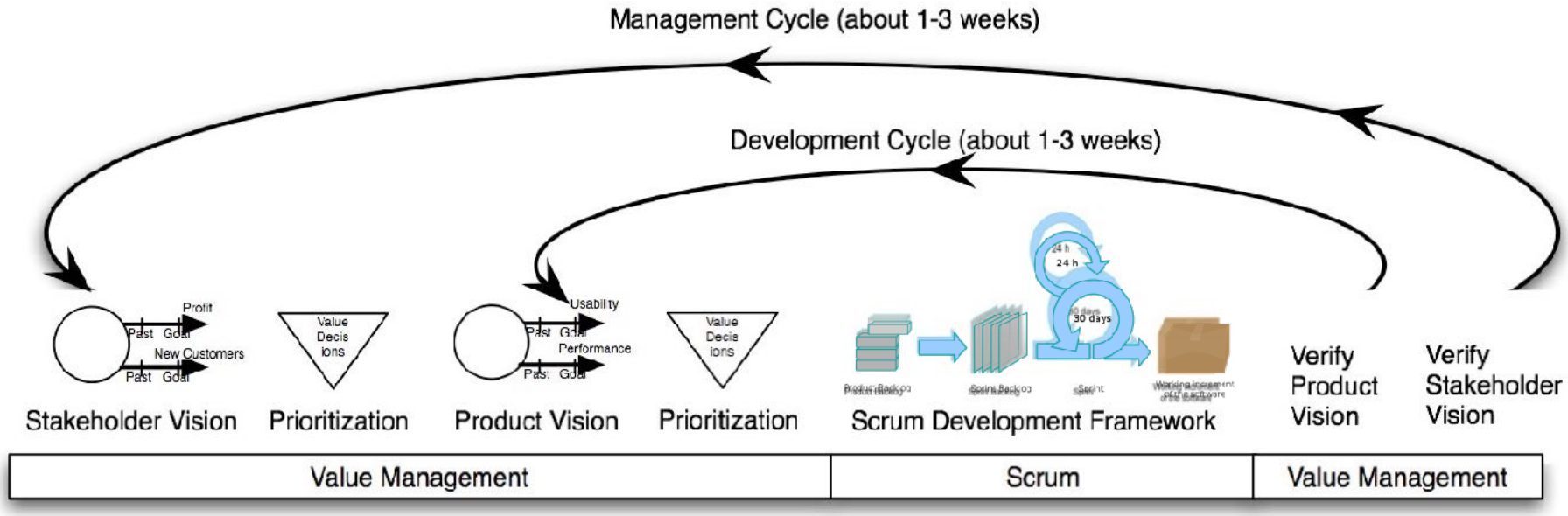
- No Stakeholder: no requirements
- No requirements: nothing to do
- No requirements: nothing to test
- If you find a requirement without a Stakeholder:
  - Either the requirement isn't a requirement
  - Or, you haven't determined the Stakeholder yet
- If you don't know the Stakeholder:
  - Who's going to pay you for your work?
  - How do you know that you are doing the right thing?
  - When are you ready?



Value Management (Evo) with Scrum development

- developing a large web portal www.bring.no/dk/se/nl/co.uk/com/ee at Posten Norge

Value Management



Value Decision Tables

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

	Product Value 1	Find.Fast
Stakeholder Value 1	-10%	50 %
Stakeholder Value 2	10 %	10%
Resou		

	Solution 1	Service Guide
Find.Fast	-10%	40%
Product Value 2	50%	80 %
Resources	1 %	2 %

Prioritized List
1. Service Guide
2. Solution 9

Scrum Develop
We measure improvements
Learn and Repeat

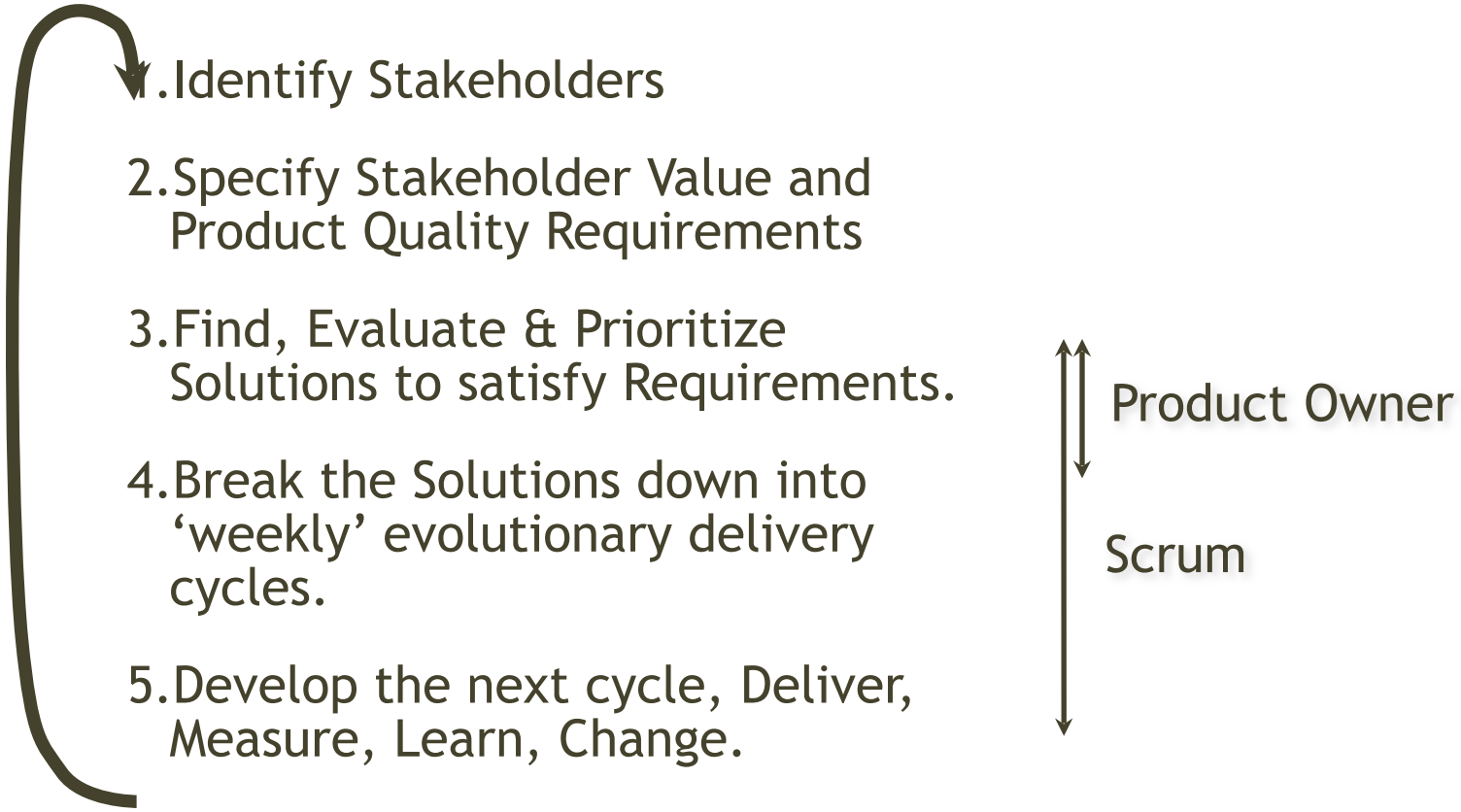
Wargame
Value Decision Table

Core-Pro-Funct **Posten Portal**

, , , , , , , , , , ,

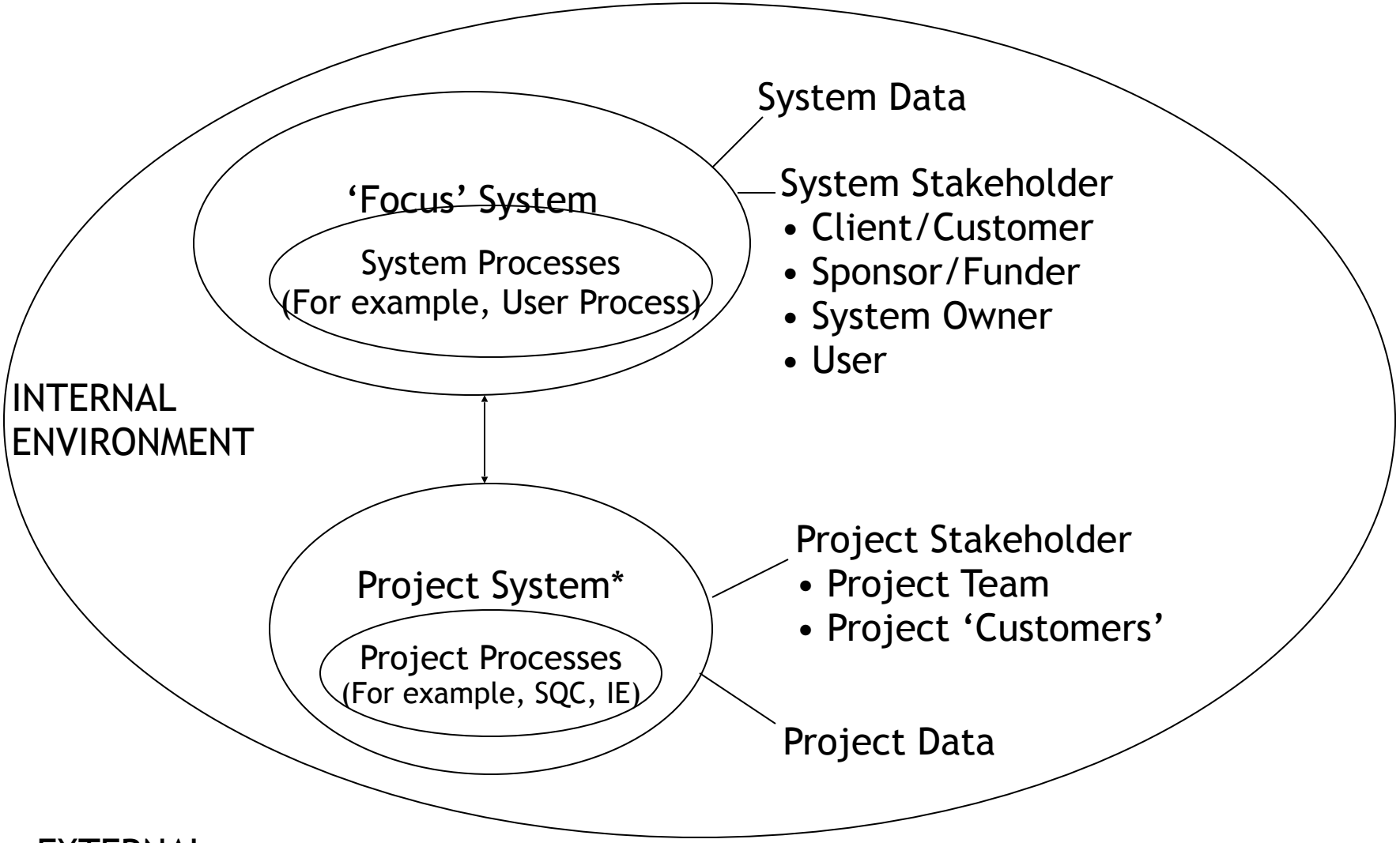
Value Result Requirements *Status when*	*Tolerable when*	*Goal when*	*Next-Level*	**Behovsorientert inndeling** *units*	*% of Goal*	**Produktveileder** *units*	*% of Goal*
Finn.Raskt				-3	**5 %**	-20	**35 %**
70	30	13		10	-18 %	-5	9 %
14.12.2008	31.03.2009	31.03.2009		0		0,7	25 %
					% of Goals		*% of Goals*
			Sum Impact		**28 %**		**138 %**
			Sum ± Variation		132 %		53 %
			Sum Conservative Impact				97 %
Development-Resources				*units*	*% of Budget*	*units*	*% of Budget*
Budsjett - eksterne ressurser			*Impact*	100	3 %	400	**13 %**
1000	4310	4000	*Variation*	10	0 %		
18.12.2008	01.05.2008	01.05.200			-7 %		-27 %
Interne timer				30	**1 %**	100	**2 %**
0	5700	5440					
18.12.2008	01.05.2008	01.05.2008			-1 %		-4 %
					% of Budget		*% of Budget*
			Sum Impact		**4 %**		**15 %**
			Sum ± Variation				
			Sum Conservative Impact		-8 %		-30 %

Value Management Process (Evo)



Stakeholders: Quality

- In order to understand QUALITY
- You have to understand STAKEHOLDERS
  - —And the qualities they prioritize

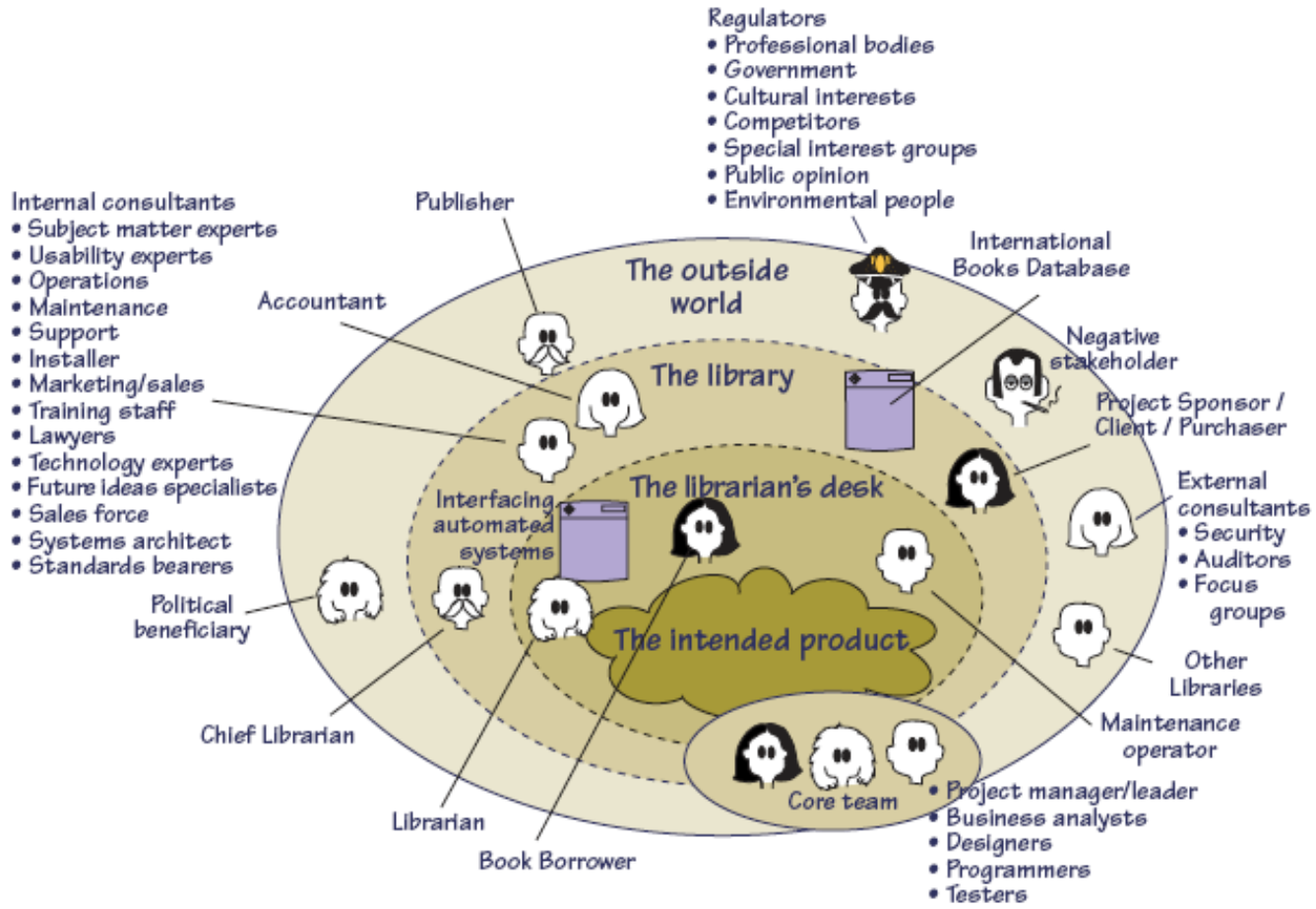


** Project System could be embedded in the 'Focus' System.*

The Atlantic Systems Guild Ltd.

Stakeholder Map

Suzanne Robertson
& James Robertson



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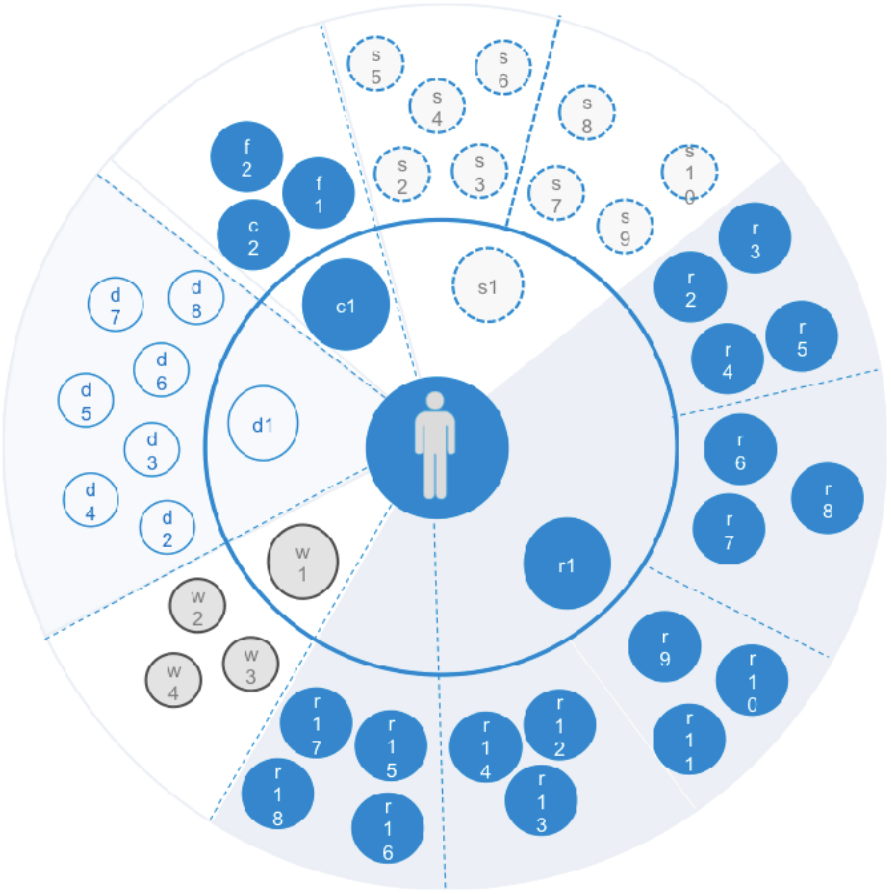
Man-Chie Tse &
Ravinder Singh Kahlon

STAKEHOLDERS



Robertson's Volere Stakeholder Matrix 2003

Stakeholder Role (The job title, department or organisation that indicates a stakeholding)	Stakeholder Name (The name(s) of the responsible stakeholder(s)	Necessary Involvement (Estimate of when and how much time)	Classes of Knowledge: Goals	Business Constraints	Technical Constraints	Functionality	Look and Feel	Usability	Performance
Client									
Customer(s)									
Business/Subject Experts									
Future Ideas Specialists									
Current System Specialists									
Clerical User									
Technical User									
Potential User									
Sales Specialist									
Marketing Specialist									
Aesthetics Specialist									
Graphics Specialist									
Usability Specialist									
Safety Specialist									
Security Specialist									
Cultural Specialists									
Legal Specialists									
Environmental Specialists									
Maintenance Specialists									
Packaging Designer									
Manufacturer									
Product Installer									

Stakeholders, Goals, Scope 4

http://www.volere.co.uk/pdf%20files/StkGoalsScope.pdf

‘Requirement’: Defined

Concept *026 Version January 23rd 2008

- A ‘requirement’ is a
  - **“stakeholder-prioritized future state”.**

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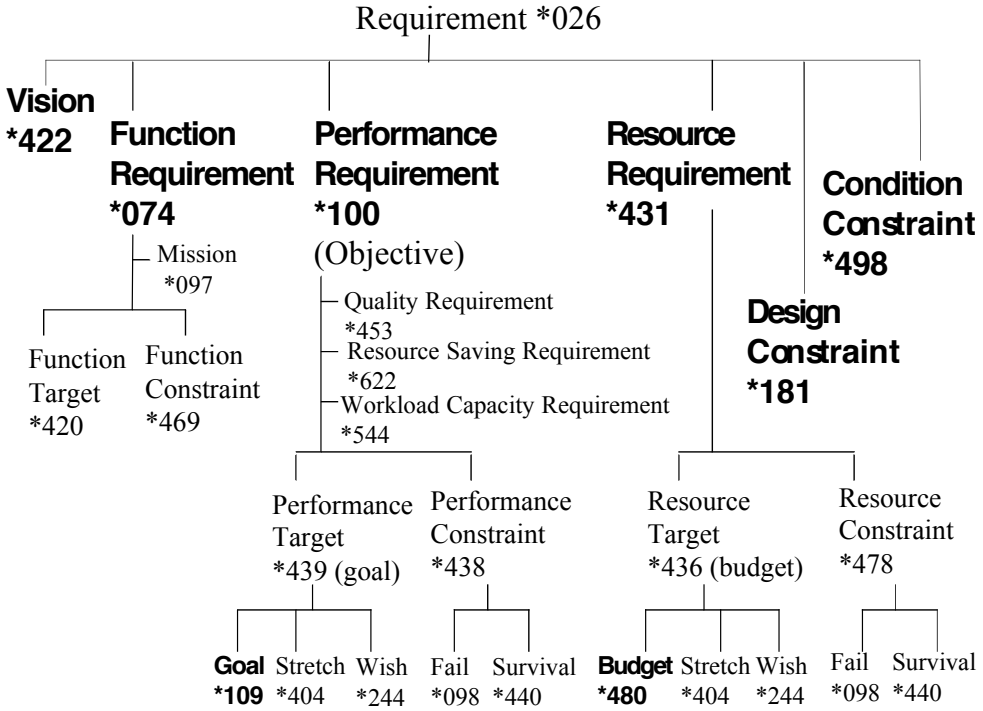
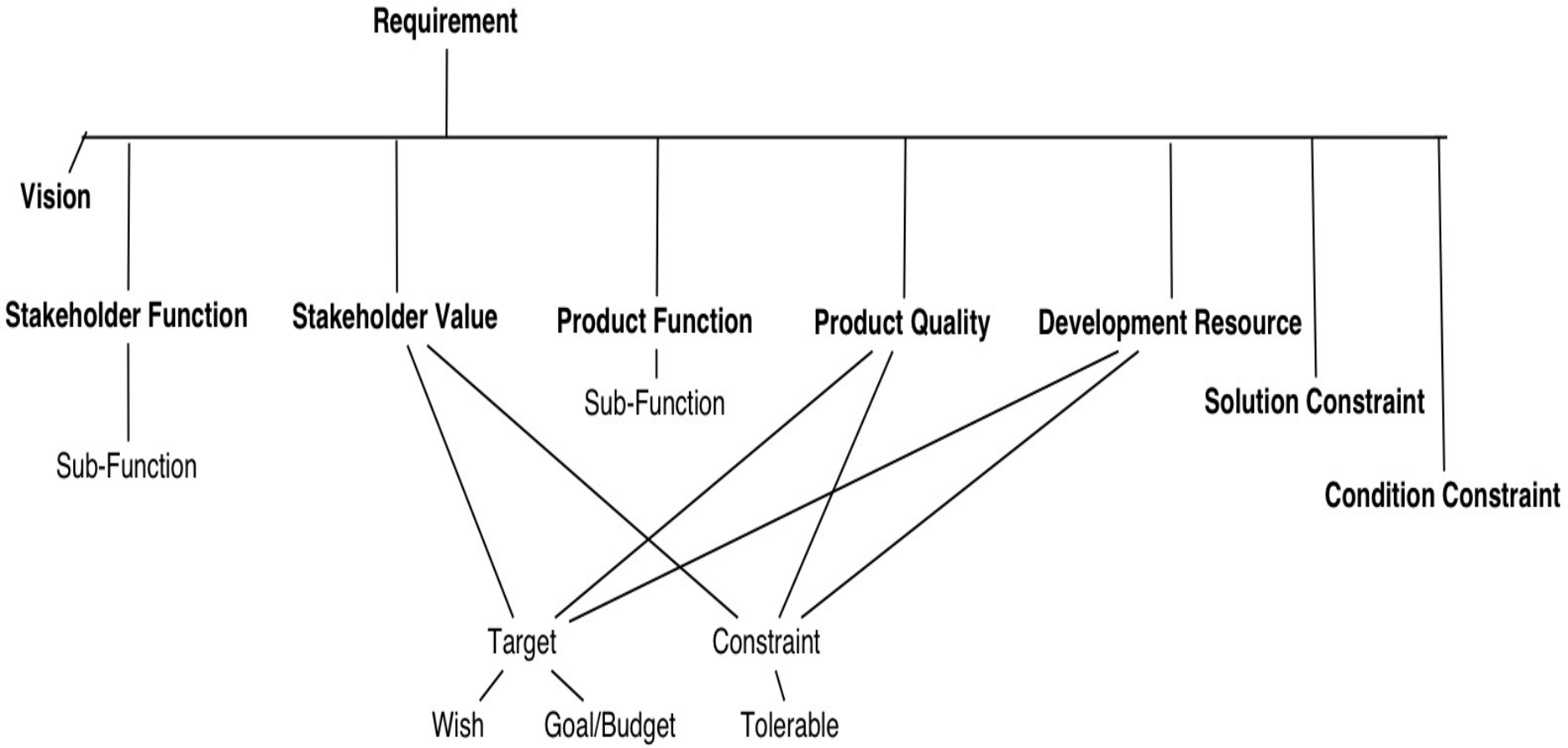


Stakeholder and Product Requirements Distinction



Courtesy Kai Gilb, December 22 2003.
From His book manuscript "Evo" at www,gilb.com

Specify Functions separately

(to increase focus on quality)

Product Qualities, Stakeholder Values, Solutions (Designs), Work Processes etc.

Need to be specified separately from

Function and Sub-Function specifications.

Because:

it helps us *focus* on designing the competitive quality and cost aspects of our product.

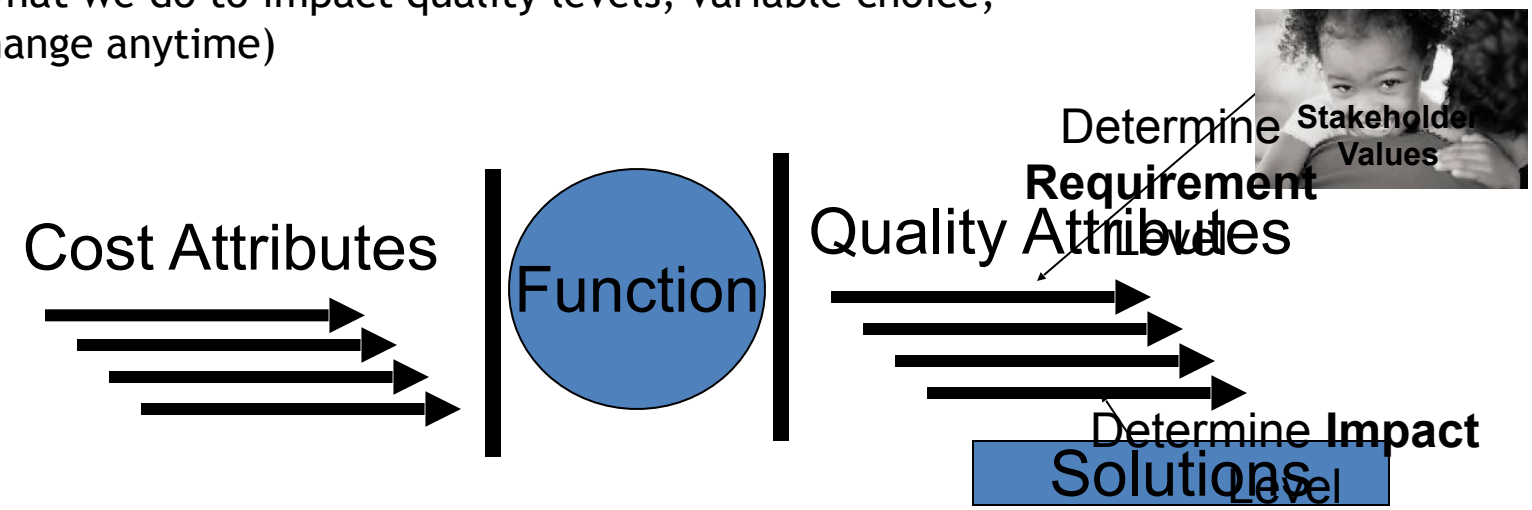
We can *more clearly see* the distinction between

function

(what we do in our business, fixed need) and

'design' (solutions)

(what we do to impact quality levels, variable choice, change anytime)



Stakeholder: Concept *233 .

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Stakeholder Interests

For example they might have an interest in

1. *Setting the objectives for a process.*
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Stakeholders

- Why you have to identify them formally
- How to find out and confirm their requirements
- Example of classes of stakeholders
- How to specify stakeholders together with their requirements.

will be a tribute to her."

New £6m flats to be bulldozed

A NEW £6 million block of flats is to be torn down within weeks because it is five metres too close to nearby homes.

Residents complained that the 33 flats — built by Fairview New Homes in Elsinore Gardens, Cricklewood, and on sale for between £160,000 and £200,000 — breached planning rules and now a government inspector has ruled in their favour.

Deep sea yields

Stakeholder Rules

1. When should you decompose a generic stakeholder to more-specific stakeholders?
    1. When the decomposition yields unique requirements
    2. If in doubt, try it out
2. Any system interface is a potential stakeholder
    1. They will have requirements for the interface
3. Corporate specialist groups, like ‘Security’ are usually a stakeholder
    1. Assuming they can impact any requirements

Fred Brooks, Jr. on Stakeholder specs

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The Mythical Man-Month,
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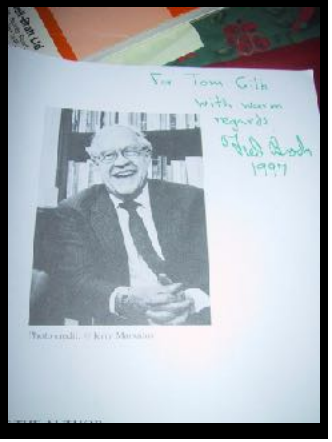

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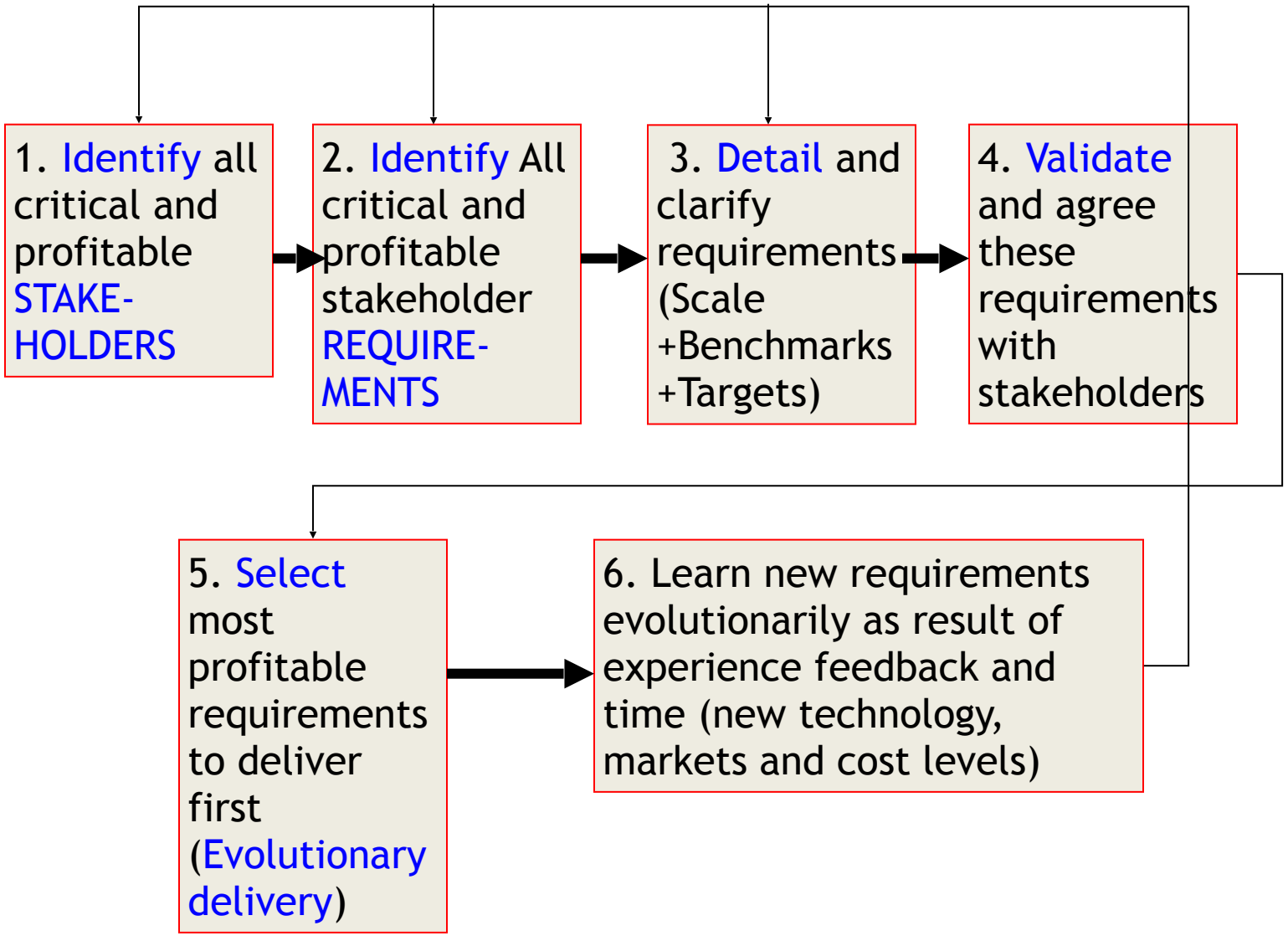


Stakeholders: Example of classes of stakeholders;

Example from real customer requirements definition about 1997, USAintelli

- Government FCC
- Telecompany Corporate
- DEVELOPER
- MANUFACTURER
  - See detail next slide of probable values/ requirements
- OPERATOR (like AT&T)
- DISTRIBUTION

- **LEASING/PURCHASE**
- **PHONE USER:**
- **System Owner (in office)**
- **MAINTENANCE: Employees of system owner**
- **Responsible Site Administrators**
- **Responsible Installers**
- **Repair Centers**

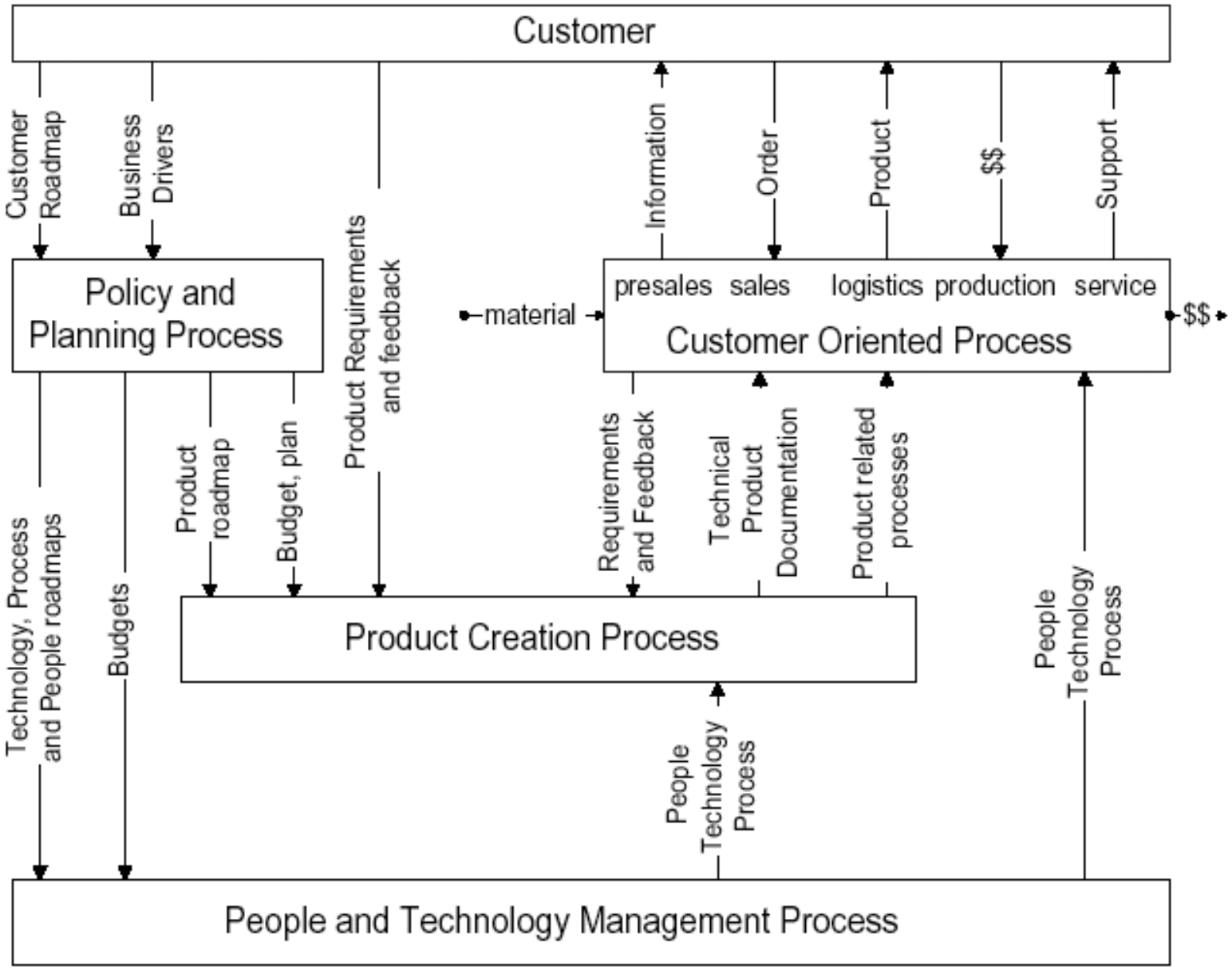
Go to Stakeholder Exercise

Stakeholders:
How to specify stakeholders
together with their requirements.

- The Planguage parameter term 'Stakeholder' can be used to specify one or more stakeholders explicitly.
  - Internal Interests: Stakeholder = {End User, Help Desk, Installer}
- We can attach stakeholder information to any elementary specification,
  - Usability: Scale: Time to learn a task for a defined [Stakeholder]
  - Goal [Stakeholder = Novice User] 10 minutes.
  - Novice User: Defined As: anyone without any training in this system or task.
- or to a set of specifications,
  - Scale [Installers] time for successful installation
  - Fail 20 minutes, Goal 10 minutes, Wish 5 minutes.
- as appropriate.

Go to Stakeholder Requirements Exercise

Stakeholders (Philips, Gerrit Muller, 2001)



Stakeholder Artifacts: Zachman zifa.com

Viewpoint

A detailed real example of Quality Specification (Oct 2004, Europe)

Design Effort [Roadbed.Drainage System, Product XX]: 'Approved by Team' 13:59 Tuesday (Day 1)

Ambition Level: 10X "at least 10 times less engineering effort than now"

Administration:

Approved: by Team' 13:59 Tuesday (Day 1) ok to progress to strategy phase.
Type: Product Quality [Product XX].
Version: 12 Oct 2004 10:12, 11:38
Owner: Idar

Stakeholders: Senior Road Designers, Road Designers, Drainage System Designers, Contractors.

Scale: Hours of Engineering Effort per 10 km road to Complete Roadbed Description for a defined Ideal Engineering Level: default 100%.

Assumption: the level of qualities is the same for comparative measurements. E g we do not save time, only to turn around and use it to increase quality. We still saved time for the old quality level. <-TG

--- Benchmarks------- Analysis---------

Past [VXX Our Infrastructure Design, Finland] ??? <-IK
Bad: Past [IEL = 20%? "<wrong mass calculations & drawings, absence of stakeout data>", 2004, Project = <general guess IK>] <30> ±10 hours/10km <- SWAG IK
○
Good: Past [IEL = 90%? "<better mass calculations & drawings, some stakeout data>", 2004, Project = <general guess IK>, Excel & our product, Swedish Users] <80> ±20 hours/10km <- SWAG IK
○
Trend [Our Product XX] <customers are more demanding, 20% is no longer a good enough level>. <- Heidi
○
○ Record [InXXX, 2004] <better than us in design, high Engineering Level, more consistent but not redesign> <-IK "our system is clearly worse here than the competitor – so we must improve"

--- Constraints-------- Requirement-----

Tolerate [End 2005, Road Designers, ….] Past – 25% of hours
Rationale: least powerful sales argument for selling new version.
Survival [Anytime,] <today's level or better>
Rationale: we could lose customers to competitors.

--- Targets ---------- Requirement ----------

G1. Goal [IEL = 90%?, 2005 Q4, Norwegian & English] <8> ±2 hours/10 km <- Heidi, Berit, Inge
G2. Goal [IEL = 90%?, 2006 Q1, Swedish] <8> ±2 hours/10 km <- Heidi, Berit, Inge

--- Evolutionary Goals----------

○
Short Term 1: Goal [End November 2004, Stakeholder = {SVV, Road Designers}] Past -20%?
Short Term 2: Goal [End 2004] Past -40%?
○ Goal [End January 2005] Past -50%?
○ Goal [End Feb 2005] Past -60%?
○ Goal [End Mar 2005] Past -70%?
○ Goal [End Dec 2005] Past – 90% =Long Term
○
○ *Note: we lack clarity in Stakeholder to be served at each step. This decides some things to be included such as which reports and export formats are necessary. <-TG 13 oct 04 10:53*
○ ---------- Long Term Goals
Long Term: Goal [End 2005] > Past/10
Stretch[End 2006?] Past/20
Wish <wish from stakeholder> >Past/100 ??
○

--- Background ----------

○ Impacts Stakeholder Values: Model

○

GLOSSARY----------

Hours of Engineering Effort: net, actually applied to the task hours.

Complete: {all considerations taken, engineering quality controlled, contractor approved, to a defined % level of IEL}

Roadbed Description: defined as: {cross-section drawings, mass calculation, Geometrical Description: {existing terrain, related water and sewer, other roads, tunnel}, geometrical control}.

<Ideal> Engineering Level: IEL: defined as: doing all tasks to an ideal level of completion. This is often compromised intentionally to save engineering effort and time. <table to define % must be developed, or at least classify things>

Meter: <how to measure this in practice>

Design: defined as: design and redesign

Performance & Budget Targets
Definitions ----@----->

Target: Concept *048. November 8, 2001

A target is a stakeholder-valued positive requirement you are aiming at; hoping to deliver, at, near, or better.

A target is not a constraint, with its intent to restrict and avoid.

Target concepts include {Goal, Stretch, Wish, Ideal}.

A target requirement is like the scoring surfaces of a circular archery or darts target. The outer edge of this target is a constraint, not a target.

Performance & Budget Targets
Additional, useful, description parameters; Definitions

Wish: Concept *244 6 August 2002

A Wish parameter specifies a stakeholder need, without considering its cost or practicality.

A Wish goal, or wish budget, is a non-committed stakeholder-need scalar attribute level. It is requirement background, but it is not yet a Planned Goal.

Rationale:

Wish allows us to note stakeholder desires and needs in a requirement area, without actually committing to delivery. If we did not have a wish parameter to articulate these needs, then the information might never be collected, and maintained and we would lose the competitive advantage of knowing what our stakeholders desire – even when the resources or technology ultimately permit us to commit to delivery of the wish level or something nearer to it than was planned in the goal statements.

'Wish' allows us to express our values, without getting committed prematurely.

We can allow a stakeholder to tell us their dreams. But we don't have to promise to deliver them until we know the price tag.

A Wish goal has no budget, so is not recognized as technically or economically feasible yet. It is stated so designers have an idea of what someone is dreaming of.

[Qualifier, Stakeholder]

Specify the Stakeholder to which this parameter applies. There are two categories of Stakeholder normally used, Internal and Stakeholder

Internal:

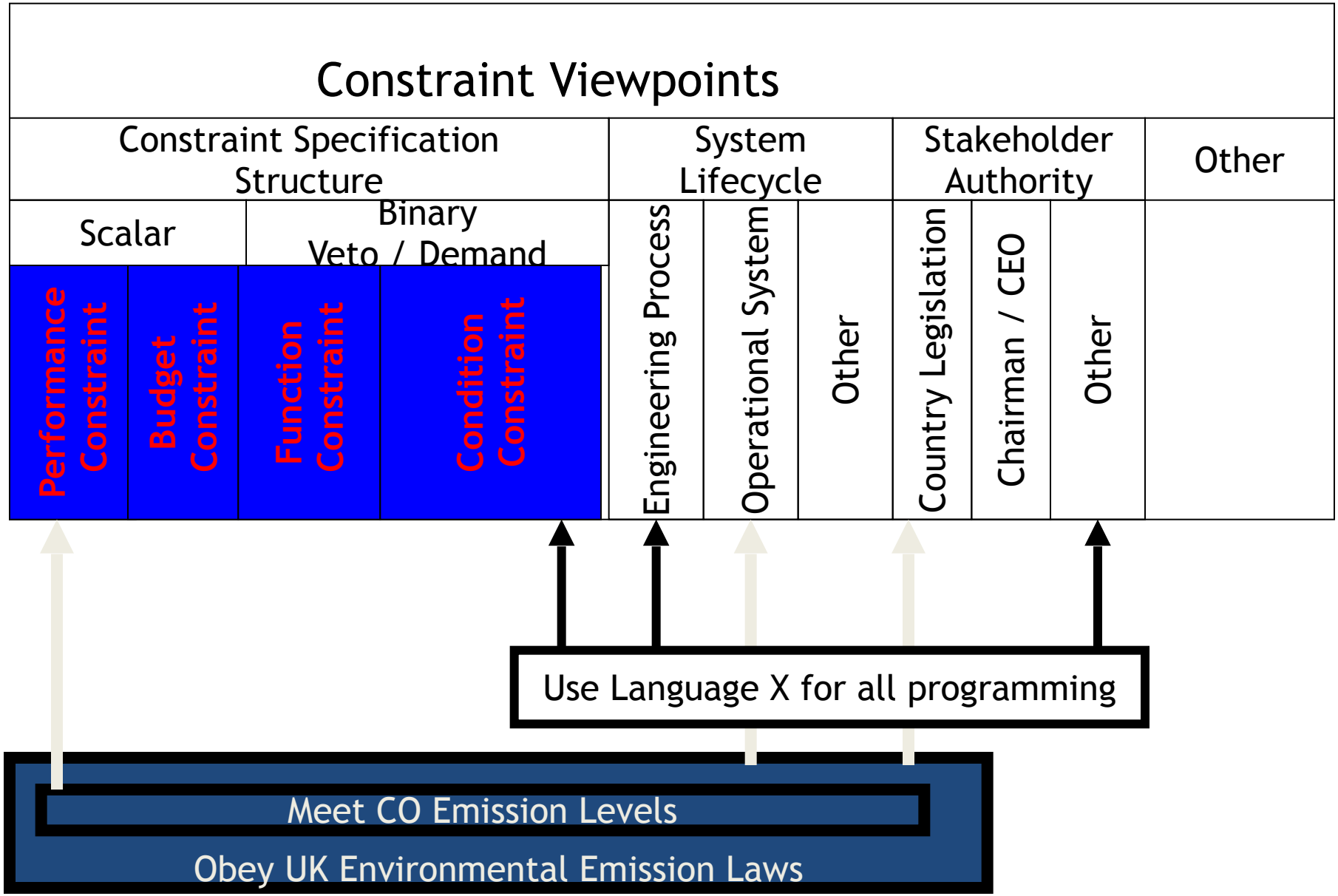
GOAL **[Internal]** 5 min

When a level is an internal level, write 'Internal' in the [qualifier]. This will allow you to express GOAL levels that are different than what is contracted, or those your Stakeholders require.

Stakeholder:

GOAL **[End-User]** 6 min

If the requirement apples to a specific Stakeholder, write down that Stakeholder in the [Qualifier]



Note: Denotes a Planguage Type. 'Constraint' and qualifiers can be used to specify the other classifications.

Related Design concepts

A design *specification* (**586)* is a deliberately selected and documented means to reach defined 'ends'. It is a written proposal (*587) and articulation of a design idea.

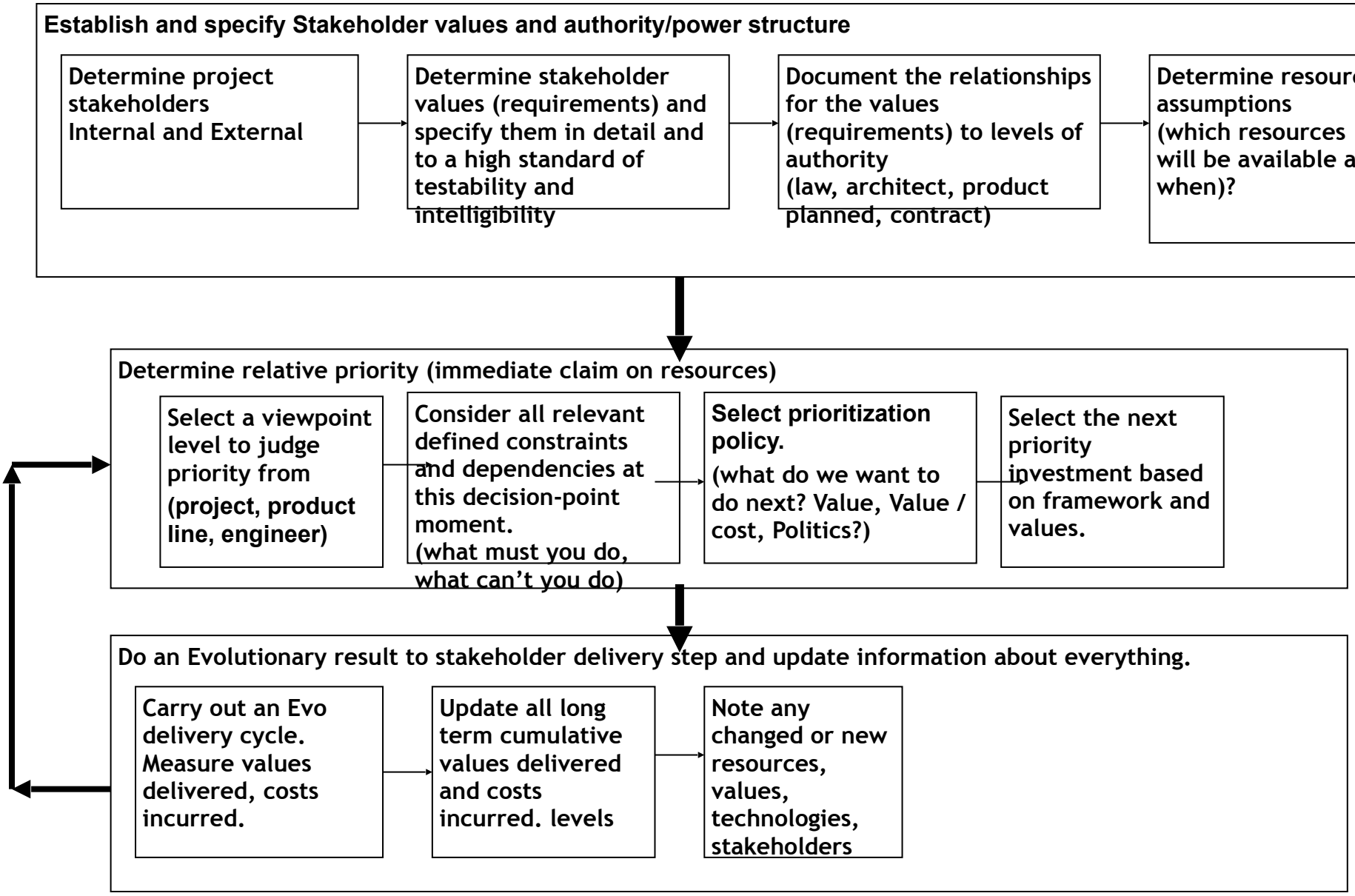
A proposed design idea must be consistent with a related *set* of requirements; with all those requirements *at once*. 'Consistent' means it must help at least one single requirement towards specified states, without violating any constraint (function, condition constraint, scalar constraint).

A design is different from a requirement in that its proposal, or specification, can, in principle, be changed at any time for a better design, which better meets the requirements, without asking the opinion of the **stakeholder** (who set the requirement it is serving). Design is not holy and fixed. Requirements are inputs to the design process, design ideas are the output.

Alternative designs(*588) will have satisfactory, but *different*, performance and cost attributes. The alternative design idea attributes will be so significant that they do not need any *other* alternative design ideas in addition, or cannot afford it. *Supplementary* designs (*589) are needed to move the set of towards the design Goal levels, other target levels or towards meeting other requirements (constraints, functions).

A satisfactory design can have negative performance impacts and still be acceptable overall, as long as those negative side effects do not prevent us from reaching the Goal level of the attribute negatively impacted.

Priority Determination Process



Process: Requirement Specification. <-CE 2

Tag: Process.RS. Version: 6 July-2001. Owner: TG. Status: Draft.

Procedure

P1: Define the system scope and the overall scope of the requirements.

P2: Identify relevant (critical and profitable) stakeholders.

P3: Determine the requirements of each type of stakeholder. Ensure all specification statements are sources referenced.

P4: Categorize requirements by type (The major requirement types are function, performance, cost and constraint).

P5: *('Stakeholder Value')* Specify *Functional Requirements* (Process.FR. See Chapter 3).

P6: *('Stakeholder Value')* Specify *Quality Requirements* (Process.QR. See Chapter 4) including identifying or creating a *Scale Definition* (Process.SD. See Chapter 5).

Specify other Performance requirements (Capacity and Savings) in a similar manner.

P7: *('Stakeholder Constraint')* Specify *Cost Requirements* (Process CR. See Chapter 6).

P8: *('Stakeholder Constraint')* Identify and question any constraints. (Are they real or was something else intended?) Specify the necessary *Constraints* (Process CT. See Ch. 6).

P9: Specify all known significant relationships of the requirements to any other relevant requirements specifications (external or internal to the system). *You need to identify where there may be overlap or conflict or double accounting over benefits. There may even be synergy or a chance to 'subcontract' parts of the system development.*

Use Planguage terms such as {Source, Depends, Assumption, Authority, Impacts, Risk, Impacted By}.

P10: Get stakeholders to approve written requirements' specifications that specifically affect them.

P11: Carry out quality control on the requirement specifications. At least, analyze them by sampling. Using Specification Quality Control (SQC), they can exit at an appropriate low level of remaining major defects/page (such as a maximum of 1 major defects/page).

Note: this is an appropriate point in this procedure to carry out quality control. However, don't let this prevent you from carrying out quality control at other times. Far better you find out that there is a problem after writing three pages than after thirty pages.

Note: For the majority of the procedures in this book, the exit and entry conditions serve to remind you about the need for quality control: explicit reference to quality control within the main procedure is omitted.

P12: Once the requirements have exited quality control, review them with the aim of obtaining the relevant management approval. *(SQC checks the specification quality, 'review' checks the business relevance.)*

Entry Conditions

E1: Generic Entry Conditions apply. The specification quality control (SQC) entry condition applies to any source information, such as contracts and marketing plans.

E2: Key stakeholders are available for questions and reviews to resolve any uncertainty about sources and exact specification.

Exit Conditions

X1: Generic Exit Conditions apply. The requirement specification must have exited SQC.

X2: There is management *review* approval of the requirement specification.

1. Exercise in specifying Stakeholders

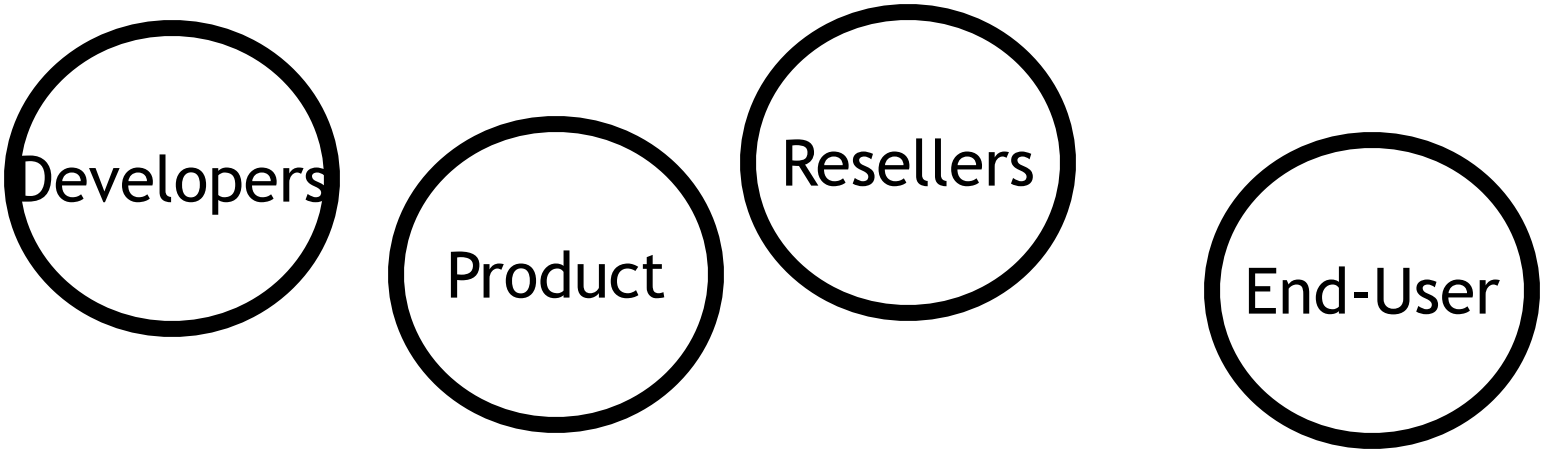
As a Team:

Use 2.5 minutes to discuss the project in general, share ideas.

List all Stakeholders with an interest in your project. (10 internal) 10 External) (5 very external):

20 minutes:

Give each stakeholder a name and draw circles around their names



1. Exercise in specifying a requirement
10 minutes each point (1.1 etc.)

As a team: (5 MINUTES?)

1.1 Name 4 critical Requirements for each Stakeholder. Draw Quality Arrows

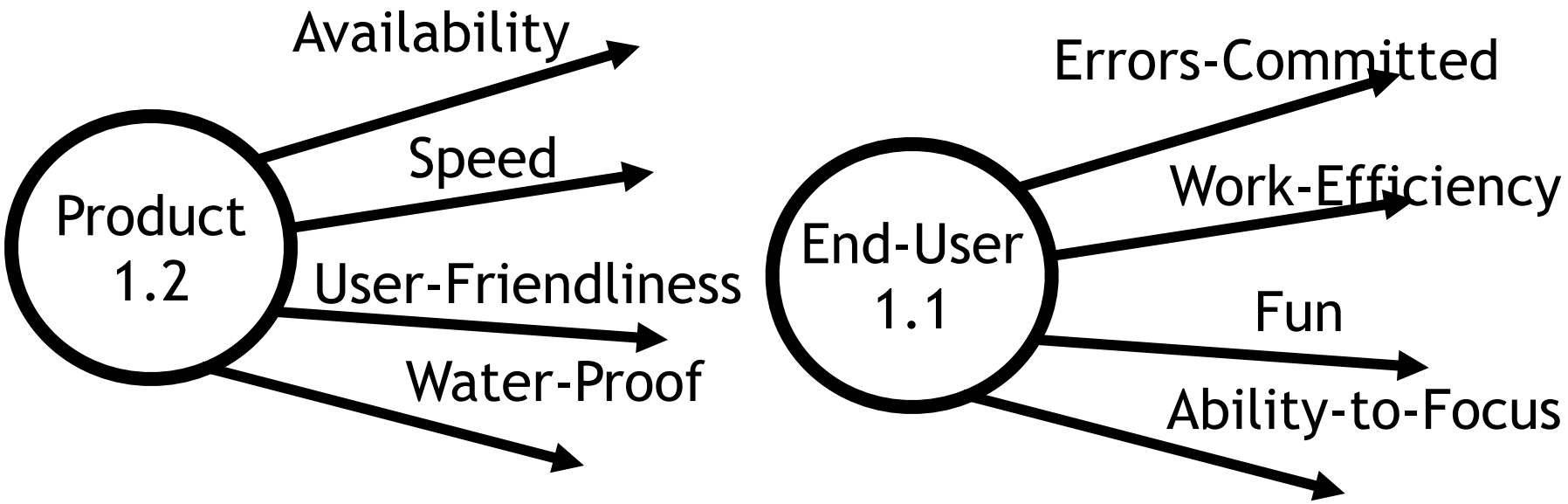
1.2 Name 4 critical Quality attributes for the Product. Draw Quality Arrows

Each team member: (5 MINUTES?)

1.3 Either: Detail at least one important Requirement for each Stakeholder

Or: 1.4 Detail at least one important Requirement for the Product

1.5 Each team member explains their effort to the others. (5 min.)

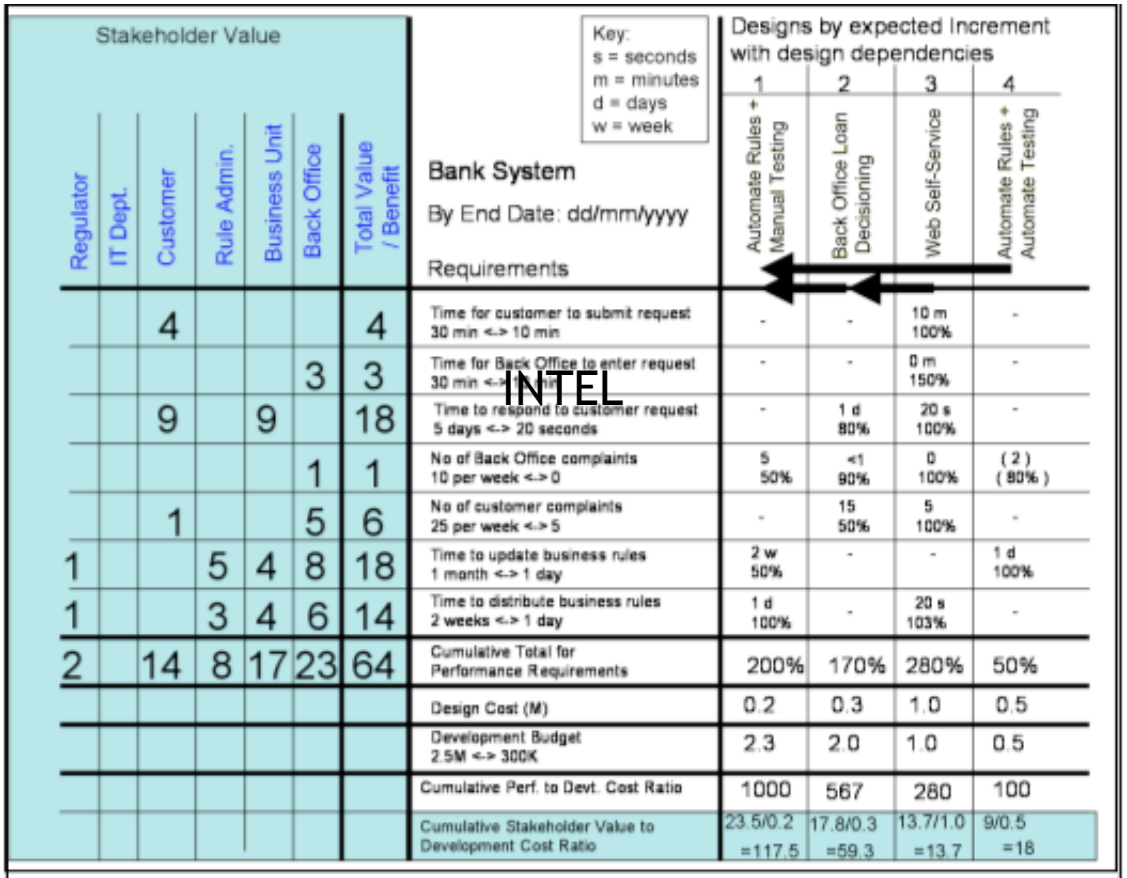


Quiz 1 Monday: Terms and Concepts

1. What is the distinction between a term and a concept?
2. How is a function different from a design?
3. How is a target different from a constraint?
4. What is the distinction between a scalar constraint and a binary constraint?
5. Distinguish between resource and cost.
6. Distinguish between Performance, Quality, Quantity, Capacity and Savings.
7. What is the difference between a Survival and a Fail constraint?
8. What is the difference between targets Ideal, Wish, Goal, Stretch?

9. Which 'types' of stakeholders should you identify and cater to?
10. What if a stakeholder has a requirement but it is technically or economically impossible for you to deliver?
11. Why is the distinction between internal and external stakeholders useful?
12. Distinguish: Scale, Meter..
13. Distinguish between Parameters: Risk, Impacts, Impacted By, Assumption.
14. Distinguish between Parameters : Authority, Owner, Source (A <- B) .

Stakeholder Impact Estimation: Brodie



Stakeholder Value							Bank System By End Date: dd/mm/yyyy Requirements	Designs by expected Increment with design dependencies			
Regulator	IT Dept.	Customer	Rule Admin.	Business Unit	Back Office	Total Value / Benefit		1 Automate Rules + Manual Testing	2 Back Office Loan Decisioning	3 Web Self-Service	4 Automate Rules + Automate Testing
		4				4	Time for customer to submit request 30 min <-> 10 min	-	-	10 m 100%	-
					3	3	Time for Back Office to enter request 30 min <-> 0 min	-	-	0 m 150%	-
		9		9		18	Time to respond to customer request 5 days <-> 20 seconds	-	1 d 80%	20 s 100%	-
					1	1	No of Back Office complaints 10 per week <-> 0	5 50%	<1 90%	0 100%	(2) (80%)
		1			5	6	No of customer complaints 25 per week <-> 5	-	15 50%	5 100%	-
1			5	4	8	18	Time to update business rules 1 month <-> 1 day	2 w 50%	-	-	1 d 100%
1			3	4	6	14	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

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

INTEL

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

Stakeholders and Owners of Requirements (edited by tom g mar 7)

- A **Stakeholder** is an individual or group who has an 'interest' (Direct or indirect) in a requirement.

- An **Owner** of a requirement is
  - the person or group who sets the official requirement specification TG
  - The stakeholder who decides that a requirement must be implemented. STAKEHOLDERS DO NOT DECIDE THAT A REQUIREMENT MUST BE IMPLEMENTED. THEY MAY NOT EVEN BE AWARE THAT IT IS BEING DEALT WITH TG

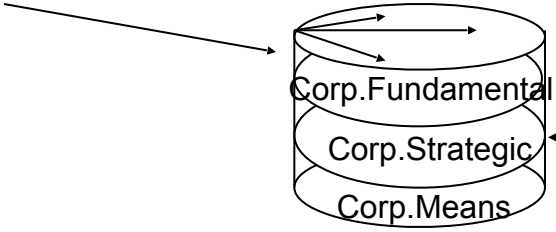
- A **Designer**
  - Suggests designs for implementing a requirement; usually in the context of identifying designs which satisfy many requirements simultaneously. TG
  - WHO decides how a requirement will be implemented.
    - The Project manager and management review committees make the final decision on the suggested designs. TG

Levels of Objectives / Requirements and Design

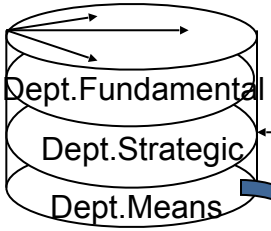
(excellent I have added w credit SP to my rqt slides tg/

Market Trends & Demands

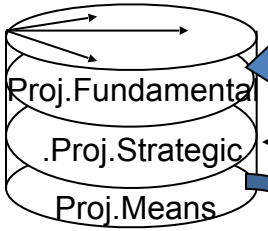
The number of organizational requirements layers can differ per organization



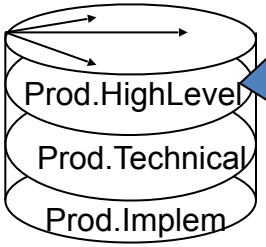
Corporate Level
Objectives



Departmental Level
Objectives



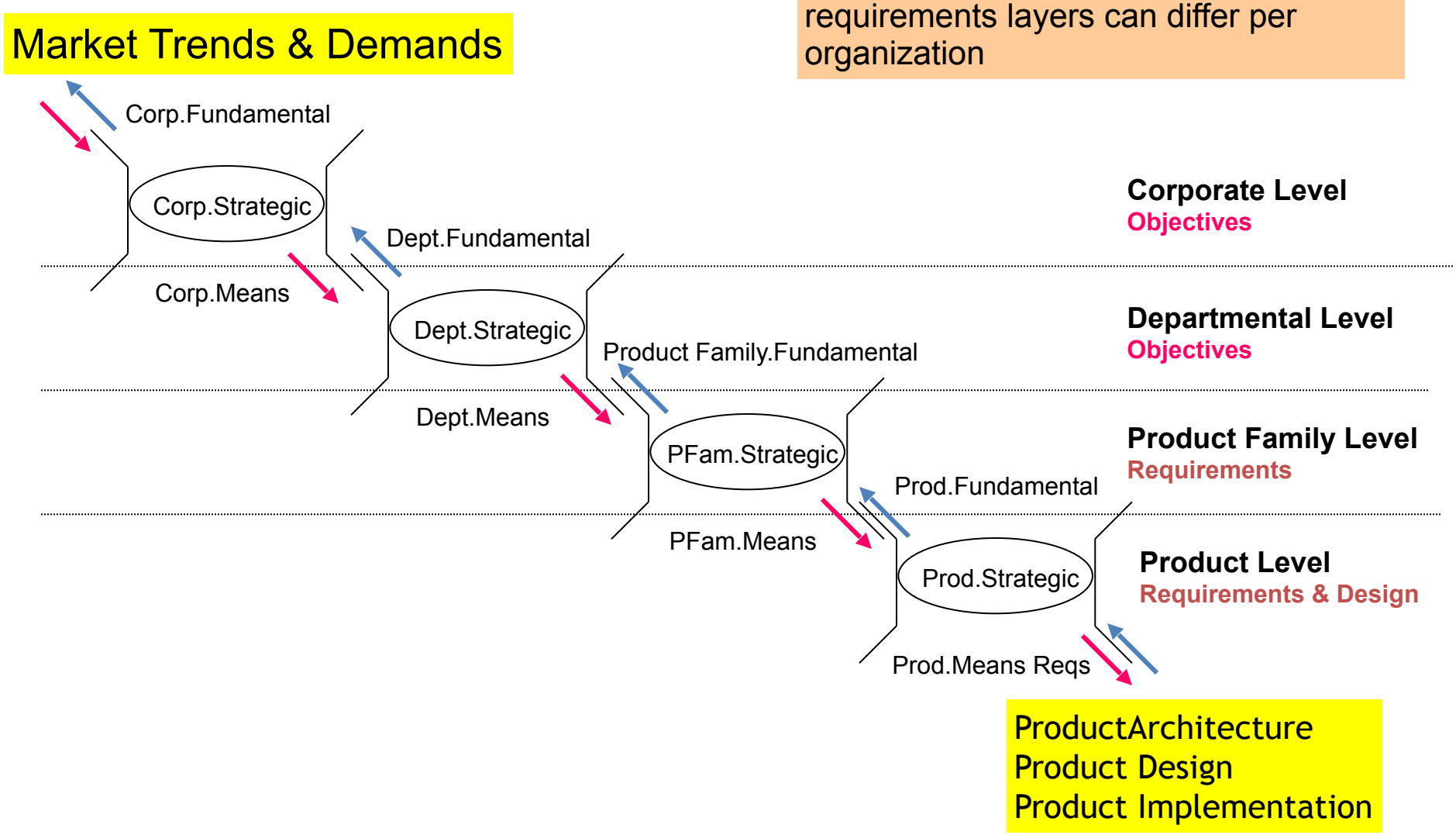
Project Level
Requirements



Product Level
Design

Levels of Objectives / Requirements and Design

The number of organizational requirements layers can differ per organization



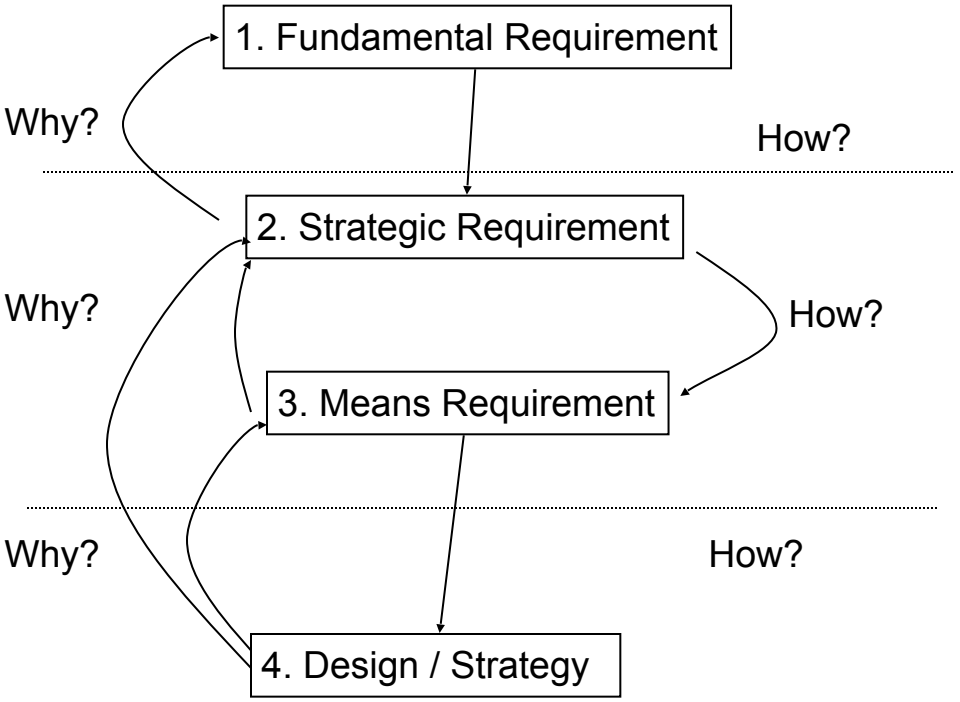
Requirements and Design Hierarchies

Fundamental Requirement/objective:
•A requirement that is requested or imposed by a higher level (priority) requirement owner.

Strategic Requirement/objective:
•A requirement of which the currently considered management level is the owner.
•A strategic requirement contributes to one-or-more Fundamental (higher priority) requirements.

Means Requirement/objective:
•A requirement of which, from the point of view of the Strategic Requirement Owner, is solely justified by its assumed contribution to their Strategic Requirements.
•A means requirement must intend to contribute to one or more strategic requirements.

Design:
•A design is a (partial) solution for one or more requirements,
•All levels of requirements can be viewed by some point of view as a 'design' for some other requirements.
•"One man's requirement is another man's design"



The requirements hierarchy helps to bring order in the decision making process over requirements

1. Procedure: Establish the project's initial lists of Fundamental, Strategic and Means Requirements at the Departmental (Organizational) Level

1. Establish the project's stakeholder list from the organizational stakeholder list. Identify or specify project and product stakeholders which are not derivable from the organizational list.

2. Establish three initially empty lists with fundamental, strategic and means requirements at the departmental level for the project.

3. Analyze the approved list of Generic Strategic Product and Organizational Quality Attributes and select the most important quality attributes for the project. Declare these as the initial **Dept.Strategic** requirements for the project. Identify or make more specific any quality attributes which are not directly derivable from the approved list.

4. All other generic product- and organizational quality attributes become the intial **Dept.Means** requirements.
   This applies only if they arguably exist in order to serve "precedent" (priority) requirements.

   Attributes that,
   cannot be justified by their contribution to precedent requirements
   are not to be included in the general Dept.Means requirements.

2. Procedure: Analyze the Project's Incoming Signals and Map them to Means, Strategic and Fundamental Requirements

For each incoming signal:

1. Is this incoming signal a mixture of requirements and design?
   If so, rewrite the signal, so that "the requirement part and design are clearly distinguished. **The requirement part is 'what the stakeholder really values'. The design part is our best current idea of how to deliver that value: subject to improvement"**
4. Determine the requirement-type of the incoming signal: Pure Function, Pure Quality, Pure **Resource** Constraint, **Global** Constraint, Pure Design, or a mix of all of these?
   Specify the requirement-type combination.
2. Ask yourself: "Who are the stakeholders for this incoming signal", and specify who says so (source). Both ;authority' (which stakeholder) and information reference (document, web reference) are desired.
3. In order to find the fundamental requirement for this incoming signal, ask a number of times the question "WHY does the stakeholder want this incoming signal / requirement?".
   - At what level in a defined organization (us , customer, supplier) does the stakeholder reside for this requirement (who imposes this requirement)?
   - Specify the owner of the incoming signal (who can change it?).
   - Is the fundamental requirement of the signal <More Fundamental> than the current list of Dept.Strategic requirements?
     - If so, add the fundamental requirement to the list of Dept.Fundamental requirements.
     - If not, add a reference to the best mapping Dept.Strategic and Dept. Means requirements that the incoming signal contributes to.

More Fundamental: Defined As: of higher priority. Has to be respected before another defined one.

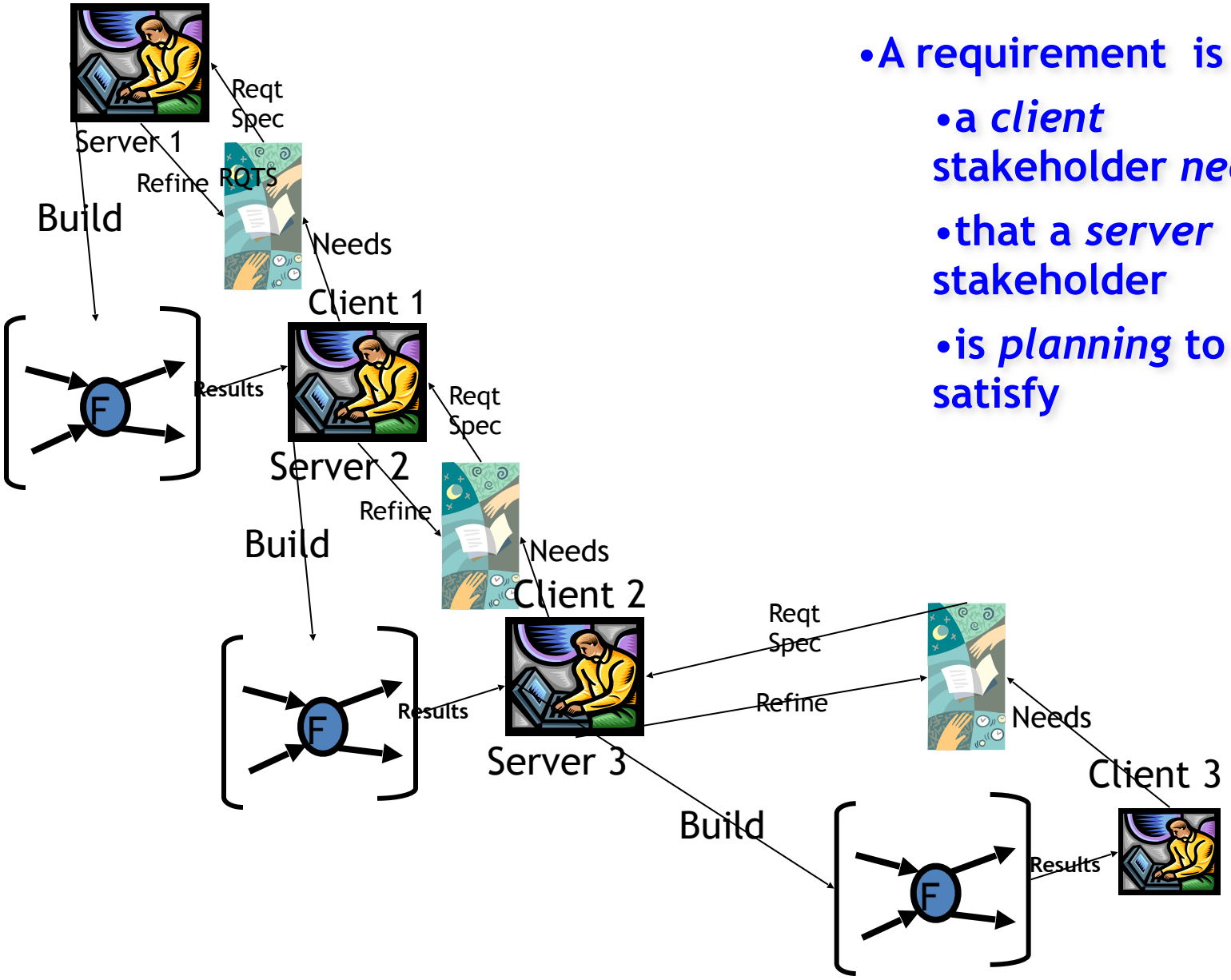
Requirement Concept *026 May 21st 2005 14:39

- A requirement is
  - a *client* stakeholder *need*
  - that a *server* stakeholder
  - is *planning* to satisfy

Note I later simplified the *026 definition to
Requirement **Concept *026 January 23rd 2008 (+ "value")**

A 'requirement' is a
stakeholder-prioritized future state.

Requirement Stakeholder Levels



- A requirement is
  - a *client* stakeholder *need*
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  - is *planning* to satisfy

Stakeholders and Requirements

- A Stakeholder is anybody with a stake in what we are working on
- Customer, user, ... up to ourselves
- Every project has about 30 (±20) Stakeholders
- The set of Stakeholders doesn't change much

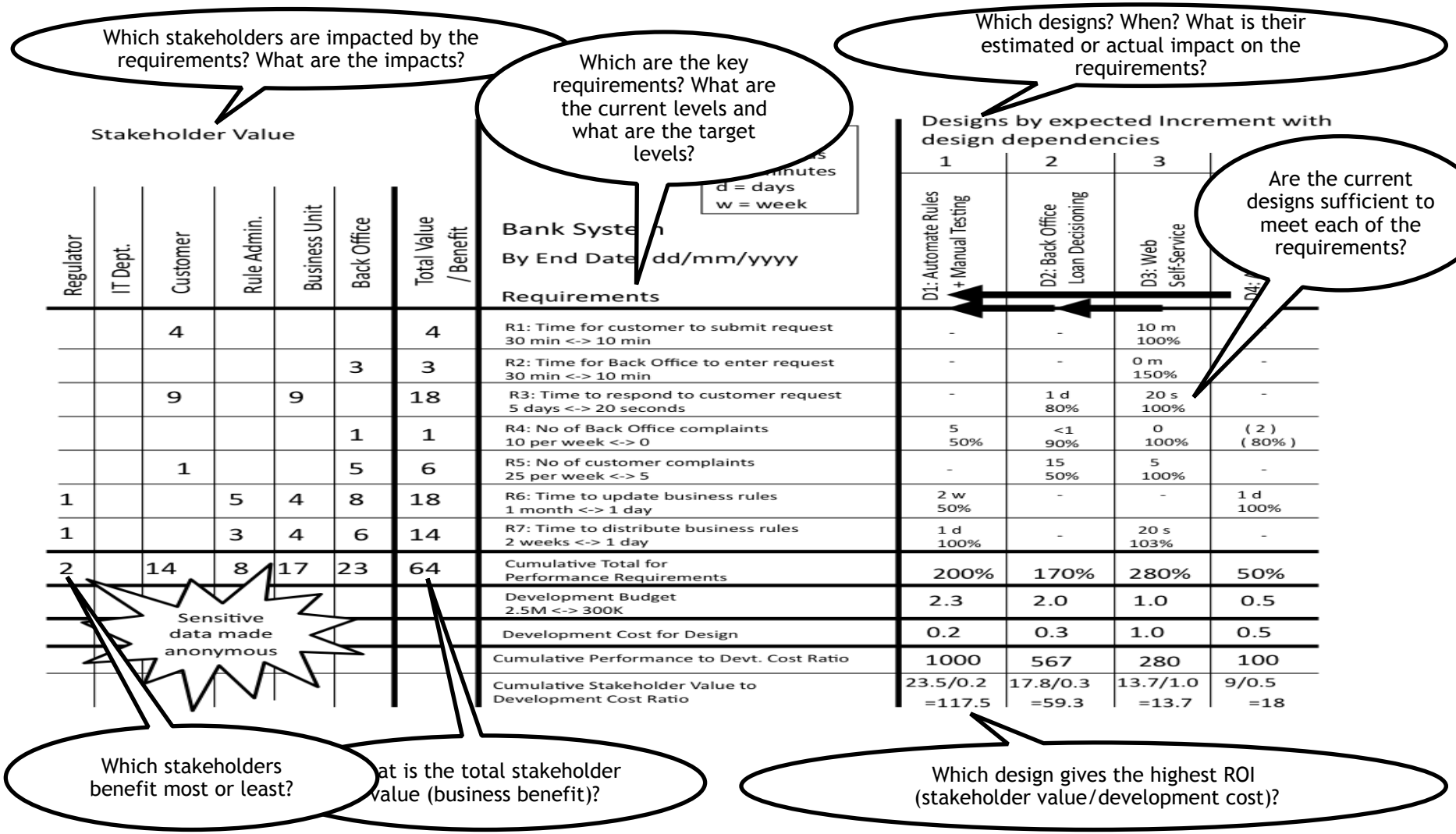
- *Requirements* are what the Stakeholders require

but for a project ...

- Requirements are the set of stakeholder needs that a project is planning to satisfy

No Stakeholder?

- No Stakeholder: no requirements
- No requirements: nothing to do
- No requirements: nothing to test
- If you find a requirement without a Stakeholder:
  - Either the requirement isn't a requirement
  - Or, you haven't determined the Stakeholder yet
- If you don't know the Stakeholder:
  - Who's going to pay you for your work?
  - How do you know that you are doing the right thing?
  - When are you ready?



Regulator	IT Dept.	Customer	Rule Admin.	Business Unit	Back Office	Total Value / Benefit	Requirements	D1: Automate Rules + Manual Testing	D2: Back Office Loan Decisioning	D3: Web Self-Service	D4:
		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%
							Development Budget 2.5M <-> 300K	2.3	2.0	1.0	0.5
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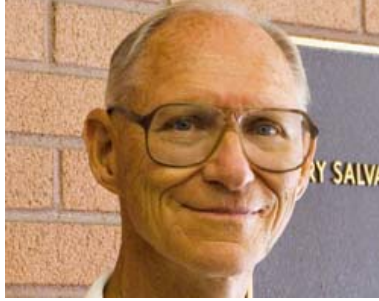
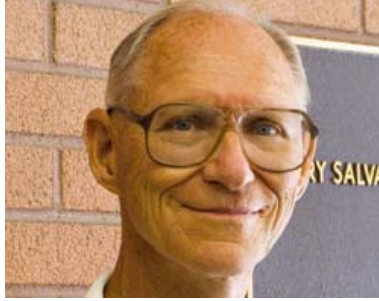
Boehm's Stakeholder Categories (still missing inanimate stakeholders)



- Boehm has identified extensions to simplistic stakeholder concepts, that recognize that not all stakeholders are simply 'users' of a technical solution. He has proposed four broad categorizations of stakeholders from a project manager's point of view:
- Users: who usually want lots of functions out of a fast, reliable technical solution
- Bosses: who not only set ambitious goals, but want 'no surpris-es' along the way
- Subordinates: who want technical advancement, neat designs, and who may not directly see the benefit of controls and transparency
- Maintainers: who will inherit the technical solution and who want it bug-free and well-documented
- Customers: those in a different division or organization wh commissioned the system.

B.W. Boehm 1989

3 Stakeholder Steps



Research sponsored by the US Defense Advanced Research Projects Agency (DARPA) identifies three important steps required at the start of each step in the use of iterative methods:

- Identify the stakeholders for the coming iteration
- Identify their win conditions
- Reconcile their win conditions

Over three years 16 projects using an iterative approach incorporated these steps and showed:

- Greater flexibility in adapting to risks and uncertainties
- Better discipline in achieving operational capability
- Enhanced trust between the project stakeholders

Barry Boehm 1994

UK Firecontrol

- The failed UK Firecontrol project was an example where the poor stakehold-er engagement together with a flawed technical solution resulted in project cancel-lation. The stakeholder engagement required on the project was both complex and broad. The aim was for the existing 46 existing local control centers to be re-duced to just 9 regional control rooms. A firm of management consultants had al-ready advised against fast centralization, and had instead recommended a reduc-tion to 21 centers. The changes were regarded with hostility by a broad range of stakeholders, including Chief Fire Officers, the Firefighters Union, the Local Government Association and the Fire Brigade Union.
- When the project was eventually canceled at a cost of £469m, the UK NAO found that a major reason why the project had failed was due to:
- insufficient communication and engagement with stakeholders during the initiation and design of the project which led to concerns about its rationale and purpose from the outset. Fire and Rescue Authorities and their Services criticized the lack of clarity on how a regional approach would increase efficiency. The Local Government Association similarly asserted throughout the planning and delivery of Firecontrol that a cen-trally-dictated, one size fits all model was not an appropriate way to op-timize resilience.
- NAO #206 National Audit Office, citd in , ***Agile Project Management for Government***

Active senior engagement with stakeholders

- Active senior engagement with stakeholders is identified by the GAO as a common critical success factor. In a survey of seven large and successful government IT projects collectively worth $5bn, the GAO found that:
- Officials from all seven (projects) cited active engagement with program stakeholders as a critical factor to the success of those investments … stakeholders regularly attended program management office sponsored meetings; were working members of integrated project teams; and were notified of problems and concerns as soon as possible.
- The GAO found that the use of multi-disciplinary teams and early involvement of users in defining requirements had created transparency and trust and further increased the support from the stakeholders.
- {U.S. Government Accountability Office 21/10/2011 #37: 1} in , Agile Project Management for Government ™

Project failures due to poor stakeholder engagement in US

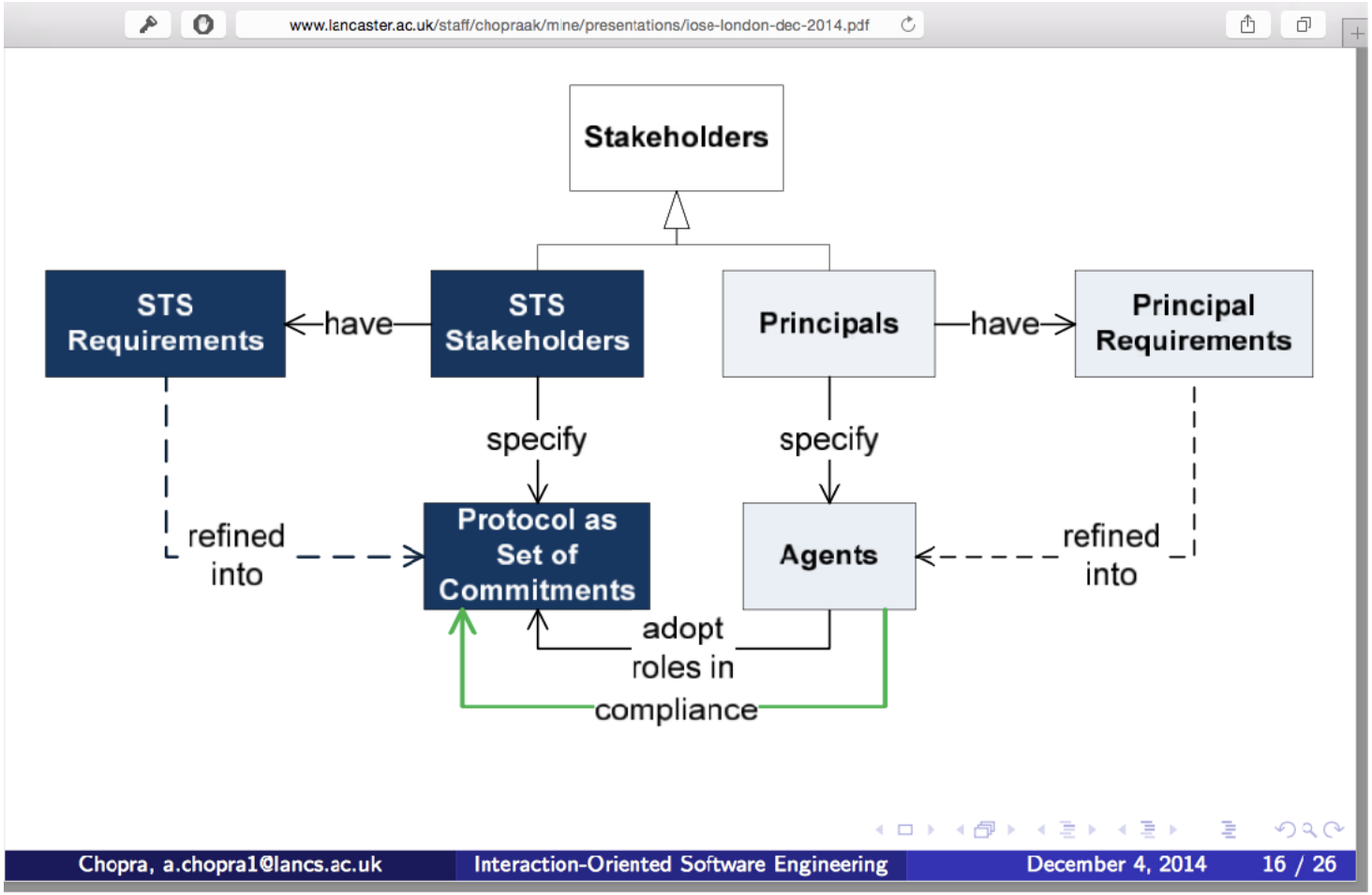
- In contrast to these successful projects, the GAO has **regularly reported on instances of project failures due to poor stakeholder engagement**.
- Examples include:
- The Federal Emergency Management Agency (FEMA),
  - where end users were not sufficiently involved in defining requirements for the National Flood Insurance Program's insurance policy and claims management system.
  - **The program was canceled** in final end-user testing after seven years of development and a budget of $40m, forcing the agency to continue to rely on an outdated 30 year-old system.
- The Department of Homeland Security (DHS)
  - which did not allow sufficient time for stakeholder involvement in its planning and had no consistent method for identifying stakeholder roles and incorporating their feedback.
- The 2010 US Census
  - where lack of local user involvement in software testing hindered local governments' ability to accurately update address lists and maps.
- Sources:
  - {U.S. Government Accountability Office June 2011 #38}
  - {U.S. Government Accountability Office 15/09/2011 #209: 28}
  - {U.S. Government Accountability Office 14/06/2007 #210}
- Kilde: Wernham Agile Project Management for Government, 2012

UK Revenue and Customs 2007-2011

- In contrast, a major project by the UK Revenue and Customs had delivered 4% uptake of salaried employee tax returns over the period 2007-11
- with effective stakeholder engagement applied during a phased implementation of online services.
- Each stakeholder group **was identified and assigned a 'champion' to** act as a single point of contact,
- and consultative groups were set up to liaise with tax agents and industry representatives.
- Customer concerns were researched and face-to-face events were held to help small businesses and individuals understand the new processes.
- Requirements for the new services were prioritized according to stakeholder concerns.
  - For example, as a response to these concerns mandatory filing was delayed, which gave rise to the opportunity to reduce the overall budget of £373m by about 10%.
  - New requirements were proposed and implemented.
  - Example of these were free entry-level software for small businesses, and soft landings of non-mandatory solutions that allowed customers to familiarize them-selves with online filing without fear of penalties.
  - Third-party tax and accounting software developers were also identified as important stakeholders and targeted technical information was sent to them to assist them in developing compatible systems.

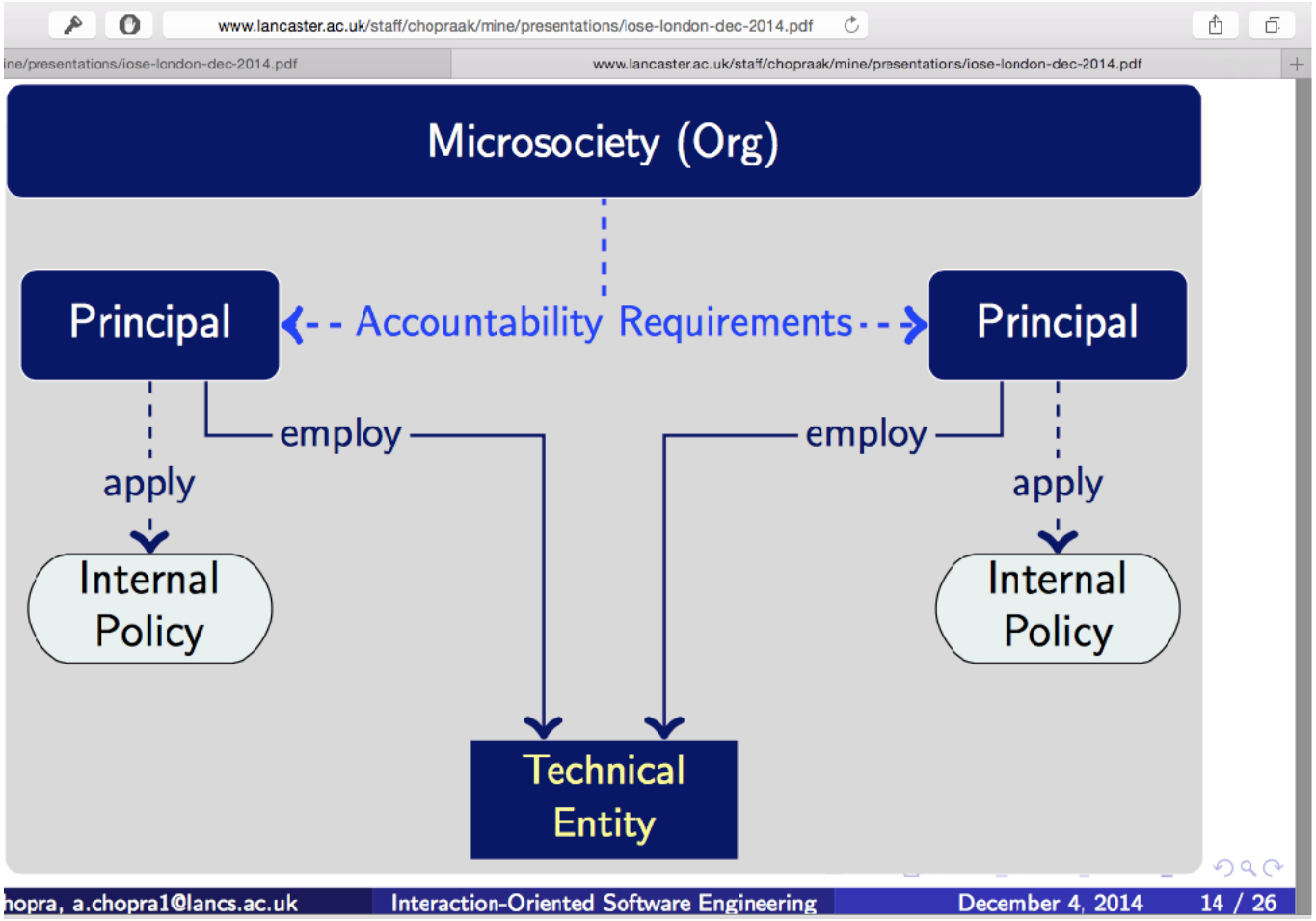
- Source: {UK NAO 09/11/2011 #207} in Wernham Agile Project Management for Government, 2012

Interaction-Oriented Software Engineering
Amit K. Chopra @Lancaster University
STS = Sociotechnical System



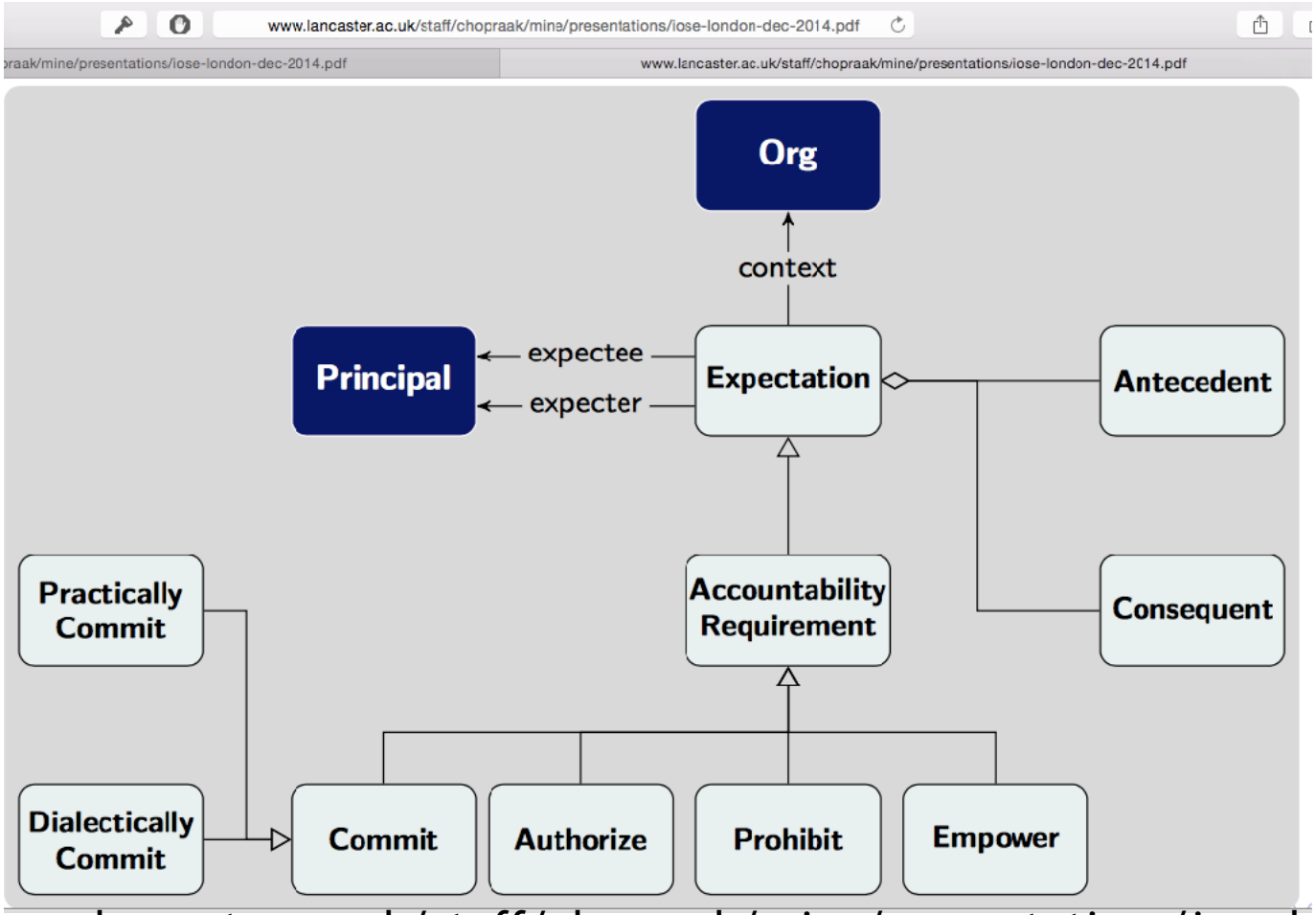
http://www.lancaster.ac.uk/staff/chopraak/mine/presentations/iose-london-dec-2014.pdf

Sociotechnical System



http://www.lancaster.ac.uk/staff/chopraak/mine/presentations/iose-london-dec-2014.pdf

Stakeholder Expectations



http://www.lancaster.ac.uk/staff/chopraak/mine/presentations/iose-london-dec-2014.pdf

MEDICAL STAKEHOLDERS

07bcnbiosciences12-10-21014icorpsnih-141215192510-conversion-gate01.pdf (page 7 of 25)

What we did - Archetypes of Customer & Partners

	Doctors	Pharma Biz Dev	Pharma Prod Dev / Science	Development Partners
				
Archetype	***Pulmonologists*** - patients with post radiation fibrosis - patients with IPF ***Skin Doctors*** - Dermatologists - Plastic Surgeons	***Big Pharma/Biotech*** - Pitched hundreds of times each year - Looking for $1B market molecules - Disease modifying ***Medium Pharma/Biotech*** - Actively engaged in pre-clinical scouting - Interested in supportive care also	***Big & Medium Pharma/ Biotech*** - Conducts pre-clinical MOA studies - Conducts Efficacy & Safety studies - Designs in-human clinical trials and regulatory path - Primary Science/ Regulatory/manuf decision influencers	***CROs*** - Radiation CROs - PK, Tox & Efficacy CROs - Drug Formulations - Drug manufacturing ***Govt. Agencies*** - Development partner - Free resources ***Disease Foundations*** - Basic Research support mandate - Orphan Indications
Interviewees	26	34	18	22

Stakeholder Values

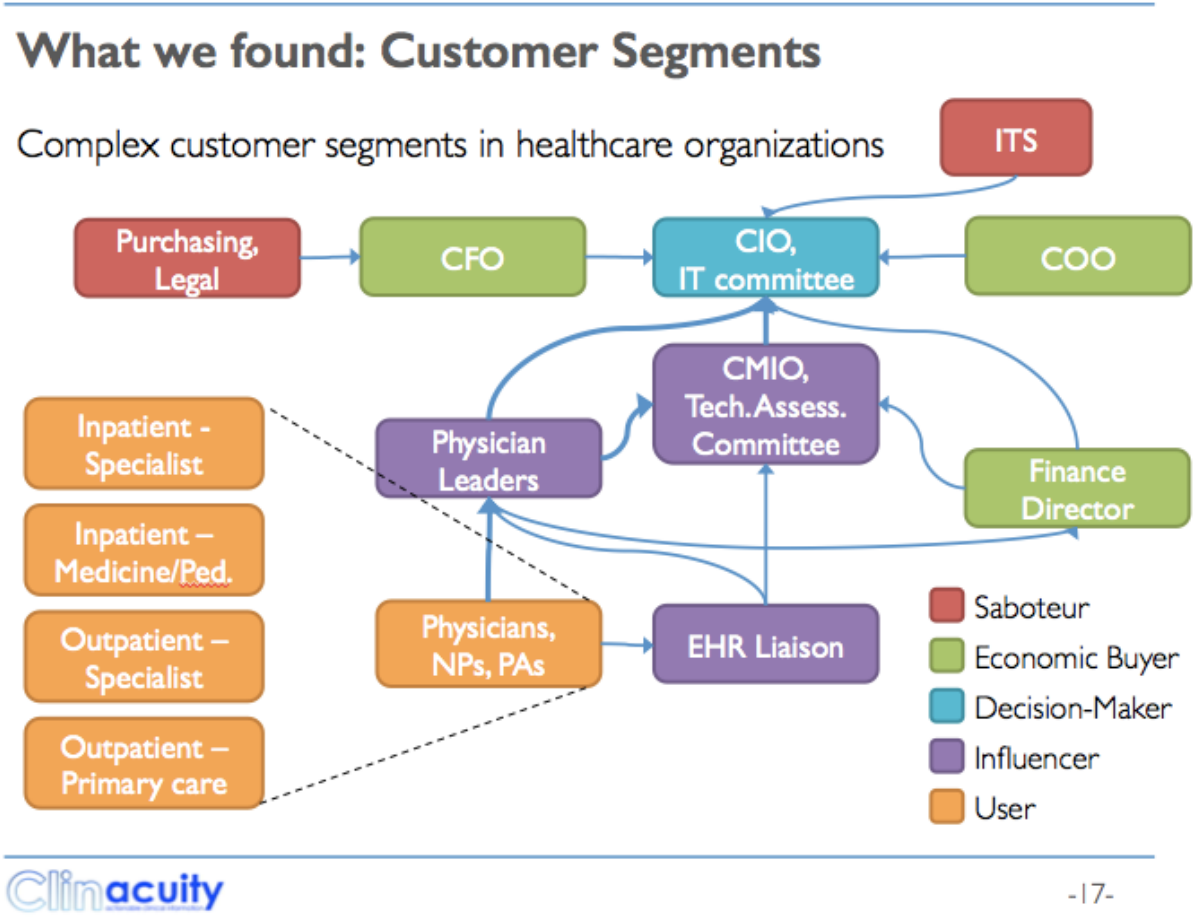
What we found: Customer Segments

Customer archetype: Inpatient EHR user – Specialist

Interventional Radiologist
Male, 40-65 years old
Attending physician, specialist
Not the buyer, but the champion
Motivations: Less time using EHR and more with patient; Easy clinical documentation; High risk patient care; See more patients; Optimize revenue.
Influenced by: Department chair, Peers, Scientific knowledge (journals, web)

http://www.slideshare.net/tomgilb1/savedfiles?s_title=clinacuity-icorpsnih-121014&user_login=sblank

Complex Stakeholders



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Interviewing 100 Stakeholders

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Techniques of Value Analysis and Engineering – Lawrence D. Miles

MATRIX EVALUATION CHART

Project: MULTIDIRECTIONAL AIR PROJECTOR

Criterion: PERFORMANCE

Date: 4-30

	FUNCTION									
	K. PRESSURE RIGIDITY	J. EASY ASSEMBLY	G. RESIST DAMAGE	F. LOOK GOOD	E. RESIST CORROSION	D. RESIST HEAT	C. CONTROL FLOW	B. DIRECT AIR	A. DISTRIBUTE AIR	
Function Rank No.(n)	1	2	3	4	5	6	7	8	9	
Function Rating No.(ϕ)	1	1	2	4	5	6	7	8	9	
IDEA	SATISFACTION FACTOR(s)									Σϕs EST. COST
a. ORIGINAL PRODUCT PARTS W,X,W,Y	10	1	3	9	8	9	6	8	10	349 $55
b.										
c. ELIMINATE PARTS X+Y	10	8	4	10	8	9	6	8	10	356 $47
d. MANUFACTURE FROM PLASTIC-COATED OR PRE-PAINTED MATERIAL	10	8	4	10	8	9	6	8	10	356 NOT PRACTICAL
e. BUILD IN LOUVRES TO HEAD	10	10	4	6	8	9	6	7	10	334 NO SAVING
f. RIVET LOUVRES IN DUCT INSTEAD OF SCREW	10	10	4	10	8	9	6	8	10	358 $54
g. MANUFACTURE IN GALVATITE MAT'L	10	8	8	5	9	9	6	8	10	349 $42
h. PLASTIC GRILLE	10	8	9	10	10	9	6	8	10	376 NO SAVING
j. SET UP INTERIOR PAINTING FACILITY	10	8	7	10	8	9	6	8	10	362 NEEDS INVESTIGATING
k. DESIGN A SINGLE DOUBLE HEAD	10	10	7	10	8	9	7	9	10	379 $43
l. UNIDIRECTIONAL										$34
m.										
n.										
o.										
p.										
q.										
r.										

CONCLUSION: ITEM K.L OFFERS GREATEST POTENTIAL SAVINGS

Fig. 17-12 Matrix evaluation chart. (*Colt Heating and Ventilation Ltd.*)

Larry Miles, Techniques for Value Analysis and Engineering, 1993, 3rd Edition. Google books epub $1.99

last slide